

24/7 RF

Reference Book
for High Performance
RF Products

Version 2 - 2017



The Leading Global Partner in **RF** Power

Ampleon is a young and innovative company with 50 years of experience in RF Power.

Our name, derived from “amplify” (=enhance) and “eon” (=eternity), reflects the products we stand for and our commitment to “Amplify the future” of RF Power.

Solutions for a Variety of Segments

We are a leading company in the segments of Mobile Broadband; Broadcast; Industrial, Scientific & Medical, Air Traffic Control and Aerospace & Defense (LDMOS).

Furthermore, our technology and our drive in innovation have defined a new market segment for controlling heat and power: RF Energy, which enables us to improve the white goods and industrial landscape with sustainable and overall higher efficiency. Given our comprehensive line-up, we have set-out to exploit the full potential of data and energy transfer in RF.

Global Footprint and Customer Proximity

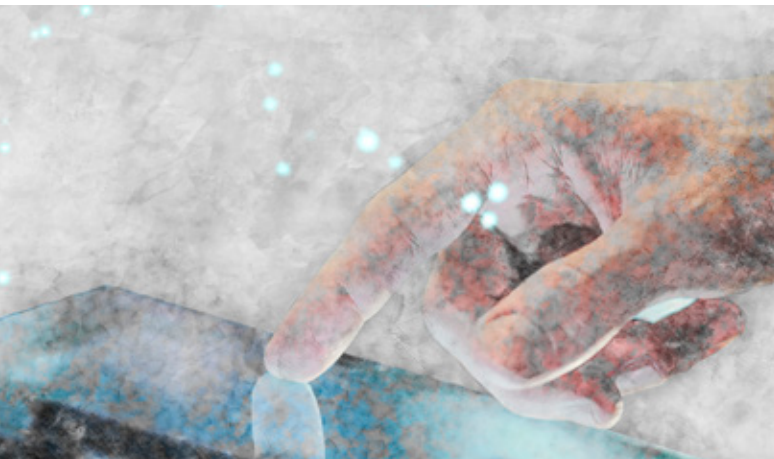
With our headquarters in Nijmegen/Netherlands and more than 1.250 employees worldwide, we are dedicated to creating optimal value for our customers. In more than 18 locations around the globe our international team of experts is always close to our customers and amplified by our core values of Focus, Excellence and Velocity. Our intention is to always bring our customers a significant step further with the help of outstanding RF power solutions.

Technology and Innovations

We leverage leading edge process technologies for higher performance (GaN, LDMOS) and cost-efficiency to deliver a leading portfolio of options for RF Power. Our product consistency is unprecedented and we drive innovations in traditional as well as new application areas.

Comprehensive Support

We build on decades of RF leadership and related application know-how. Our customers rely on our dedicated experts to help them solve their design challenges. We value high-quality long-term partnerships with our customers and thus create a clear competitive advantage.



Amplify the future

The second edition of **24/7 RF**

24/7 RF is a synonym for our dedication to RF Power: 24 hours, 7 days a week.

We are passionate about walking you through from a sketchy idea to a finished design. This is what we also reflect in this second edition by turning true pictures into the style of a medieval painting – a piece of artwork, just like our products.

This latest edition of our reference book not only includes our recommended product portfolio but also links it to numerous applications it is best suited for. It features product highlights, describes technologies, reveals latest trends, shows explanatory diagrams, lists features and types, packaging and packing data.

Beyond, you will find information about design support, cross references and replacements. We are convinced that 24/7 RF is the ultimate guide to anything you need to know about Ampleon's High Performance RF products.

Enjoy reading!

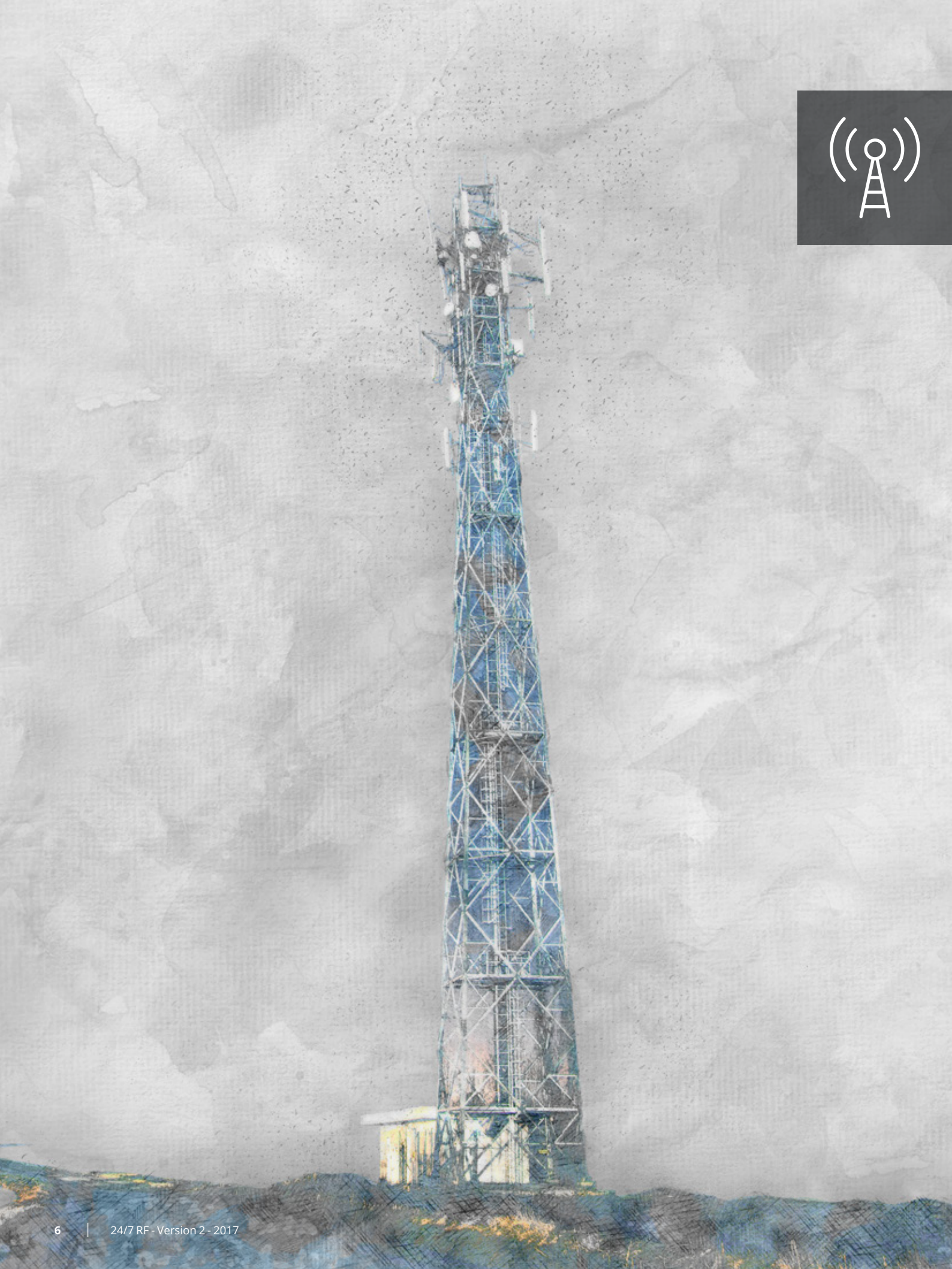


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Empowering Next Generation Mobile Communications

1. RF Applications

1.1 Mobile Broadband

1.1.1 Base Stations (all cellular standards and frequencies)

RF Power Transistors for Base Stations

Ampleon is the fastest growing supplier of LDMOS transistors for cellular infrastructure, leading the WCDMA and LTE markets. Our promise is unprecedented performance combined with best-in-class application support and constant innovation. Our design and manufacturing technologies ensure the best PA manufacturing yields in the industry.

Ampleon's latest 9th and 10th generation LDMOS RF transistors offer the best solutions for all cellular frequency bands. With the current industry focus on cost reduction, we are extending our product portfolio with OMP and MMIC product families, which combine high performance with low cost.

Single-Package Asymmetric Doherty (PAD) Transistors and MMICs, Integrated Doherty

PAD devices offer the highest efficiency, smallest footprint, and best cost-effectiveness, and can deliver P1dB power levels up to 550 W. These products are DPD-friendly and developed to offer excellent video bandwidth. Our wide product portfolio covers frequency bands from 450 MHz to 3.8 GHz and average power levels from 2 to 80 W. Discrete single-stage transistors and asymmetric MMICs are available to suit most applications, from picocells to macrocells. We recently introduced 2-stage integrated Doherty IC's to reduce the size of the PAs for power levels of up to 8 W average. They are available in symmetric and asymmetric versions to suit all applications, from driver (symmetric) to massive-MIMO and micro-cell (asymmetric). These Doherty amplifiers integrate both the splitter and combiner inside the package and necessitate minimum external circuitry to minimize cost and board space.



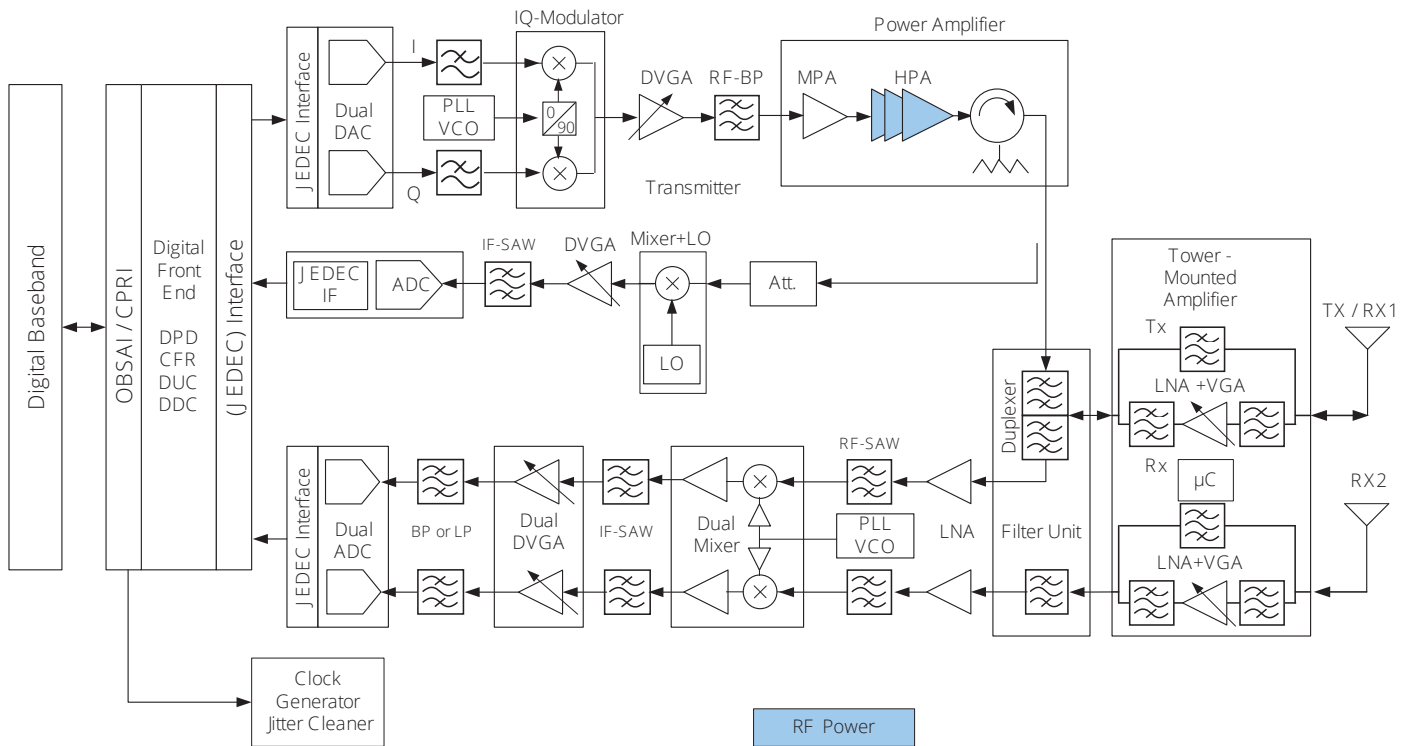
Product Highlight: LDMOS PAD Transistor BLC10G18XS-320AVT

The BLC10G18XS-320AVT is a 320 W LDMOS packaged asymmetric Doherty power transistor for base station applications at frequencies from 1805 MHz to 1880 MHz.

Features

- Excellent ruggedness
- High-efficiency
- Low thermal resistance providing excellent thermal stability
- Lower output capacitance for improved performance in Doherty applications
- Designed for low memory effects providing excellent digital pre-distortion capability
- Integrated ESD protection

Application Diagram of a Base Station



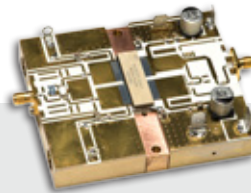
Recommended Products

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)
BLP7G22-05	700	2700	5	28
BLP8G27-5	700	2700	5	28
BLP7G22-10	700	2700	10	28
BLP8G27-10	700	2700	10	28
BLF9G38-10G*	3400	3800	10	28
BLM8G0710S-15PB(G)	700	1000	15 ⁽¹⁾	28
BLP9G0722-20(G)	700	2700	20	28
BLM8G1822-20B*	1800	2200	20 ⁽¹⁾	28
BLM7G1822S-20PB(G)	1805	2170	20 ⁽¹⁾	28
BLM9D2325-20AB*	2300	2500	20 ⁽¹⁾	28
BLM9D2527-20AB	2500	2700	20 ⁽¹⁾	28
BLM8D1822-25B*	1800	2200	25 ⁽¹⁾	28

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)
BLM9D2327-25B*	2300	2700	25 ⁽¹⁾	28
BLM8G0710S-30PB(G)	700	1000	30 ⁽¹⁾	28
BLP9H10S-30*	700	1000	30	50
BLM7G1822S-40ABG	1805	2170	40 ⁽¹⁾	28
BLM7G1822S-40PB(G)	1805	2170	40 ⁽¹⁾	28
BLM7G1822S-40AB	1805	2170	40 ⁽¹⁾	28
BLM8G0710S-45AB(G)	700	1000	45 ⁽¹⁾	28
BLP8G10S-45PG	700	1000	45	28
BLP8G10S-45P	700	1000	45	28
BLM8D1822S-50PB(G)	1805	2170	50 ⁽¹⁾	28
BLM8G0710S-60PB(G)	700	1000	60 ⁽¹⁾	28
BLC9H10XS-60P*	700	1000	60 ⁽¹⁾	50

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.2



Product Highlight: 80 W LDMOS Packaged Asymmetric Doherty Power Transistor for Base Station Applications at Frequencies from 1805 MHz to 1880 MHz BLC9G20XS-550AVT

A compact Doherty design based on three BLC9G20XS-550AVT devices achieves 48 % efficiency at 80 W average output power and 15.5 dB gain with a 2-carrier LTE signal. It has a peak power capability (P3dB) of 550 W at 28 V supply voltage.

This Doherty is designed for LTE band 3 operation and is tailored to very high peak power and volume manufacturing with high yields without tuning. The PA features very high video bandwidth, enabling full-band operation.

Recommended Products (continued)

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)
BLC8G27LS-60AV	2300	2690	60 ⁽¹⁾	28
BLF8G38LS-75V	3400	3800	75 ⁽¹⁾	30
BLM7G1822S-80ABG	1805	2170	80 ⁽¹⁾	28
BLM7G1822S-80PBG	1805	2170	80 ⁽¹⁾	28
BLM7G1822S-80PB	1805	2170	80 ⁽¹⁾	28
BLM7G1822S-80AB	1805	2170	80 ⁽¹⁾	28
BLF9G38LS-90P	3400	3600	90	28
BLF8G24LS-100(G)V	2300	2400	100	28
BLF8G27LS-100(G)V	2500	2700	100	28
BLC8G27LS-100AV	2496	2690	100 ⁽¹⁾	28
BLC9G20LS-120V	1805	1995	120 ⁽¹⁾	28
BLF8G22LS-140	2000	2200	140	28
BLF8G27LS-140V	2600	2700	140	32
BLC8G27LS-140AV	2496	2690	140 ⁽¹⁾	28
BLF8G24LS-150(G)V	2300	2400	150	28
BLF8G27LS-150(G)V	2500	2700	150	28
BLC8G27LS-151AV	2496	2690	150 ⁽¹⁾	28
BLF8G10LS-160V	925	960	160	30
BLF8G10L(S)-160	920	960	160	30
BLF8G20LS-160V	1800	2000	160	28
BLC9G20XS-160AV	1805	1880	160 ⁽¹⁾	30
BLC9G20LS-160PV	1805	2000	160 ⁽¹⁾	28
BLC8G21LS-160AV	1805	2025	160 ⁽¹⁾	28
BLF9G20LS-160V	1800	2000	160	28
BLP8G21S-160PV	1880	2025	160	28
BLC8G27LS-160AV	2496	2690	160 ⁽¹⁾	28
BLF8G19LS-170BV	1800	1990	170	32
BLC9G24XS-170AV	2300	2400	170 ⁽¹⁾	30
BLC8G27LS-180AV	2496	2690	180 ⁽¹⁾	28
BLF8G22LS-200(G)V	2110	2170	200	28
BLC8G27LS-210PV	2500	2700	200 ⁽¹⁾	28
BLF8G22LS-205V	2100	2200	205	28
BLF8G20LS-220	1800	2000	220	28
BLF8G22LS-220	2110	2170	220	28
BLF8G20LS-230V	1800	2000	230	28
BLC9G20LS-240PV	1805	1995	240 ⁽¹⁾	28
BLF8G22LS-240	2110	2170	240	28
BLC8G24LS-241AV	2300	2400	240 ⁽¹⁾	28

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.2

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)
BLC8G27LS-240AV	2500	2700	240 ⁽¹⁾	28
BLF8G09LS-270W	716	960	270	28
BLF8G10LS-270GV	790	960	270	28
BLF8G10LS-270	820	960	270	28
BLF8G09LS-270GW	716	960	270	28
BLF8G10LS-270V	790	960	270	28
BLP8G10S-270PW	700	900	270	28
BLF8G22LS-270GV	2110	2170	270	28
BLF8G22LS-270	2110	2170	270	28
BLF8G22LS-270V	2110	2170	270	28
BLF8G10LS-300P	700	1000	300	28
BLC9H10XS-300P*	700	1000	300 ⁽¹⁾	50
BLC8G20LS-310AV	1900	2000	310 ⁽¹⁾	28
BLC9G20LS-361AVT	1805	1990	360 ⁽¹⁾	28
BLC9G27XS-380AVT	2500	2700	380 ⁽¹⁾	32
BLC8G09XS-400AVT	859	960	400 ⁽¹⁾	32
BLF8G09LS-400PW	716	960	400	28
BLF8G09LS-400PGW	716	960	400	28
BLC9H10XS-400P*	700	1000	400 ⁽¹⁾	50
BLC9G15LS-400AVT	1452	1511	400 ⁽¹⁾	32
BLC9G15XS-400AVT	1452	1511	400 ⁽¹⁾	32
BLC8G20LS-400AV	1800	2000	400 ⁽¹⁾	32
BLF8G20LS-400PV	1805	1995	400	28
BLF8G20LS-400PGV	1805	1995	400	28
BLC9G20XS-400AVT	1805	1880	400 ⁽¹⁾	32
BLC9G22XS-400AVT	2110	2200	400 ⁽¹⁾	32
BLC8G22LS-450AV	2110	2170	450 ⁽¹⁾	28
BLC9G20LS-470AVT	1805	1990	470 ⁽¹⁾	28
BLC9G20XS-550AVT	1805	1880	550 ⁽¹⁾	28
BLC9H10XS-800P*	700	1000	800 ⁽¹⁾	50
BLC10G20LS-240PWT	1805	1995	240 ⁽¹⁾	28
BLC10G22LS-240PVT	2110	2220	240 ⁽¹⁾	28
BLC10G18XS-320AVT*	1800	1900	320 ⁽¹⁾	32
BLC9H10XS-350A*	600	1000	350 ⁽¹⁾	50
BLC9G21LS-60AV*	2500	2700	380 ⁽¹⁾	32
BLC9H10XS-400A*	700	1000	400 ⁽¹⁾	50
BLC9H10XS-600A*	700	1000	600 ⁽¹⁾	50



Product Highlight: Power LDMOS Transistor BLP9G0722-20G

The BLP9G0722-20G is a 20 W plastic LDMOS discrete driver for base station applications at frequencies from 400 MHz to 2700 MHz.

Features

- High efficiency
- Small footprint
- Excellent ruggedness
- Designed for broadband operation
- Excellent thermal stability
- High power gain
- Integrated ESD protection

Integrated Doherty Amplifiers for State-of-the-Art Wireless Infrastructure

In order to achieve the smallest footprint possible, Ampleon combined its latest generations of LDMOS technology with the Doherty concept. We offer the world's first fully integrated Doherty power amplifiers in a small package. They are available in symmetric and asymmetric versions to suit all applications, from driver (symmetric) to massive-MIMO and micro cell (asymmetric). These 2-stage Doherty amplifiers integrate both the splitter and combiner inside the package and necessitate minimum external circuitry to minimize cost and board space.

The world's first fully integrated Doherty transistor looks like an ordinary class-AB transistor but contains a splitter, dual-stage main and peak devices, delay lines, and a combiner integrated inside the package. With the ease of use of an ordinary class-AB amplifier, it also provides significant space and cost savings. It is ideally suited for space-constrained applications like small cell base stations and massive antenna arrays.

Integrated Doherty Portfolio: 1.8 - 2.2 GHz

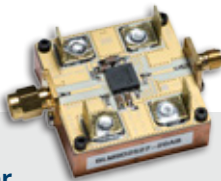
Product	Doherty Configuration	Matching	Band	P _{3dB}	Efficiency @ 8 dB BO	Gain	Technology
BLM9D1822-12B*	2-way 1:1	50 Ω in	1.8 - 2.2 GHz	41 dBm	tbd	tbd	LDMOS MMIC
BLM8D1822-25B*	2-way 1:1	50 Ω in	1.8 - 2.2 GHz	44 dBm	tbd	tbd	LDMOS MMIC
BLM9D1822-25B*	2-way 1:1	50 Ω in	1.8 - 2.2 GHz	44 dBm	tbd	tbd	LDMOS MMIC
BLM9D1822S-25PB(G)*	2-way 1:1	50 Ω in	1.8 - 2.2 GHz	44 dBm	tbd	tbd	LDMOS MMIC
BLM9D18-25AB*	2-way 1:2	50 Ω in	1.8 GHz	44.8 dBm	tbd	tbd	LDMOS MMIC
BLM9D1822S-50PB(G)*	2-way 1:1	50 Ω in	1.8 - 2.2 GHz	47 dBm	tbd	tbd	LDMOS MMIC
BLM8D1822S-50PB(G)	2-way 1:1	50 Ω in	1.8 - 2.2 GHz	48.4 dBm	39 %	27 dB	LDMOS MMIC

Integrated Doherty product portfolio: > 2.3 GHz

Product	Doherty Configuration	Matching	Band	P _{3dB}	Efficiency @ 8 dB BO	Gain	Technology
BLM9D2327-12B*	2-way 1:02	50 Ω in	2.3 - 2.7 GHz	41 dBm	tbd	tbd	LDMOS MMIC
BLM9D2527-20AB	2-way 1:02	50 Ω in	2.5 - 2.7 GHz	43 dBm	43 % ⁽¹⁾	28 dB	LDMOS MMIC
BLM9D2325-20AB	2-way 1:02	50 Ω in	2.3 - 2.5 GHz	43 dBm	tbd	tbd	LDMOS MMIC
BLM9D2327-25B*	2-way 1:1	50 Ω in	2.3 - 2.7 GHz	44 dBm	tbd	tbd	LDMOS MMIC

⁽¹⁾ 8.5 dB back-off

* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.2



Product Highlight: 20 W LDMOS Packaged Asymmetric Doherty Power Transistor for Base Station Applications at Frequencies from 2500 MHz to 2700 MHz BLM9D2527-20AB

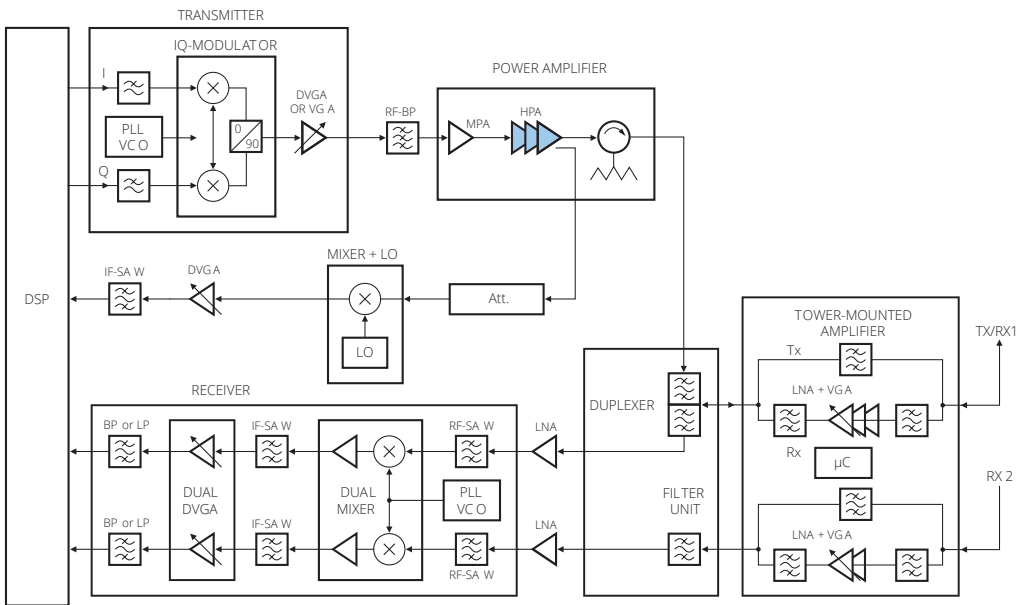
An ultra-compact Doherty design based on BLM9D2527-20AB device achieves 43 % efficiency at 3 W average output power and 28 dB gain with LTE signal. It has a peak power capability (P_{3dB}) of 20 W at 28 V supply voltage.

This Doherty is designed for 4.5G band 41 and is tailored to volume manufacturing with high yields without tuning. The PA features high video bandwidth, enabling full-band operation.

1.1.2 Small Cells

With the explosion of cellular data usage and the limited number of sites available for new macro base stations, operators have to find new ways of offering high data rates and excellent quality of service. One option is to strengthen the macro network with small cells, known as picocells (0.25 to 1 W average) and microcells (2 to 5 W average). Ampleon offers several types of solutions to the small cell PAs designer, optimized for performance, integration, or cost.

Application Diagram of a typical Small Cell Base Station



Recommended Products

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)
BLP8G27-5	700	2700	5	28
BLP7G22-05	700	2700	5	28
BLP7G22-10	700	2700	10	28
BLP8G27-10	700	2700	10	28
BLF9G38-10G*	3400	3800	10	28
BLM8G1822-20B*	1800	2200	20 ⁽¹⁾	28
BLP9G0722-20(G)	700	2700	20	28
BLM7G1822S-20PB(G)	1805	2170	20 ⁽¹⁾	28
BLM9D2325-20AB*	2300	2500	20 ⁽¹⁾	28
BLM9D2527-20AB	2500	2700	20 ⁽¹⁾	28
BLM8D1822-25B*	1800	2200	25 ⁽¹⁾	28

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.2

Product Highlight: Power LDMOS Transistor BLM8D1822-25B

The BLM8D1822-25B is a 25 W plastic PQFN LDMOS dual-stage integrated Doherty PA designed for micro cell applications. This cost-efficient, wideband device has an ultra-small footprint and covers all base-station frequencies from 1800 to 2200 MHz.



Features

- High efficiency
- Excellent ruggedness
- Designed for broadband operation
- Excellent thermal stability
- High power gain
- Integrated ESD protection

1.1.3 4.5G and Massive MIMO (multiple-input and multiple-output)

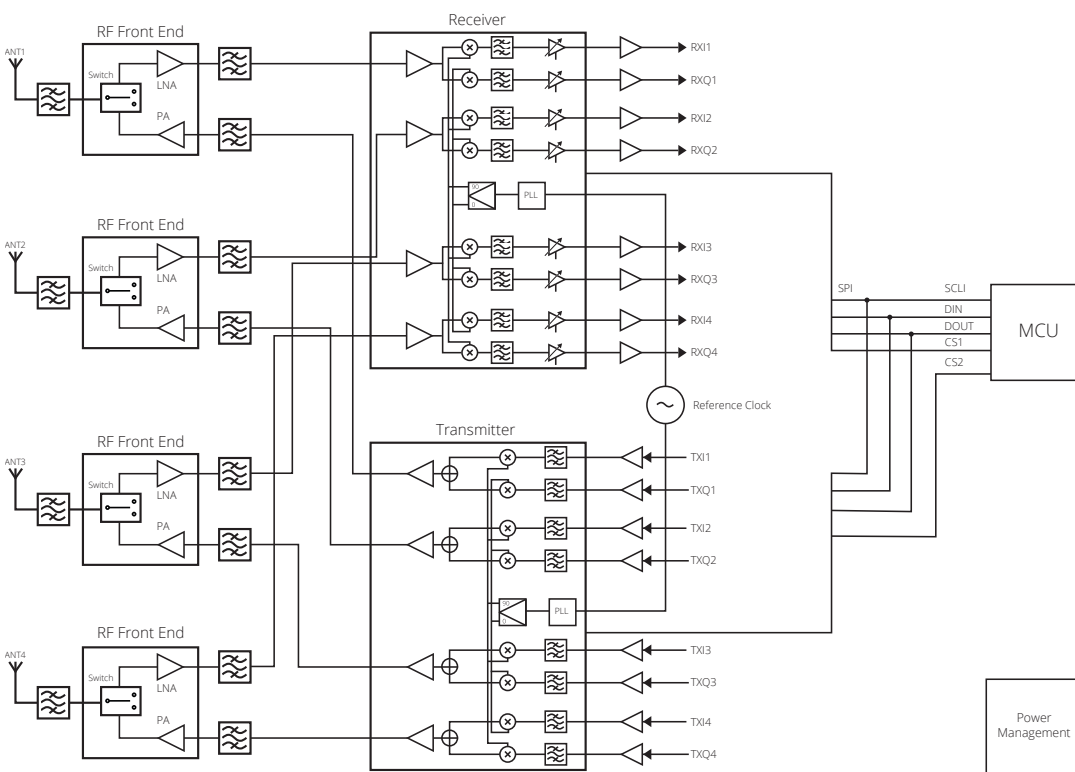
With the increasing need for higher transmission capability and M2M connection, today's 4G network is not capable of meeting the next generation mobile broadband (MBB) requirements. On the other hand, 5G will presumably not be commercially deployed until 2020. Hence there is a need for an in-between technology to fill in the gap. 4.5G, also known as LTE-Advanced Pro, is a smoother evolution of 4G to provide Gigabit transmission capability and massive M2M connection for MBB. It is officially released in the Release-13 version of 3GPP.

4.5G adopts a number of 5G technologies. Massive MIMO is one of the key adoptions. Massive MIMO aims to significantly increase the number of antenna elements and spatial streams in a base transceiver station (BTS) to be much greater than the configurations used in base stations today to enhance reliability and throughput.

Ampleon is one of the market leaders in terms of PA solutions for massive MIMO.

Application Diagram of MIMO

The design diagram with the scheme of zero-IF transceiver is shown below, in which each highly integrated receiver or transmitter chip with built-in PLL supports 4 receiving or transmitting channels respectively.



Product Highlight: LDMOS 2-stage integrated Doherty MMIC BLM8D1822S-50PB(G)

The BLM8D1822S-50PB(G) is a dual section, 2-stage fully integrated Doherty MMIC solution. The carrier and peaking device, input splitter and output combiner are integrated in a single package. This multiband device is perfectly suited as general purpose driver or small cell final in the frequency range from 1805 MHz to 2170 MHz, available in gull wing or flat lead outline.



Features

- High efficiency
- Excellent ruggedness
- Excellent thermal stability
- High power gain
- Integrated ESD protection

Recommended Products

Type	F _{min} (MHz)	F _{max} (MHz)	P _{3dB} (W)	V _{DS} (V)
BLM9D2325-20AB*	2300	2500	20 ⁽¹⁾	28
BLM9D2527-20AB	2500	2700	20 ⁽¹⁾	28
BLM8D1822-25B*	1800	2200	25 ⁽¹⁾	28
BLM9D2327-25B*	2300	2700	25 ⁽¹⁾	28
BLM9D18-25AB*	1800	1880	25 ⁽¹⁾	28
BLM8D1822S-50PB(G)	1805	2170	50 ⁽¹⁾	28

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.2

Product Highlight: Power LDMOS Transistor BLM9D18-25AB



The BLM9D18-25AB is a 25 W plastic PQFN LDMOS dual-stage integrated asymmetrical Doherty PA designed for MIMO applications. This cost-efficient device has an ultra-small footprint and covers base-station frequencies from 1800 to 1880 MHz.

Features

- High efficiency
- Excellent ruggedness
- Excellent thermal stability
- High power gain
- Integrated ESD protection



Amplifying the Future of TV & Broadcasting

1.2 Broadcast

Amplifying the Future of TV & Broadcasting

Digital TV accounts for over 70 % of the broadcasting market. With parts of the UHF band reallocated for mobile telephony (e.g. LTE), operators need to make the most efficient use of the remaining spectrum.

LDMOS Solutions from the Industry Leader for all Segments of the Broadcast Market

Addressing these demands for more efficiency, the broadcasting market is moving away from traditional class A-B solutions. Solutions based on narrowband and ultra-wideband Doherty power amplifiers deliver increased efficiency of 50 % and above. In the near future, asymmetrical Doherty amplifiers may provide even higher efficiencies.

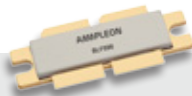
We are committed to the UHF-TV industry and continue to invest in UHF-TV LDMOS technology, so that we can deliver products that support increasingly rich content.

VHF, FM, and Analog TV Markets

Ampleon has enabled the market to transition to and reap the benefits of LDMOS-based solutions. And we will continue to support our legacy products through customer product life-cycles. We have recently enhanced our broadcast offering with a full range of eXtremely Rugged (XR) products in our Overmoulded Plastic (OMP) package platform.

Solutions

- FM/HDR/DAB Radio
- UHF/D-TV
- VHF/D-TV



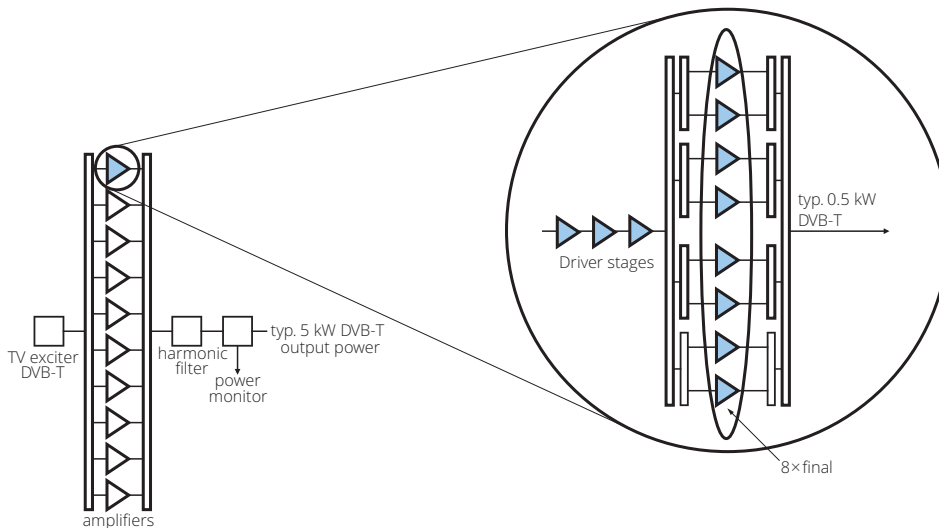
Product Highlight: UHF Power LDMOS Transistor BLF898(S)

Designed for broadcast Doherty transmitter applications, including broadcast transmitters in the UHF band and digital broadcasting systems, this 900 W LDMOS RF power transistor delivers excellent ruggedness and is ideally suited for use in digital and analog environments.

Features

- Designed for symmetric and asymmetric Doherty operation
- High efficiency
- Integrated dual sided ESD protection
- Excellent ruggedness
- High power gain
- Excellent reliability
- Easy power control

Application Diagram of a TV Transmitter



1.2.1 FM/HDR/DAB Radio

FM (88 - 108 MHz)

FM applications need pure power, resulting in high power building blocks. Ampleon's FM solutions not only deliver high power but are highly efficient, with our latest devices exceeding 85 % efficiency.

Furthermore, FM solutions must be capable of operating under the harshest of conditions. Our eXtremely Rugged (XR) packaging, which supports VSWR > 65 : 1, ensures our products and your service keeps going despite severe operational conditions.

DAB and HDR

DAB and HDR radio have the same basic requirements as FM: power and robustness. In addition, as they operate across a broader frequency range, they also need to be highly linear. Ampleon's BLFxxxXR transistor series is both highly linear and stable, making them ideal for these systems.

Ampleon also creates demonstration and reference designs that are optimized in size and performance for radio broadcasting. These designs are often implemented directly by customers into their systems.

Features and Benefits

- Small footprint
- Ready for production designs
- Printed planar balun design instead of coaxial baluns



Product Highlight: Power LDMOS Transistor BLF188XR(S)

This 1400 W high power, extremely rugged LDMOS power transistor is ideal for broadcast and industrial applications in the HF to 600 MHz band.

Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability
- Designed for broadband operation (HF to 600 MHz)

Recommended Products for FM/HDR/DAB Bands

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	Test signal
BLP10H603	10	1400	2.5	50	62	22.8	CW
BLP10H605	10	1400	5	50	59.6	22.4	CW
BLP35M805	10	3500	5	28	17	18	CW pulsed, class-AB
BLP10H610	10	1400	10	50	60	22	CW
BLP27M810	10	2700	10	28	19	17	Pulsed CW
BLF571	10	500	20	50	70	27.5	CW
BLP05H635XR(G)	10	600	35	50	75	27	Pulsed RF
BLP05H675XR(G)	10	600	75	50	75	27	Pulsed RF
BLP05H6110XR(G)	10	600	110	50	75	27	Pulsed RF
BLP05H6150XR (G)	10	600	150	50	75	27	Pulsed RF
BLP05H6250XR(G)	10	600	250	50	75	27	Pulsed RF
BLF182XR(S)	10	600	250	50	75	28	Pulsed RF
BLP05H6350XR(G)	10	600	350	50	75	27.5	Pulsed RF
BLF183XR(S)	10	600	350	50	75	28	Pulsed RF
BLF174XR(S)	10	128	600	50	73	29	Pulsed RF
BLF184XR(S)	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRG	10	600	700	50	73.5	23.9	Pulsed RF
BLP05H6700XR	10	600	700	50	73	23	Pulsed RF
BLF178P	10	128	1200	50	75	28.5	Pulsed RF
BLF178XR(S)	10	128	1400	50	72	28	Pulsed RF
BLF188XR(S)	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRG	10	600	1400	50	73	24.4	Pulsed RF
BLF189XRA(S)*	1	300	1600	50	tbd	tbd	CW
BLF189XRB(S)*	1	150	1900	50	tbd	tbd	Pulsed

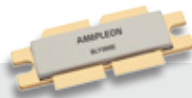
* Check the status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.3

1.2.2 UHF/D-TV

The UHF (470 - 800 MHz) market is diversifying and taking different approaches to the implementation of full band coverage with highest possible efficiency. The two main paths are single band ultra-wideband Doherty (UWB) solutions or classical or wideband Doherty solutions using sub-bands.

Ampleon supports both approaches with dedicated RF power transistors and application designs. For example, our latest BLF888E transistor is a 3-band ultra-wideband Doherty solution achieving 50 % efficiency across the band. This is a unique solution in the market.

For classical Doherty we are also developing solutions based on our upcoming BLF898 transistor which will have the highest DVB-T power capability (180 W average) and will be capable of covering the complete UHF band using a flexible output combiner design with multiple sub-bands. We are also working on an odd-mode Doherty solution based on the upcoming BLF898(S).



Product Highlight: UHF Power LDMOS Transistor BLF888E(S)

The BLF888E is a 750 W LDMOS RF power transistor for UHF broadcast Doherty transmitter applications. The excellent ruggedness of this device makes it ideal for digital and analog transmitter applications.

Features

- Designed for asymmetric Doherty operation
- High efficiency
- Integrated ESD protection
- Excellent ruggedness
- High power gain
- Excellent reliability
- Easy power control

Recommended Products for UHF/D-TV (470 - 800 MHz)

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	P _{L(AV)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP35M805	10	3500	5	-	28	17	18	CW pulsed, class-AB
BLP27M810	10	2700	10	-	28	19	17	Pulsed CW
BLF640	10	2200	10	-	28	31	19.3	1-c W-CDMA
BLF571	10	500	20	-	50	70	27.5	CW
BLP10H630P(G)	10	1000	30	-	50	68	18	Pulsed RF
BLF642	1	1400	35	-	32	63	19	CW
BLP10H660P (G)	10	1000	60	-	50	68	18	Pulsed RF
BLP10H690P(G)	10	1000	90	-	50	68	18	Pulsed RF
BLP10H6120P(G)	10	1000	120	-	50	68	18	Pulsed RF
BLF881(S)	1	1000	140	-	50	49	21	CW
BLP15M7160P	10	1500	160	-	28	59.7	19.4	CW
BLF882(S)	10	860	200	-	50	63	20.6	CW
BLF884P(S)	470	860	300	-	50	46	21	CW
BLF888A(S)	470	860	600	110	50	31	20	DVB-T (8k OFDM)
BLF888B(S)	470	860	650	120	50	33	21	DVB-T (8k OFDM)
BLF888D(S)	470	806	-	115	50	40	17	DVB-T (8k OFDM)
BLF888E(S)	470	790	-	150	50	52	17	DVB-T (8k OFDM)
BLF898(S)*	470	806	900	180	50	32	16	DVB-T (8k OFDM)

* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.3

1.2.3 VHF/D-TV

VHF-TV Band (170 - 250 MHz)

Ampleon's RF solutions for VHF-TV are highly efficient, with our latest solutions exceeding 85 % efficiency. These high power solutions provide the building blocks needed to deliver the necessary broadcast reach. These products also need to be able to operate in extremely harsh conditions, making them the ideal candidates for our eXtremely Rugged offering which supports VSWR > 65 : 1. For design purposes, linearity needs to be pre-correctable.

For VHF-TV applications, Ampleon offers demonstration and reference class-AB applications that are optimized in both size and performance. These designs are often implemented directly by customers into their systems.

Recommended Products VHF-TV Band (170 - 250 MHz)

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP10H603	10	1400	2.5	50	62	22.8	CW
BLP10H605	10	1400	5	50	59.6	22.4	CW
BLP35M805	10	3500	5	28	17	18	CW pulsed, class-AB
BLP10H610	10	1400	10	50	60	22	CW



Product Highlight: Power LDMOS Transistor BLP05H6350XR(G)

The BLP05H6350XR is a 350 W LDMOS RF power transistor for broadcast transmitter and industrial applications. It can deliver 350 W in broadband applications from HF to 600 MHz. Its excellent ruggedness and broadband performance make it ideal for digital transmitter applications.

Features

- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent reliability
- Easy power control

Recommended Products VHF-TV Band (170 - 250 MHz) (continued)

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP27M810	10	2700	10	28	19	17	Pulsed CW
BLF571	10	500	20	50	70	27.5	CW
BLP05H635XR(G)	10	600	35	50	75	27	Pulsed RF
BLP05H675XR(G)	10	600	75	50	75	27	Pulsed RF
BLP05H6110XR(G)	10	600	110	50	75	27	Pulsed RF
BLP05H6150XR(G)	10	600	150	50	75	27	Pulsed RF
BLP05H6250XR(G)	10	600	250	50	75	27	Pulsed RF
BLF182XR(S)	10	600	250	50	75	28	Pulsed RF
BLF573(S)	10	500	300	50	70	27.2	CW
BLP05H6350XR(G)	10	600	350	50	75	27.5	Pulsed RF
BLF183XR(S)	10	600	350	50	75	28	Pulsed RF
BLF574	10	500	600	50	70	26.5	CW
BLF574XR(S)	10	500	600	50	74.7	24	Pulsed RF
BLF184XR(S)	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRG	10	600	700	50	73.5	23.9	Pulsed RF
BLP05H6700XR(G)	10	600	700	50	73	23	Pulsed RF
BLF578	10	500	1200	50	75	26	CW
BLF578XR(S)	10	500	1400	50	69	23.5	Pulsed RF
BLF188XR(S)	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRG	10	600	1400	50	73	24.4	Pulsed RF
BLF189XRA(S)*	1	300	1600	50	tbd	tbd	CW

* Check the status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.3

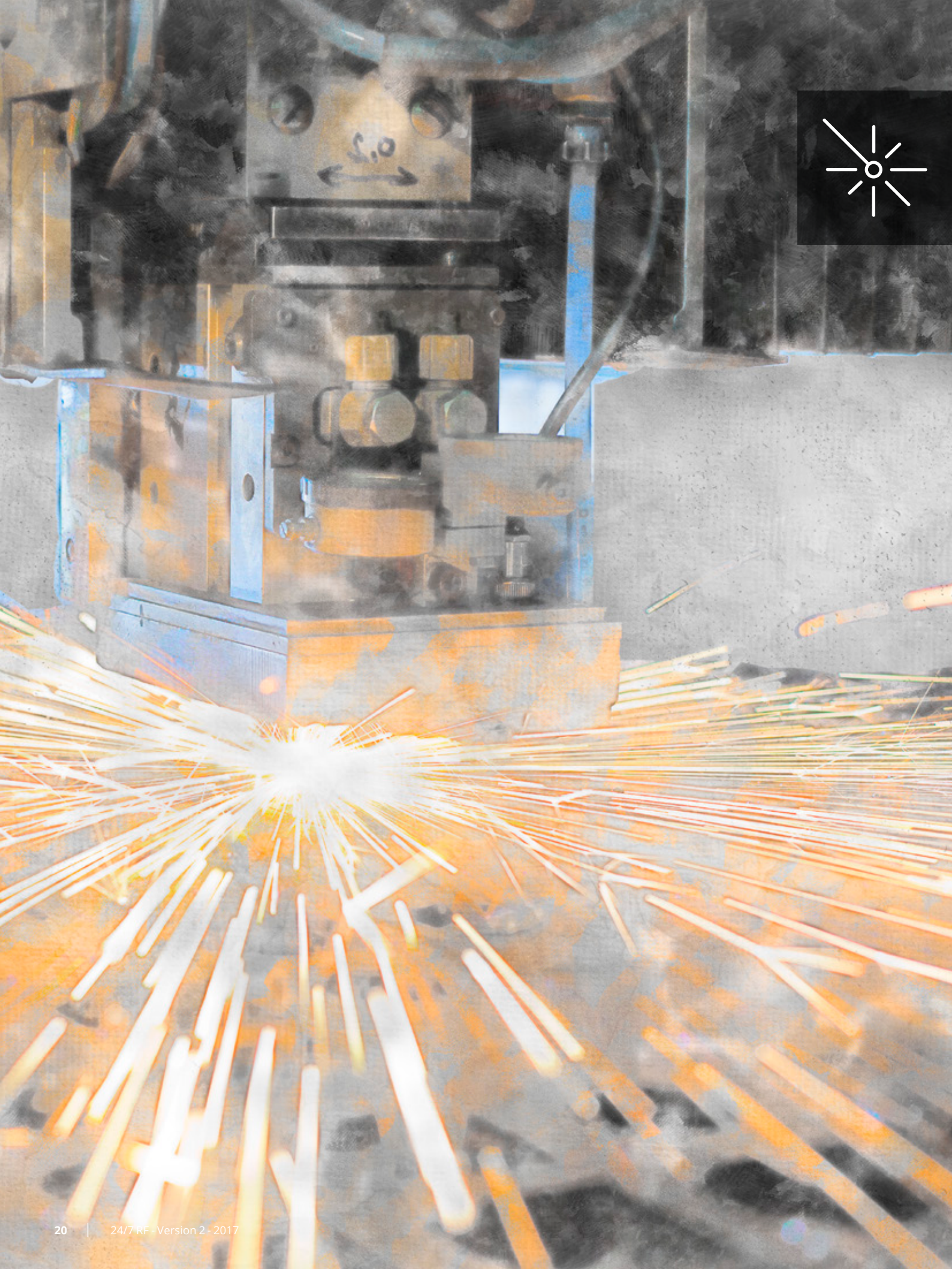


Product Highlight: Power LDMOS Transistor BLP05H6700XR(G)

The BLP05H6700XR is a 700 W extra rugged LDMOS power transistor optimized for broadcast and applications in the HF to 600 MHz band.

Features

- Easy power control
- Integrated dual sided ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal resistance due to copper flange
- Designed for broadband operation (HF to 600 MHz)



Robust Solutions Serving in Harsh and Sensitive Environments

1.3 Industrial, Scientific and Medical (ISM)

The ISM frequency bands feature a diverse range of applications including chemical processing, magnetic resonance imaging (MRI), electro coagulation surgical equipment, precipitation monitoring, and wind profiling. Yet, all these applications share common requirements, such as high output power, high efficiency, robustness and thermal stability.

Rugged Solutions, Harsh Environments

Systems operating in the ISM band need to share their bandwidth with short-range, low-power communications systems and radio-frequency identification (RFID) applications. Many ISM applications suffer from severely unmatched inputs and outputs, demanding very rugged solutions. Whatever the challenge, we have the RF power solutions you need.

RF Power for ISM up to 1600 MHz

Our portfolio includes field-proven LDMOS devices that help developers create ISM systems that deliver high performance and a long lifetime.

RF Power for the ISM 2.45 GHz Band

Due to its global availability, the 2.45 GHz band supports a wide range of ISM applications including medical therapy as well as many RF Energy applications (see section 1.4).

Low Power Transistors

Ranging from 2 W to tens of watts, our complete portfolio of low power RF transistors includes devices across all ISM frequencies and applications. This makes Ampleon the one-stop source for all your ISM RF needs.



Product Highlight: Power LDMOS Driver Transistor BLF189XRB(S)

The BLF189XRB is a 1900 W extremely rugged LDMOS power transistor for industrial applications in the HF to 150 MHz band.

Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability

Typical Applications

- RF drying
- RF welding
- Citizens' Band (CB) radio communication
- Magnetic Resonance Imaging (MRI)
- CO₂ lasers
- Plasma generators
- Particle accelerators
- RF heating
- RF thawing
- Chemical processing
- Plasma lighting

1.3.1 CO₂ Laser Exciters and Plasma Generators

CO₂ lasers turn electrical energy into concentrated infrared light energy. The plasma is formed by the gas when electrical energy transforms into heat. This same process is used for plasma generators.

High power CO₂ lasers are used for cutting and welding while lower power applications include engraving. Plasma generators are primarily used for power generation or to accelerate particle beams, and for plasma etching or deposition in the semiconductor industry.

These devices need high power amplifiers. High power generates heat. Even highly efficient designs still need to dissipate extra heat effectively and our ACP3 package, with its low thermal resistance, helps doing that even for very high power systems.

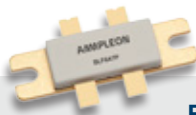
1.3.2 Medical and Industrial Imaging

For doctors or clinicians it is necessary to get pictures of the anatomy and the physiological processes of the body in both health and disease. Ampleon works with many established brands in helping improve the world of healthcare through safe, efficient and groundbreaking medical imaging concepts.

However MRI is not only used for medical applications, it can also be used in the industrial market. For example, MRI is used to measure gas flow in the petrochemical industry.

1.3.3 Particle Accelerators

Particle accelerators have endless potential including the development of clean energy, purification of air or water, targeted



Product Highlight: Broadband Power LDMOS Transistor BLF647P

The BLF647P is a 200 W LDMOS RF power transistor for industrial applications in the HF to 1500 MHz frequency range. Its excellent ruggedness and broadband performance make it ideal for digital applications.

Features

- Integrated ESD protection
- Excellent ruggedness
- High power gain
- High efficiency
- Excellent reliability
- Easy power control

cancer treatment, detecting suspicious shipments and of course discovering scientific breakthroughs.

There are three different types of particle accelerators: the synchrotron, linear accelerator (linac) and cyclotron.

A cyclotron accelerates charged particles outwards from the centre along a spiral path, using a rapidly varying (radio frequency) electric field, cyclotrons are widely used to produce particle beams in physics and nuclear medicine.

Synchrotrons are cyclic particle accelerators that enable large-scale facilities, since bending, beam focusing and acceleration can be separated into different components. The 27 km long Large Hadron Collider in CERN Switzerland is the world's largest synchrotron.

Linear accelerators (Linacs) are increasingly being used in the medical industry for cancer treatment and creating radioactive isotopes. Linacs run at high power with multiple amplifiers needed to generate particles.

1.3.4 Instrumentation

Ampleon offers a range of RF transistors and evaluation kits for RF instrumentation applications. Our wideband amplifiers feature low noise and are exceedingly linear, making them particularly suitable for feedback channels in a wide range of measuring equipment including vector signal transceivers, signal generators and RF power meters.

Recommended Products for ISM 0 - 500 MHz

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP10H603	10	1400	2.5	50	62	22.8	CW class-AB @ 860 MHz
BLP10H605	10	1400	5	50	59.6	22.4	CW pulsed class-AB @ 860 MHz
BLP10H610	10	1400	10	50	60	22	CW
BLP05H635XR(G)	10	600	35	50	75	27	Pulsed RF
BLP05H675XR(G)	10	600	75	50	75	27	Pulsed RF
BLP05H6110XR(G)	10	600	110	50	75	27	Pulsed RF
BLP05H6150XR(G)	10	600	150	50	75	27	Pulsed RF
BLF182XR(S)	10	600	250	50	75	28	Pulsed RF
BLP05H6250XR(G)	10	600	250	50	75	27	Pulsed RF
BLF183XR(S)	10	600	350	50	75	28	Pulsed RF
BLP05H6350XR(G)	10	600	350	50	75	27.5	Pulsed RF
BLF184XR(G)	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRS	10	600	700	50	73.5	23.9	Pulsed RF
BLP05H6700XR(G)	10	600	700	50	73	23	Pulsed RF
BLF188XR(S)	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRG	10	600	1400	50	73	24.4	Pulsed RF
BLF189XRA(S)*	1	300	1600	50	tbd	tbd	CW
BLF189XRB(S)*	1	150	1900	50	tbd	tbd	Pulsed

* Check the status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.4



Product Highlight: Power LDMOS Transistor BLF188XR(S)

The BLF188XR is a 1400 W extremely rugged LDMOS power transistor for industrial applications, capable of providing an outstanding 1600 W of peak output power. It can operate as high as 50 V and still pass extreme ruggedness testing. The BLF188XR transistor's ruggedness and excellent load properties make it ideal for MRI applications.

Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability

Recommended Products for ISM 0 - 1600 MHz

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	Test signal
BLP35M805	10	3500	5	28	17	18	CW pulsed, class-AB
BLF640	10	2200	10	28	31	19.3	1-c W-CDMA
BLP10H610	10	1400	10	50	60	22	CW
BLP27M810	10	2700	10	28	19	17	Pulsed CW
BLP10H630P(G)	10	1000	30	50	68	18	Pulsed RF
BLF642	1	1400	35	32	63	19	CW
BLP10H660P(G)	10	1000	60	50	68	18	Pulsed RF
BLP10H690P(G)	10	1000	90	50	68	18	Pulsed RF
BLF645	1	1400	100	32	56	18	CW
BLP10H6120P(G)	10	1000	120	50	68	18	Pulsed RF
BLP15M7160P	10	1500	160	28	59.7	19.4	CW
BLF1721M8LS200	1700	2100	200	28	28.5	19	2-c W-CDMA
BLF2324M8LS200P	2300	2400	200	28	32	17.2	1-c W-CDMA
BLF647P(S)	10	1500	200	32	70	18	Pulsed RF
BLF6G13L(S)-250P	1300	1300	250	50	56	17	CW
BLF6G15L(S)-500H	1400	1500	500	50	19	16	DVB-T (8k OFDM)
BLF10H6600P(S)	400	1000	600	50	46	20.8	2-Tone, class-AB

For the complete product selection please see section 3.4



Product Highlight: Power LDMOS Transistor BLP05H6700XR(G)

The BLP05H6700XRG is a 700 W extra rugged LDMOS power transistor optimized for broadcast, industrial, aerospace and defense applications in the HF to 600 MHz band.

Features

- Easy power control
- Integrated dual sided ESD protection enables class C operation and complete switch off of the transistor
- Excellent ruggedness VSWR 65 : 1
- High efficiency
- Excellent thermal stability
- Designed for broadband operation (HF to 600 MHz)
- 50 V operation for easy broadband matching
- Package available in both straight leads and gull wing form

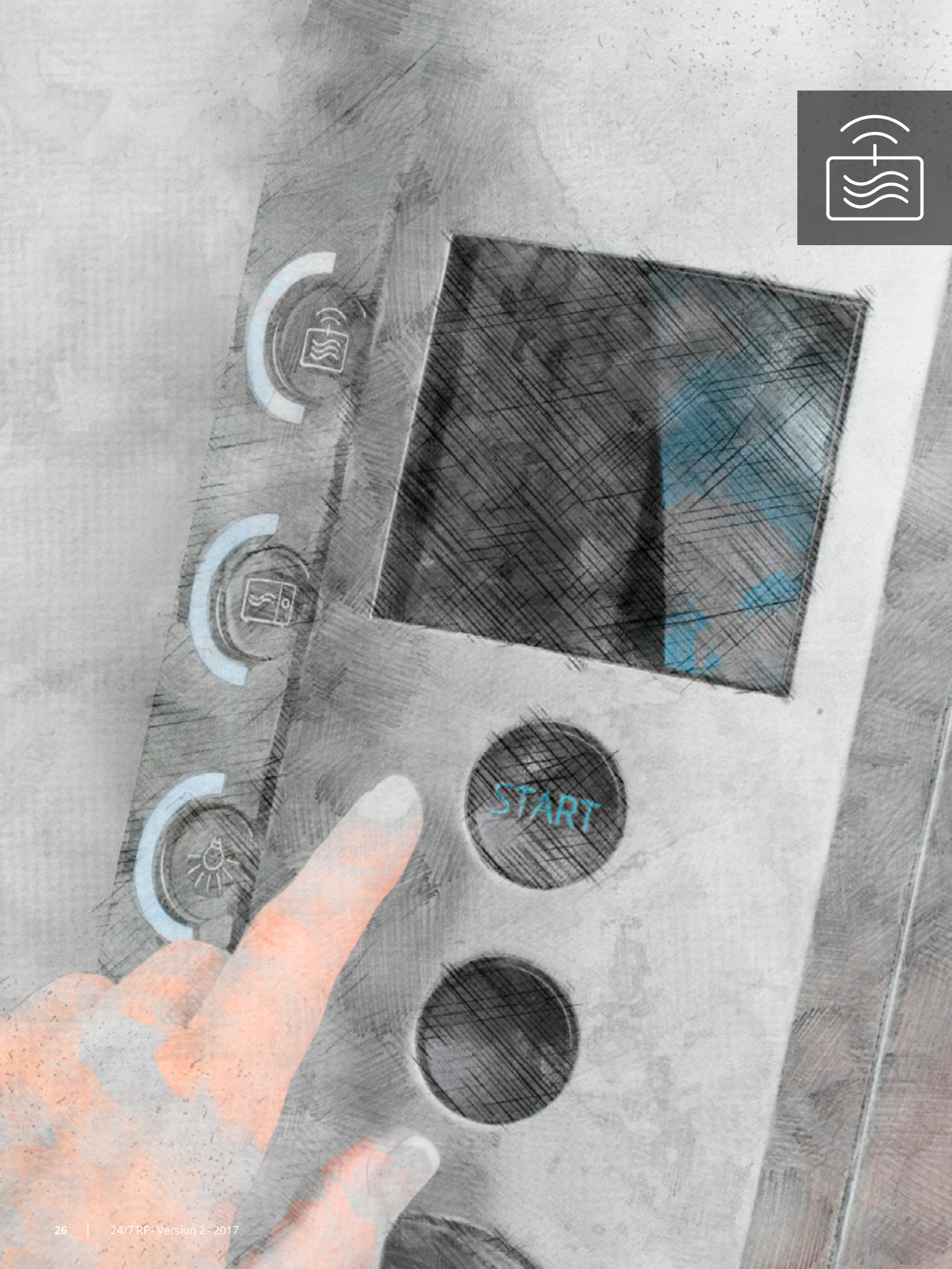


Product Highlight: Broadband LDMOS Driver Transistor BLP10H610

The BLP10H610 is a 10 W LDMOS broadband driver transistor in an OMP package that is ideal for ISM applications operating at frequencies from HF to 1400 MHz.

Features

- Easy power control
- Integrated ESD protection
- Excellent ruggedness
- High efficiency
- Excellent thermal stability
- Designed for broadband operation (HF to 1400 MHz)



Controlling Heat and Power

1.4 RF Energy

Solid state RF Energy represents a radical approach to powering many different types of applications. For cooking, heating and drying it replaces large, inflexible magnetron tubes with a small, controllable and accurate power source. For lighting, it provides a highly efficient source that is close to natural light. And in plasma ignition, it enables cleaner combustion to improve fuel economy and reduce carbon emissions. Ampleon is a founding member of the RF Energy Alliance whose members share the vision of building a fast-growing and innovative marketplace and ecosystem around the use of solid state RF Energy as a highly efficient and controllable source of heat and power.

Recommended Products for RF Energy Applications

Function	Product	Type	F_{min} (MHz)	F_{max} (MHz)	$P_{L(1dB)}$ (W)	V_{DS} (V)	η_D (%)	G_p (dB)	Test signal
RF cooking	Driver	BLF2425M9L(S)30	2400	2500	30	32	61	18.5	CW
	Final	BLC2425M8LS300P	2400	2500	300	32	58	17	CW
	Driver	BLP27M810	10	2700	10	28	19	17	Pulsed CW
	Final	BLC2425M9LS250	2400	2500	250	32	61	18	CW
RF lighting	Driver	BLP35M805	10	3500	5	28	17	18	CW pulsed, class-AB
	Final	BLC05M6XS200	425	450	200	28	82	21	CW
	Driver	BLP10H605	10	1400	5	50	59.6	22.4	CW
	Final	BLP05H6350XR	10	600	350	50	75	27.5	Pulsed CW
RF heating and drying	Driver	BLF2425M9L(S)30	2400	2500	30	32	61	18.5	CW
	Final	BLC2425M8LS300P	2400	2500	300	32	58	17	CW
	Driver	BLP27M810	10	2700	10	28	19	17	Pulsed CW
	Final	BLC2425M9LS250	2400	2500	250	32	61	18	CW
	Driver	BLP27M810	10	2700	10	28	19	17	Pulsed CW
	Driver	BLP10H605	10	1400	5	50	59.6	22.4	CW
	Final	BLF0910H6LS500	900	930	500	50	60	18	CW
	Pallet	BPC2425M9X2S250*	2400	2500	300	32	60	36	CW
	Pallet	BPC2425M9XS250*	2400	2500	300	32	61	18	CW
	Pre-driver	BLP27M810	10	2700	10	32	30	17	Pulsed CW
	Driver	BLM2425M7S60P	2300	2500	90	32	38	23	Pulsed CW
	Final	BLC2425M9LS700PV*	2400	2500	1200 ⁽¹⁾	32	50	12.5	Pulsed CW

⁽¹⁾ P3dB pulsed. $\theta \leq 10\%$

* Check status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.5

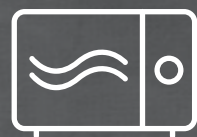
Product Highlight: Power LDMOS Transistor BLC2425M9LS250



The BLC2425M9LS250 power transistor is one of the first devices to use our ACP3 technology. Its copper flanges deliver leading R_{th} performance and thermal conductivity. A plastic air-cavity package further improves efficiency by avoiding contact with the bond wires.

Features

- Copper flange
- R_{th} performance
- Excellent ruggedness
- Plastic air-cavity



Revolutionizing Cooking

1.4.1 RF Cooking

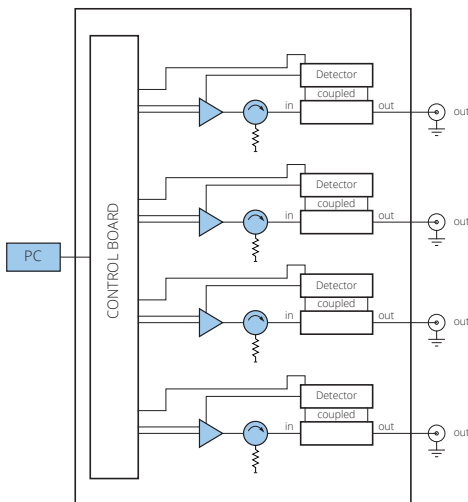
Cooking your Food to Perfection

Our solid state RF solutions will change the kitchen landscape. RF ovens perform more efficiently than conventional and microwave-based ovens. And by providing increased control and power, food can be cooked more precisely, keeping taste, texture and all the vitamins.

Replacing a single magnetron with multiple solid state RF sources brings additional possibilities for controlling the waveform inside the oven. The frequency can be changed to match the type of food being cooked and by adjusting the phase of the signals, the energy distribution can be altered to ensure every meal is cooked to perfection.

For the professional market, RF Energy solutions provide fast, reliable and accurate cooking to help fast food chains and restaurants provide a speedy and appetizing service. In the home, RF Energy solutions not only cooks food to perfection but also enable new form factors, such as tabletop ovens.

Application Diagram of a Solid State Cooking System

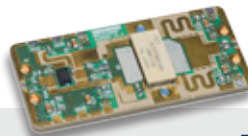


Key Features and Benefits

- Cooks homogeneously
- Less moisture lost than microwave or conventional ovens
- Accurate, controlled flexible cooking
- Able to cook different food items at the same time
- Ability to monitor cooking process
- Supports different form factor designs
- Long lifetime
- Reduced maintenance costs

Product Highlight: 2-stage 250 W / 2.5 GHz RF Energy Pallet BPC2425M9X2S250

This 250 W LDMOS Pallet is suitable for industrial applications in the 2.45 GHz frequency band. The BPC2425M9X2S250 is designed for high power CW applications.



Features

- 300 W CW saturated power.
- 60 % Efficiency and 36 dB Gain @ 2.5GHz
- Optimized for industrial applications and RF cooking
- Integrated temperature sensing
- Cu-coin technology, no need for a baseplate
- 72 x 34 mm²



Bringing Energy to Light

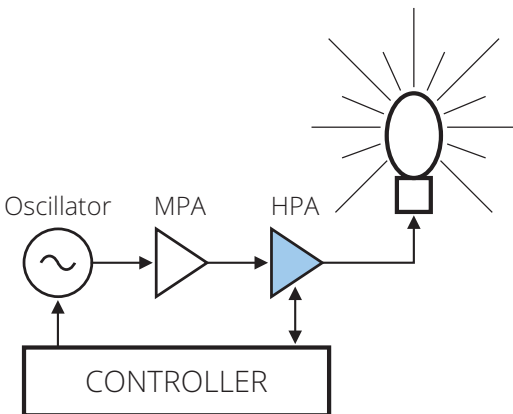
1.4.2 RF Lighting

Our understanding of RF technology has enabled us to create some of the most rugged devices in the industry, a know-how that we have instilled into our RF lighting transistors. In addition, the very high efficiency of our LDMOS transistors also allows our RF lighting solutions to deliver very high lumens/watt, beating conventional sources.

Our latest RF lighting solutions are ideal for both indoor and outdoor area lighting in architectural, entertainment, high bay and agricultural/horticultural applications. In the horticulture segment, RF lighting delivers full spectrum light which can help to increase the speed of cultivating and the quality of crops for the next generation of farmers. This also makes it ideal for retail applications to ensure items, from food to the latest fashion, look more natural under indoor lighting.

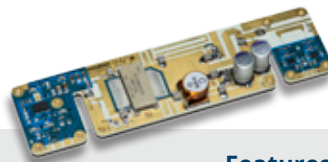
With energy savings of up to 50 % over high-pressure sodium and metal halide systems and long lamp lifetimes, RF lighting helps to reduce maintenance costs in high bay/high mast installations from car parks to warehouses.

Application Diagram of RF Light-Emitting Plasma (LEP)



Key Features and Benefits

- Full spectrum light
- Controllability
- Dimmable
- Energy saving
- Long lifetime
- Lower maintenance cost
- Smaller form factor design



Product Highlight: 2-stage 200 W / 433 MHz RF Energy Pallet BPC05M9XS200

This 200 W LDMOS Pallet is designed for high power CW applications @ 433 MHz.

Features

- 200 W CW power
- 80 % Efficiency and 21 dB Gain @ 434 MHz
- Optimized for RF cooking and defrosting
- Integrated sensing
- Extremely rugged, no need for isolators
- Cu-coin technology, no need for a baseplate
- 125 x 33 mm²

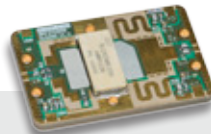
1.4.3 RF Heating and Drying

Industrial RF heating and drying is fast and flexible. It allows for a quicker and streamlined production process for many manufacturing applications. It provides uniform heating and drying, a reduction in emissions and improvements in product quality and efficiency.

We offer RF heating and drying solutions for both the 915 MHz and 2.45 GHz ISM frequency bands. Available as individual transistors or complete pallets, our solutions can be easily scaled to deliver the needed power and can assist in reducing emissions, improving efficiency and speeding up production processes. RF heating and drying can be used for a wide range of applications from food preparation to chemical processing.

Key Features and Benefits

- Faster uniform drying
- Excellent ruggedness
- Thermal stability
- Efficiency savings
- Controllability, with available feedback loop
- Heat spreads evenly across a target
- Prevents local overheating
- Improved product quality
- Unprecedented system reliability



Product Highlight: 1-stage 250 W / 2.5 GHz RF Energy Pallet BPC2425M9XS250

This 250 W LDMOS Pallet is suitable for industrial applications in the 2.45 GHz frequency band. The BPC2425M9XS250 is designed for high power CW applications.

Features

- 300 W CW saturated power.
- 61 % Efficiency and 18 dB Gain @ 2.5 GHz
- Optimized for industrial applications
- Integrated temperature sensing
- Cu-coin technology, no need for a baseplate
- 52 x 34 mm²

1.4.4 RF Ignition

A Revolution in Automotive Ignition

The automotive industry is facing increasingly tough emission challenges. New European regulations, to be introduced in 2021, will reduce fleet CO₂ emissions from today's 130 g/km to 95 g/km. While electric vehicles will play a role in meeting these new targets, they still only represent a small percentage of vehicles sold. Automotive manufacturers will also need to make their combustion engine vehicles more efficient and RF ignition offers a new and exciting concept which can improve fuel efficiency and reduce pollutants.

RF plasma ignition is an emerging technology which has been in development for more than five years. Ampleon has been working closely with partners to make this new technique a reality for efficient automotive use.

Micro plasma ignition has advantages over the traditional spark plug as it enables more complete combustion, allowing for a leaner fuel mix and thus reducing carbon emissions and the need for catalytic converters or custom exhausts.

Key Features and Benefits

- Cost-efficient
- Easy implementation
- Improved fuel efficiency
- Reduced emissions

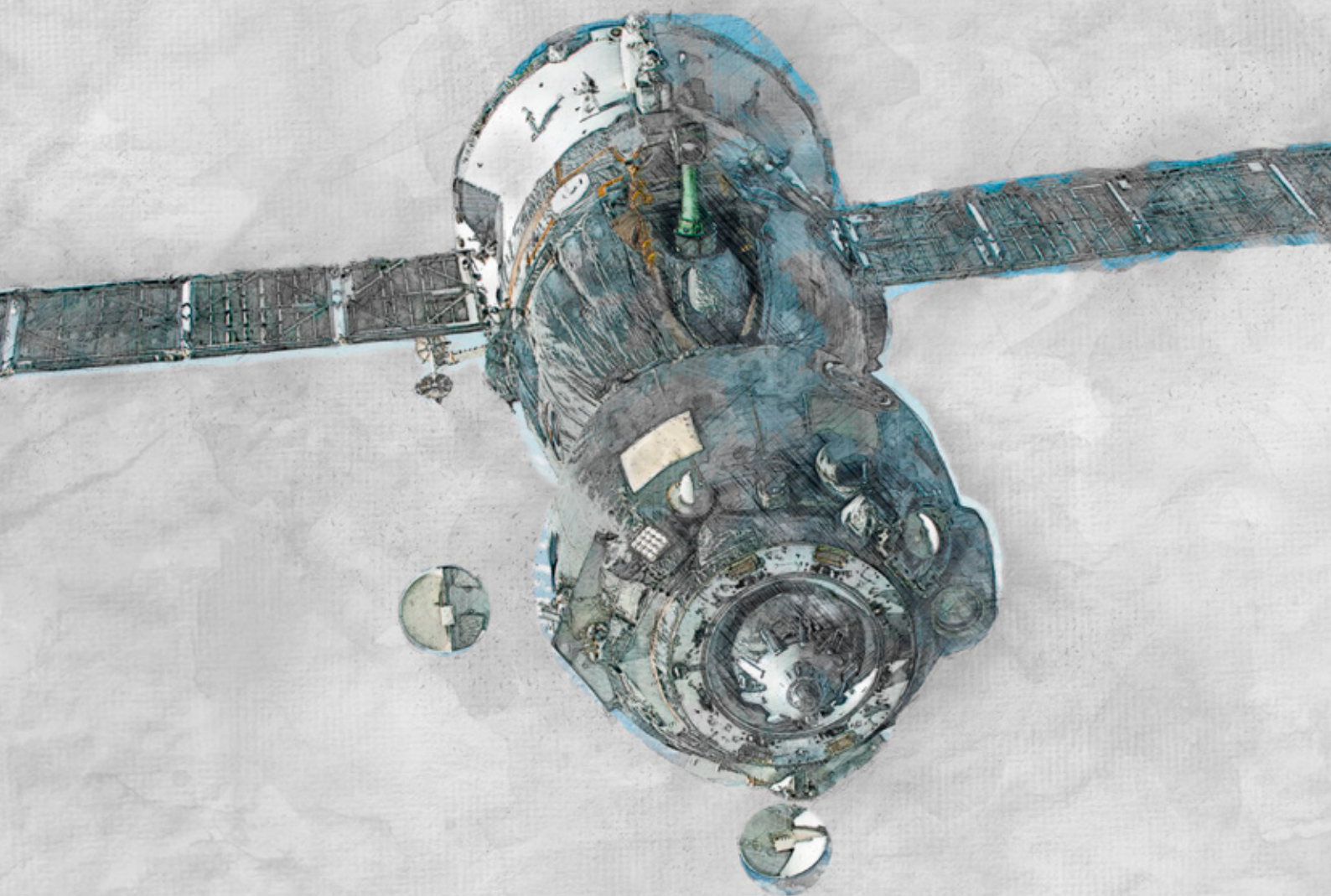


Product Highlight: Power LDMOS Transistor BLC2425M9LS700PV

This is a 1200 W LDMOS power transistor for industrial applications at 2.45 GHz, and particularly automotive plasma ignition. The BLF2425M9LS700PV is designed for high power low duty cycle pulsed applications and is assembled in a high performance ACP2 package.

Features

- Very high output power
- High efficiency
- 2400 to 2500 MHz operation
- Internal input and output matching
- Integrated rise/fall time protection



Making the World a More Predictable Place

1.5 Aerospace & Defense

SWaP + CR

Size, Weight and Power (SWaP) have long been the key requirements for aircraft systems. Systems need to be small, lightweight and yet still powerful enough for long range operation. Moreover, today's systems must also be Cost-efficient and Reliable (CR).

As a recognized global leader in base station and broadcast transmitters, Ampleon strengthens a broad portfolio for the strategic aerospace & defense market. With 50 years of experience in RF, Ampleon is an established, market leading supplier with a wealth of knowledge and expertise. We are committed to fully support customers' applications with a dedicated longevity program that guarantees our parts will continue to be available throughout the operational lifetime.

In addition to GaN solutions that deliver the highest performance, we also offer dedicated Gen9 LDMOS solutions that provide close to GaN performance at a much lower cost and with higher reliability and ruggedness. By being technology agnostic, we can help customers find the best possible solution for their application needs.

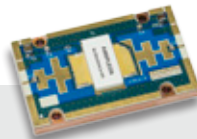
All our aerospace & defense products are ITAR-free, simplifying logistics and paperwork for designs aimed at export markets. We also provide global application support with offices in the US, Europe and Asia.

Fast Time to Market

To ensure you get your solutions to market as quick as possible, we offer discrete RF components, MMICs and complete RF pallets.

1.5.1 Radar

Commercial avionics and military radar applications include air traffic control, situational awareness, weather radar, surveillance, fire control, searching and tracking. These systems cover a wide range of operating frequencies and there is an ongoing



Product Highlight: 400 W LDMOS S-band Radar Power Module BPS9G2934X-400

This 400 W GEN9 LDMOS power module is intended for S-band radar applications in the frequency range from 2.9 GHz to 3.4 GHz.

Features

- 400 W Pulsed RF power designed for S-band (2.9 GHz to 3.4 GHz)
- Small size: 5.5 x 3.5 cm
- Low weight: 85 gr
- Excellent ruggedness, VSWR 10 : 1
- 1 x 10⁶ h MTTF
- Input/output 50 Ω matched
- High efficiency
- Excellent thermal stability (silver plated base plate)
- High flexibility with respect to pulse formats
- 100 % RF testing in production

transition within solid state power amplifier solutions and from bipolar to LDMOS and GaN. Ampleon offers a broad portfolio of dedicated LDMOS and GaN solutions that covers all these frequency bands with highly reliable solutions.

Sub-1 GHz

Sub-1 GHz radar market includes the HF, VHF UHF radar and broadband communication systems for both civilian and defense applications. Advances in solid state technologies, including LDMOS and GaN, enable SWaP (Size, weight and Power) optimization in this application.

For specific sub band in the sub-1 GHz application, the extra rugged LDMOS technology offers unrivaled performance and ruggedness at lowest cost.

Frequency Bands

- Sub-1 GHz
- Commercial Avionics (950 - 1215 MHz / 1030 - 1090 MHz)
- L-band (1 - 2 GHz)
- S-band (2 - 4 GHz)
- C-band (4 - 8 GHz)
- X-band (8 - 12 GHz)
- Ku-band (12 - 18 GHz)

1.5.2 Electronic Counter Measures (ECM)

Electronic counter measures / jammers are used in all walks of life from defense systems to cellular jammers. High power is critical for this market along with a wide frequency range and high efficiency. Ampleon's solutions ensure effective coverage across a broad bandwidth with the highest power GaN products on the market.

Application Support

To support customers in developing and bringing new ECM solutions to market quickly, we have a range of demo boards available on request.

1.5.3 Military Communications Systems (Milcom)

RF solutions for Milcom applications require the highest linearity to ensure clear, interference-free communication. Ampleon offers dedicated solutions for Milcom applications that perform up to 10 dBC (IMD3 linearity) better than competitive products. Our portfolio includes both GaN and LDMOS devices.



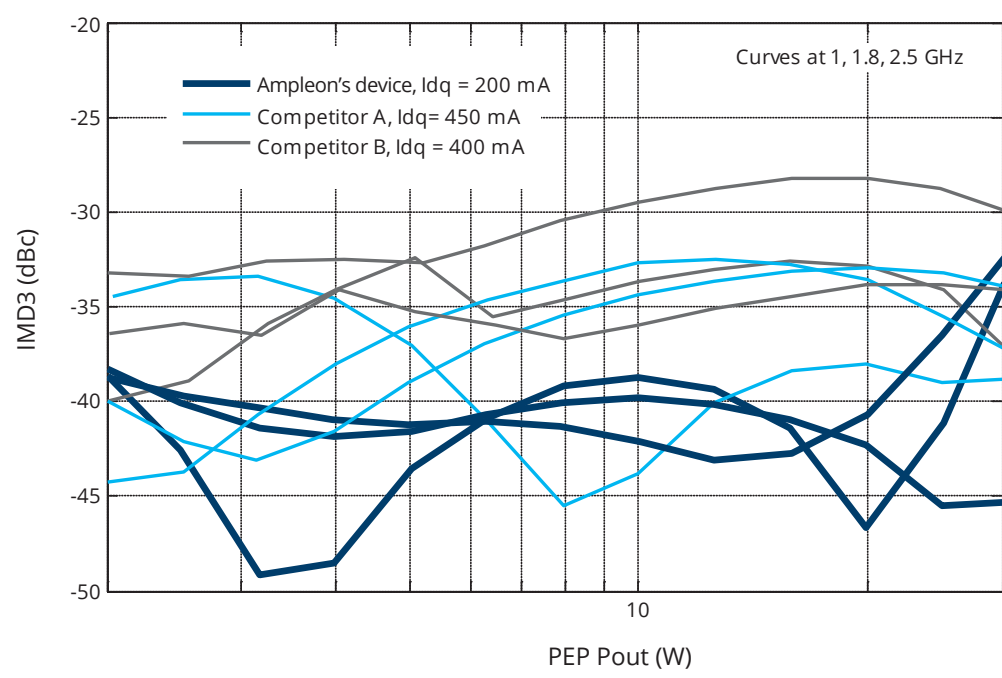
Product Highlight: Broadband RF Power GaN HEMT CLF1G0035(S)-200P

The CLF1G0035-200P and CLF1G0035S-200P are 200 W general purpose broadband GaN HEMTs usable from DC to 3.5 GHz.

Features

- Operating frequency from DC to 3.5 GHz
- 200 W general purpose broadband RF Power GaN HEMT
- Excellent ruggedness (VSWR 10 : 1)
- High voltage operation (50 V)
- Thermally enhanced package

50 W GaN Device Comparison in 1000 - 2500 MHz 50 W Demonstration Board 18502-tone Intermodulation Distortion, $\Delta f=1$ MHz, $V_d=50$ V



Recommended LDMOS Pallets for L / S-band Radar

Type	Pallet Size	Weight	F_{min} (MHz)	F_{max} (MHz)	P_{peak} (W)	V_{DS} (V)	η_D (%)	G_p (dB)	Test signal
BLL6H1214P2S-250	5 x 12 cm	80	1200	1400	250	45	48	27	Pulsed RF
BPS9G2934X-400*	3.5 x 5.5 cm	85	2900	3400	400	32	43	12.5	Pulsed RF
BPS9G2933X-450*	3.5 x 5.5 cm	85	2900	3300	450	32	45	13.5	Pulsed RF
BPS9G3135X-400*	3.5 x 5.5 cm	85	3100	3500	450	32	44	12.5	Pulsed RF

Recommended LDMOS Products for Sub-1 GHz Radar

Type	F_{min} (MHz)	F_{max} (MHz)	Freq. (MHz)	$P_{L(dB)}$ (W)	V_{DS} (V)	η_D (%)	G_p (dB)	Test signal
BLP10H610	10	1400	840 to 860	10	50	60	22	CW
BLP10H630P	10	1000	720	30	50	72	18	Pulsed RF
BLP05H635XR	10	600	127	35	50	75	27	CW
BLP10H660P	10	1000	720	60	50	72	18	Pulsed RF
BLP05H675XR	10	600	108	75	50	75	27	Pulsed RF
BLP10H6120P	10	1000	720	120	50	72	18	Pulsed RF
BLF182XR(S)	10	600	108	250	50	75	28	Pulsed RF
BLF183XR(S)	10	600	108	350	50	75	28	Pulsed RF
BLF574XR(S)	10	500	225	600	50	74.5	23.5	CW

* Check the status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.6



Product Highlight:
Power LDMOS Transistor BLP05H6700XR(G)

The BLP05H6700XRG is a 700 W extra rugged LDMOS power transistor optimized for broadcast, industrial, aerospace and defense applications in the HF to 600 MHz band.

Features

- Easy power control
- Integrated dual sided ESD protection enables class C operation and complete switch off of the transistor
- Excellent ruggedness VSWR 65 : 1
- High efficiency
- Excellent thermal stability
- Designed for broadband operation (HF to 600 MHz)
- 50 V operation for easy broadband matching
- Package available in both straight leads and gull wing form

Recommended LDMOS Products for Sub-1 GHz Radar (continued)

Type	F _{min} (MHz)	F _{max} (MHz)	Freq. (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLF184XR(G)	10	600	108	700	50	81.9	23.5	CW
BLF578	10	500	108	1000	50	75	26	CW

Recommended LDMOS Products for Avionics

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP10H610	10	1400	10	50	60	22	CW
BLL6H0514-25	500	1400	25	50	50	19	Pulsed RF
BLP10H630P	10	1000	30	50	68	18	Pulsed RF
BLP10H660P	10	1000	60	50	68	18	Pulsed RF
BLP10H6120P	10	1000	120	50	68	18	Pulsed RF
BLA6G1011(L)-200R(G)	1030	1090	200	28	65	20	Pulsed RF
BLA6G1011LS-200RG	1030	1090	200	28	65	20	Pulsed RF
BLA8G1011L(S)-300	1030	1090	300	32	56	16.5	Pulsed RF
BLA8G1011L(S)-300G	1030	1090	300	32	56	16.5	Pulsed RF
BLA6H0912-500	960	1215	500	50	50	17	Pulsed RF
BLA8H0910L(S)-500	910	930	500	50	60	18	Pulsed RF
BLA6H1011-600	1030	1090	600	48	52	17	Pulsed RF
BLF988(S)	500	1000	600	50	58	19.8	Pulsed RF
BLU6H0410L(S)-600P	400	900	600	50	58	20	Pulsed RF
BLA6H0912L(S)-1000	960	1215	1000	50	51	15.5	Pulsed RF

Recommended LDMOS Products for L-band Radar

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP10H610	10	1400	10	50	60	22	CW
BLL8H0514-25	500	1400	25	50	59	21	Pulsed RF
BLL8H0514L(S)-130	500	1400	130	50	50	17	Pulsed RF
BLL6H1214P2S-250	1200	1400	250	45	48	27	Pulsed RF
BLL6G1214L-250	1200	1400	250	36	45	15	Pulsed RF
BLL8H1214L(S)-250	1200	1400	250	50	55	17	Pulsed RF
BLL8H1214L(S)-500	1200	1400	500	50	50	17	Pulsed RF
BLL9G1214L(S)-600*	1200	1400	600	32	60	19	Pulsed RF

Recommended LDMOS Products for S-band Radar

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLS9G2735L(S)-50*	2700	3500	50	32	47	12	Pulsed RF
BLS7G2325L-105	2300	2500	105	30	55	16.5	Pulsed RF
BLS6G2731(S)-120	2700	3100	120	32	48	13.5	Pulsed RF
BLS6G3135(S)-120	3100	3500	120	32	43	11	Pulsed RF
BLS6G2731S-130	2700	3100	130	32	50	12	Pulsed RF

* Check the status in section 3.1, as this type is not yet released for mass production. For the complete product selection please see section 3.6



Product Highlight: Power LDMOS transistor BLS9G2729L(S)-350

The BLS9G2729L(S)-350 is a 350 W LDMOS power transistor for S-band applications in the frequency range from 2.7 GHz to 2.9 GHz.

Features

- High efficiency
- Excellent ruggedness
- Designed for S-band operations
- Excellent thermal stability
- Easy power control
- Integrated dual sided ESD protection enables excellent off-state isolation
- High flexibility with respect to pulse formats
- Internally matched for ease of use

Recommended LDMOS Products for S-band Radar (continued)

Type	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLS6G2933S-130	2900	3300	130	32	47	12.5	Pulsed RF
BLS7G2933S-150	2900	3300	150	32	47	13.5	Pulsed RF
BLS7G2730L(S)-200P	2700	3000	200	32	48	12	Pulsed RF
BLS7G3135LS-200	3100	3500	200	32	43	12	Pulsed RF
BLS7G2729L(S)-350P	2700	2900	350	32	50	13	Pulsed RF
BLS9G2729L(S)-350	2700	2900	350	28	50	14	Pulsed RF
BLS7G3135L(S)-350P	3100	3500	350	32	43	12	Pulsed RF
BLS8G2731L(S)-400P	2700	3100	400	32	47	13	Pulsed RF
BLS9G2731L(S)-400	2700	3100	400	32	46	13	Pulsed RF
BLS9G2934L(S)-400	2900	3400	400	32	44	11	Pulsed RF
BLS9G3135L(S)-400	3100	3500	400	32	44	11	Pulsed RF

Recommended GaN Product Portfolio for Radar

Type	F _{min} (MHz)	F _{max} (MHz)	Freq. (MHz)	P _{L(3dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
CLF1G0060(S)-10	0	6000	5300 to 5900	10	50	> 47	> 10	Pulsed
CLF1G0060(S)-30	0	6000	1500 to 4000	30	50	> 50	> 10	Pulsed
CLF1G0060(S)-10	0	6000	3100 to 3500	10	50	> 55	> 12	Pulsed
CLF1G0060(S)-30	0	6000	3100 to 3500	30	50	> 55	> 12	Pulsed
CLF1G0035(S)-50	0	3500	3100 to 3500	50	50	> 55	> 13	Pulsed
CLF1G0035(S)-100P	0	3500	3100 to 3500	100	50	> 55	> 13	Pulsed
CLF1G0035(S)-100	0	3500	3100 to 3500	100	50	> 45	> 10	Pulsed
CLF1G0035(S)-200P	0	3500	2500 to 3000	200	50	> 43	> 11	Pulsed

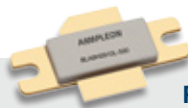
Recommended GaN Product Portfolio for Communications & ECM

Type	F _{min} (MHz)	F _{max} (MHz)	Freq. (MHz)	P _{L(3dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	IMD3 Performance	Test signal
CLF1G0060(S)-10	0	6000	200 to 3200	10	50	30 to 60	> 14	-40 dBc, PEP 5 W	Pulsed
CLF1G0060(S)-30	0	6000	500 to 3000	30	50	45 to 70	> 11	-40 dBc, PEP 15 W	Pulsed
CLF1G0035(S)-50	0	3500	200 to 2100	50	50	40 to 65	> 14	-40 dBc, PEP 10 W	Pulsed
CLF1G0035(S)-100P	0	3500	2500 to 3000	100	50	50 to 55	> 13	-40 dBc, PEP 20 W	Pulsed
CLF1G0035(S)-100	0	3500	500 to 2500	100	50	47 to 80	> 14	-40 dBc, PEP 20 W	Pulsed
CLF1G0035(S)-200P	0	3500	1700-2300	200	50	40 to 55	> 12	-40 dBc, P _{EP} 120 W	Pulsed

For the complete product selection please see sections 3.6 and 3.7

Product Highlight: Power LDMOS Transistor BLA8H0910L(S)-500

The BLA8H0910L-500 and BLA8H0910LS-500 500 W LDMOS are power transistors for avionics applications at frequencies from 900 MHz to 930 MHz. They are designed for high-power CW applications and assembled in high performance ceramic packages.



Features

- High efficiency
- Easy power control
- Excellent ruggedness
- Integrated ESD protection
- Designed for broadband operation (900 MHz to 930 MHz)
- Internally input matched



Driving Technologies for Best Performance

2. Technologies

2.1 Best-in-Class LDMOS to drive any RF Power Application

LDMOS (Laterally Diffused Metal Oxide Semiconductor) is the mainstream device technology used in high-power RF amplifiers for frequencies ranging from 10 MHz to 3.5 GHz. LDMOS offers a consistent excellent level of RF performance, including very high ruggedness and efficiency, high gain, and compatibility with Cu based package platforms. LDMOS has a lower cost (per unit area) compared to competing technologies (e.g. GaN) which, combined with a mature industrial base, makes it ideal for high-power RF amplifier products with integrated matching (e.g. multiple stages, Doherty) running in high volume production.

Ampleon's LDMOS technology platforms are designed for devices that run from supply voltages in the range of 28 to 50 V, with outstanding efficiency, power, and ruggedness. The technology draws on Ampleon's heritage of proven product and technology innovation in RF, which spans over 35 years. Ampleon's LDMOS devices deliver record performance up to 3.8 GHz and are applied extensively by wireless network operators to realize best-in-class efficiencies for wireless base stations and hence reduce operating costs. Our Gen10 32V LDMOS products were released to production in 2016 and have been optimized for LTE and with 1.5 dB higher power gain and modulated power added efficiencies in the excess of 50 % at 2.1 GHz. Our first Gen10 50V LDMOS products will be released to production in 2017 with an LTE modulated power added efficiency up to 60 % below 1 GHz.

High Power Doherty Processes and Architectures

We achieved these high efficiencies by developing optimized LDMOS devices with specific Doherty amplifier circuit designs. Our LDMOS process technology is developed to support Doherty amplifiers with the combination of high power, high efficiency, low memory effects and excellent pre-distortion capabilities. Ampleon supplies Doherty amplifier circuits both as discrete transistor products and integrated as Packaged Asymmetric Doherty (PAD) products in a single high power transistor package. These are fully RF tested at the Doherty level to guarantee performance in the customer's application circuit, demonstrate the strengths of Ampleon's LDMOS to deliver new levels of consistency in power distribution over a die, and also in production, from batch to batch and year to year.

Broadband MMICs and Drivers

Ampleon has both broadband drivers packaged in TO270 plastic packages as well as a broad portfolio of high performance MMIC amplifier products to simplify the overall amplifier line up. The MMICs are high efficiency 2-stage multiband amplifiers, covering frequency ranges 0.7 - 1 GHz, 1.8 - 2.2 GHz, 2.3 - 2.7 GHz or 3.4 - 3.8 GHz, and packaged in low cost overmolded plastic. They line-up seamlessly with the high power Doherty products or can be used as stand-alone transmit amplifiers for lower power applications, e.g. small cells. In 2017, Ampleon is releasing a portfolio of integrated Doherty MMICs where the input splitter and output combiner of the Doherty circuit are integrated into the MMIC package to enhance broadband performance and minimize overall application size, targeting high efficiency drivers and 4.5G massive-MIMO applications.

Multi-Market: Higher Power Densities and Ruggedness

For the Broadcast, ISM and Aerospace & Defense markets, Ampleon has developed a family of LDMOS process platforms to provide devices tuned to the specific needs of these applications. For example, the Gen6HV technology has been optimized for 42 to 50 V operation, and improved further as XR2, to enable devices with ruggedness on par with legacy VDMOS technology. The Gen6XR process is essential for ISM applications which suffer from severe mismatch conditions, since Gen6XR enables products that withstand a 1:65 mismatch ratio without compromising the RF performance, while still delivering output powers up to 1600 W CW. For broadcast applications, Ampleon offers a broad portfolio of 50 V LDMOS products that set new milestones in terms of power density and provide a unique high efficiency solution when combined with our patented Ultra-Wideband (UWB) Doherty technology to cover the full broadcast frequency spectrum.

Aerospace & Defense Applications

The improvements in LDMOS technology have enabled the aerospace & defense radar markets to migrate from designs using Si bipolar power transistors to LDMOS. LDMOS RF performance is superior to Si bipolar, has a simpler application and significant cost-of-ownership benefits in these markets. Gen6HV products provide highly efficient solutions for Avionics L-band radar applications. Our Gen10 LDMOS has a competitive high frequency performance at 2.7 - 3.8 GHz addressing S-band radar, supplementing a full portfolio of broadband GaN devices.

Solid State RF Energy

The promise of RF Energy is a cleaner, more efficient, and more effective power source than conventional solutions. From solid state cooking and RF sparkplugs, to RF plasma lighting and medical therapy, to industrial cooking and drying, the possibilities for RF Energy are nearly limitless. A radical approach is sometimes needed to break through existing limitations and this is exactly what RF Energy offers. Ampleon has a portfolio of tailored LDMOS amplifiers to meet the requirements of individual RF Energy applications, from solid state lighting at 433 MHz, to industrial heating at 900 MHz to consumer cooking at 2.45 GHz. Power levels up to 1200 W are supported and complemented by a full portfolio of drivers to create the full power line-up needed in any RF Energy application.

Benefits

- Competitive products to fit all applications covered by LDMOS
- Continuous technology improvements meet market needs
- Dedicated technology nodes designed around specific application requirements

Features

- Gen9 / 10 with enhanced VBW performance for 28 - 32 V base-station, aerospace & defense applications
- Gen8 / 9 dual stage multiband MMICs
- Gen6XR for 50 V ISM applications requiring extreme ruggedness
- Gen6 / 9HV for 50 V high power-density for broadcast

2.2 Best-in-Class GaN for High Frequency Performance

With more than 35 years of experience in delivering RF power transistors, Ampleon leads the industry in offering GaN RF power devices through a secure and reliable mainstream supply chain for wireless infrastructure, industrial, scientific and medical (ISM), and aerospace and defense applications.

Ampleon's next generation 50 V GaN process technology features best-in-class linearity while at the same time allowing designers to maintain power, ruggedness, and efficiency. Our GaN process is being released in 2017, offering a further increase in power density and performance at 50 V as well as a 30 V GaN node for high frequency applications. GaN technology features best-in-class linearity while at the same time allowing designers to maintain power, ruggedness, and efficiency for both 4G and 4/5G mobile broadband applications as well as several multimarket applications. This enables an uncompromised amplifier design that can minimize component count and reduce amplifier footprint. Our leading back-end assembly facility consistently leverages the high power density of GaN into smaller and more broadband circuitry. Through a broad portfolio of high performance GaN and LDMOS products, Ampleon offers an unbiased choice in enabling optimized designs for your application.

Setting New Performance Boundaries for RF Power Amplifiers

GaN products are also called High-Electron Mobility Transistors (HEMT), a name that captures one of the intrinsic benefits of GaN – the high electron drift velocity. However, these transistors are depletion-mode devices, so they are normally on and require a negative gate bias to switch them off. This biasing is not straightforward but Ampleon has proven bias circuitry to support any application. A further advantage of GaN is that it is a very strong semiconductor material, so it is capable of withstanding very high temperatures. Ampleon's GaN transistors are specified to a maximum temperature of 250 °C, compared to 225 °C for Si LDMOS. With such high temperature capability, there is a greater need to have packages capable of exploiting this feature. For this, customers benefit from Ampleon's 35-year legacy in RF power products. Simply put, GaN technology makes a step increase in efficiency and power density performance over Si LDMOS in several applications (see figure below).

High Efficiency Doherty Architectures

Ampleon's GaN process technology has been developed to support Doherty amplifiers with the combination of high power, high efficiencies, low memory effects, and low pre-distortion due to trapping effects. To create high efficiency Doherty circuits, we developed optimized GaN devices with specific impedance matching in the amplifier circuit to boost the performance. As with our LDMOS solutions, Ampleon supplies Doherty amplifier circuits both as discrete transistor products and integrated as packaged asymmetric Doherty (PAD) products and we are also releasing low power 30 V MMICs for higher frequency applications.

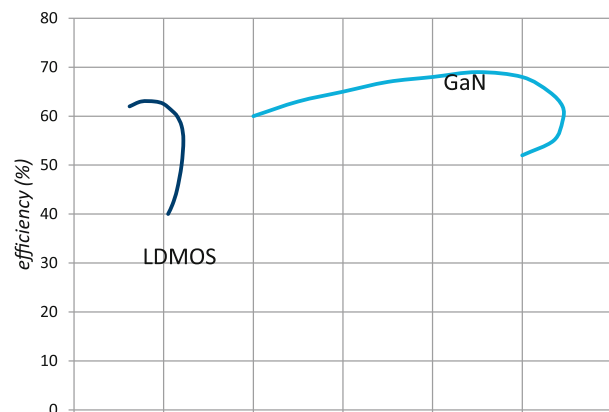
Key Features and Benefits

- High frequencies and bandwidth up to 6 GHz for 50 V GaN and 12 GHz for 30 V GaN
- High efficiency and excellent linearity
- High power density
- Operation at higher temperatures, without loss of reliability (250 °C compared to 225 °C for Si LDMOS)
- Excellent ruggedness

Applications

- Commercial wireless infrastructure (base stations)
- Radar systems and jammers
- Broadband and narrowband general-purpose amplifiers
- Public mobile radios
- ISM applications: test instrumentation and EMC testing

GaN vs LDMOS Comparison @ 2.1 GHz



2.3 RF Power Transistor Packages

Packaging is an important element in RF power transistors, influencing both the cost-efficiency and performance of a given device. Since peak powers can vary widely, from as low as 5 W to more than 1000 W, a range of package technologies are needed to cover every application. The choice of package format (air-cavity or overmolded plastic), often depends on the design requirements, and any trade-offs to be made between performance and cost.

Air-Cavity Packages

The traditional package for RF power transistors is the air-cavity package with a ceramic lid. The flange (or heatsink) material has evolved over the years and the most commonly used material today is CPC (Cu/Mo70Cu/Cu), a laminate of Copper and Copper Molybdenum. This material has been selected for its thermal properties, providing a low R_{th} (compared to the Cu-W used earlier) as well as a good CTE (Thermal Expansion Coefficient) match with the silicon or GaN used for the active dies and the internal matching capacitors. The package is made of three parts: flange, ringframe and lid. Active and passive dies are then soldered to the flange and wire bonds are used to create the matching circuits and the connections with the leads. The transistor is then closed by gluing the lid on top. The final step consists of testing the product for compliance to specification.

Air-Cavity Ceramic (ACC) Packages

In a ceramic air cavity package, the flange is brazed to the ceramic ringframe at high temperatures. The resulting component is known as a header. Air-cavity ceramic packages have proven their reliability and performance over the years and exist in a variety of sizes and power levels. Due to the semi-hermetic nature of the ceramic air cavity packages, they are typically found in Aerospace and Defense products as well as products requiring high reliability and high frequencies.



SOT1228A



SOT1239B



SOT1121B



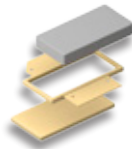
SOT539A

Different ceramic packages. For a complete overview, see section 6.1

* Not drawn to scale.



ACC Package Structure



The Three Components of an ACP Transistor:
CPC flange, Polymer Ringframe, Polymer Lid

Difference in structure between a ceramic air cavity package and a plastic air cavity package

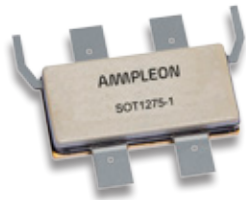
Air-Cavity Plastic (ACP) Packages

The structure of the Air Cavity Package (ACP2) is similar to ACC but the lid and the ringframe are made of an engineered plastic instead of ceramic. The ringframe is glued to the flange rather than brazed, and reduces the stress and distortions of the flange. This in turn allows the use of thinner matching capacitors, reducing RF losses both at the gate and the drain. The result is higher gain and efficiency compared to the ACC format. In addition, the use of separate ringframes allows for more variation in lead shape and length with shorter development times.

The newest generation ACP3 packages have a further key enhancement by replacing the traditional CPC flange with a Cu flange which gives a 30 % improvement in thermal performance as well as simplifying the board level assembly to provide a highly effective cost-efficient RF package solution. The matched CTE between the Cu flange and the copper on the

application board also improves reliability.

The ACP packages are widely used in modern basestations and RF Energy applications for their good performance and very good price / performance ratio.



SOT1275-1



SOT1278-1

* Not drawn to scale

For the complete ACP package overview please see section 6.1

Overmolded Plastic (OMP) Packages

A third transistor package family is overmolded plastic (OMP). The package structure is similar to standard plastic power packages, with a copper flange and a molded body, but discrete wire bonds are used in the matching network for improved RF performance.

OMP packages have a number of outlines, from the standard HVSON (DFN) package for low power drivers, to our PQFN package for higher power drivers, and the SOT502 format of packages for dual path MMICs, and discretes. OMP is an ideal package for low frequency or low power applications. The usage of industry standard manufacturing equipment makes this also a very cost effective package.



PQFN



MMIC



Driver



Discrete Final

For the complete OMP package overview please see section 6.1

The wide range of packages offered by Ampleon enables you to select the right device precisely optimized for your application and allows to find the best compromise between cost and performance.



Embracing Uncounted Applications

3. RF Product Portfolio

Ampleon Product Catalog
www.ampleon.com/products

3.1 New Products

DEV = in Development
 RFS = Released for Supply

Type	Application / description	Expected status per May 2017	Planned release
NEW: RF Power Transistor for Base Station Applications			
BLC10G18XS-320AVT	320 W LDMOS power transistor for base station applications	DEV	Q3-2017
BLC10G20LS-240PWT	240 W LDMOS power transistor with enhanced video bandwidth for base station applications	RFS	Released
BLC10G22LS-240PVT	240 W LDMOS power transistor with enhanced video bandwidth for base station applications	RFS	Released
BLC8G09XS-400AVT	400 W LDMOS packaged asymmetric Doherty power transistor for base station applications	RFS	Released
BLC9G15XS-400AVT	400 W LDMOS packaged asymmetric Doherty power transistor for base station applications	RFS	Released
BLC9G20LS-160PV	160 W LDMOS power transistor with enhanced video bandwidth for base station applications	RFS	Released
BLC9G20XS-160AV	160 W LDMOS packaged asymmetrical Doherty power transistor for base station applications	RFS	Released
BLC9G20XS-400AVT	400 W LDMOS packaged asymmetric Doherty power transistor for base station applications	RFS	Released
BLC9G20XS-550AVT	550 W LDMOS packaged asymmetric Doherty power transistor for base station applications	RFS	Released
BLC9G21LS-60AV	20 W plastic LDMOS transistor for base station applications	DEV	Q3-2017
BLC9G22LS-160VT	160 W LDMOS power transistor for base station applications	RFS	Released
BLC9G22XS-400AVT	400 W LDMOS packaged asymmetric Doherty power transistor for base station applications	RFS	Released
BLC9G24XS-170AV	170 W LDMOS packaged asymmetrical Doherty power transistor for base station applications	RFS	Released
BLC9G27XS-380AVT	380 W LDMOS power transistor for base station applications	DEV	Q3-2017
BLC9H10XS-300P	300 W HV LDMOS power transistor for base station applications	DEV	Q4-2017
BLC9H10XS-350A	350 W HV LDMOS power transistor for base station applications	DEV	Q4-2017
BLC9H10XS-400A	400 W HV LDMOS power transistor for base station applications	DEV	Q4-2017
BLC9H10XS-400P	400 W HV LDMOS power transistor for base station applications	DEV	Q4-2017
BLC9H10XS-600A	600 W HV LDMOS power transistor for base station applications	DEV	Q4-2017
BLC9H10XS-60P	60 W HV LDMOS power transistor for base station applications	DEV	Q4-2017
BLC9H10XS-800P	800 W HV LDMOS power transistor for base station applications	DEV	Q4-2017
BLF9G38-10G	10 W LDMOS power transistor for base station applications	DEV	Q3-2017
BLM8D1822-25B	25 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	Q3-2017
BLM8G1822-20B	20 W LDMOS 2-stage MMIC solution for base station applications	DEV	Q4-2017
BLM9D1822-12B	12 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	tbd
BLM9D1822-25B	25 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	tbd

Type	Application / description	Expected status per May 2017	Planned release
BLM9D1822S-25PB	25 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	tbd
BLM9D1822S-25PBG	25 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	tbd
BLM9D1822S-50PB	50 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	tbd
BLM9D1822S-50PBG	50 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	tbd
BLM9D18-25AB	25 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	Q4-2017
BLM9D232S-20AB	20 W LDMOS 2-stage MMIC solution for base station applications	DEV	tbd
BLM9D2327-12B	12 W LDMOS 2-stage MMIC solution for base station applications	DEV	tbd
BLM9D2327-25B	20 W LDMOS 2-stage fully integrated Doherty MMIC solution	DEV	tbd
BLM9D2527-20AB	20 W LDMOS 2-stage fully integrated Doherty MMIC for massive MIMO or small cell applications	RFS	Released
BLM9G232S-20AB	20 W LDMOS 2-stage MMIC solution for base station applications	DEV	tbd
BLM9G2527-20AB	20 W LDMOS 2-stage fully integrated Doherty MMIC solution for base station applications	DEV	Released
BLP9G0722-20	20 W plastic LDMOS power transistor for base station applications	DEV	Released
BLP9G0722-20G	20 W plastic LDMOS power transistor for base station applications	DEV	Released
BLP9H10S-30	30 W HV LDMOS power transistor for base station applications	DEV	Q1-2018
NEW: RF Power LDMOS Transistors for FM/UHF/VHF/ISM and RF Energy Applications			
BLC10M6XS200	200 W LDMOS power transistor for RF lighting applications	RFS	Released
BLC2425M8LS300P	300 W LDMOS power transistor for Industrial, Scientific and Medical (ISM) applications	RFS	Released
BLC2425M9LS250	250 W LDMOS power transistor for Industrial, Scientific and Medical (ISM) applications	RFS	Released
BLF0910H6L500	500 W LDMOS power transistor for industrial applications	RFS	Released
BLF0910H6LS500	500 W LDMOS power transistor for industrial applications	RFS	Released
BLF189XRA	1700 W extremely rugged LDMOS power transistor for broadcast and industrial applications	DEV	Q3-2017
BLF189XRA S	1700 W extremely rugged LDMOS power transistor for broadcast and industrial applications	DEV	Q3-2017
BLF189XRB	1900 W extremely rugged LDMOS power transistor for industrial applications	DEV	Q3-2017
BLF189XRBS	1900 W extremely rugged LDMOS power transistor for industrial applications	DEV	Q3-2017
BLF2425M9LS140	140 W LDMOS power transistor for Industrial, Scientific and Medical (ISM) applications	RFS	Released
BLF888E	750 W LDMOS RF power transistor for broadcast Doherty transmitter applications	RFS	Released
BLF888ES	750 W LDMOS RF power transistor for broadcast Doherty transmitter applications	RFS	Released
BLF898	900 W LDMOS RF power transistor for broadcast Doherty and class AB transmitter applications	DEV	Q3-2017
BLF898S	900 W LDMOS RF power transistor for broadcast Doherty and class AB transmitter applications	DEV	Q3-2017
BLP05H6700XR	700 W extra rugged LDMOS power transistor optimized for broadcast, industrial, A&D applications	RFS	Released
BLP05H6700XRG	700 W extra rugged LDMOS power transistor optimized for broadcast, industrial, A&D applications	RFS	Released
BLP10H6120P	120 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLP10H6120PG	120 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLP10H630P	30 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLP10H630PG	30 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLP10H660P	60 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLP10H660PG	60 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLP10H690P	90 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLP10H690PG	90 W LDMOS power transistor for broadcast and industrial applications	RFS	Released
BLC2425M9LS700P	1200 W LDMOS power transistor for industrial applications	DEV	Q4-2017
BLC2425M9LS700PV	1200 W LDMOS power transistor for industrial applications	DEV	Q4-2017
New: LDMOS Pallets for RF Energy Applications			
BPC2425M9X2S250	2-stage 250 W / 2.5 GHz RF Energy Pallet	DEV	Q4-2017
BPC2425M9XS250	1-stage 250 W / 2.5 GHz RF Energy Pallet	DEV	Q4-2017
BPC05M9XS200	2-stage 200 W / 433 MHz RF Energy Pallet	DEV	Q2-2017
New: RF Power LDMOS Transistors for Avionics Applications			
BLA9G1011L-300	300 W LDMOS power transistor for avionics applications	DEV	Q2-2017
BLA9G1011LS-300	300 W LDMOS power transistor for avionics applications	DEV	Q2-2017
BLA9G1011L-300G	300 W LDMOS power transistor for avionics applications	DEV	Q2-2017
BLA9G1011LS-300G	300 W LDMOS power transistor for avionics applications	DEV	Q2-2017
New: RF Power LDMOS Transistors for L-band Applications			
BLL9G1214L-600	600 W LDMOS power transistor for L-band radar applications	DEV	tbd
BLL9G1214LS-600	600 W LDMOS power transistor for L-band radar applications	DEV	tbd
New: RF Power LDMOS Transistors for S-band Applications			
BLS9G2729L-350	350 W LDMOS power transistor for S-band applications	RFS	Released
BLS9G2729LS-350	350 W LDMOS power transistor for S-band applications	RFS	Released
BLS9G2731L-400	400 W LDMOS power transistor for S-band applications	RFS	Released
BLS9G2731LS-400	400 W LDMOS power transistor for S-band applications	RFS	Released

Type	Application / description	Expected status per May 2017	Planned release
BLS9G2735L-50	Single ended 50 W LDMOS power transistor for S-band radar applications	DEV	Q2-2017
BLS9G2735LS-50	Single ended 50 W LDMOS power transistor for S-band radar applications	DEV	Q2-2017
BLS9G2934L-400	400 W LDMOS power transistor for S-band radar applications	RFS	Released
BLS9G2934LS-400	400 W LDMOS power transistor for S-band radar applications	RFS	Released
BLS9G3135L-400	400 W LDMOS power transistor for S-band radar applications	RFS	Released
BLS9G3135LS-400	400 W LDMOS power transistor for S-band radar applications	RFS	Released
New: LDMOS Pallets for L / S-band Radar Applications			
BPS9G2934X-400	400 W S-band Pallet for L / S-band applications	DEV	Q2-2017
BPS9G2933X-450	450 W S-band Pallet for L / S-band applications	DEV	Q2-2017
BPS9G3135X-400	400 W S-band Pallet for L / S-band applications	DEV	Q2-2017

3.2 RF Power Transistors for Mobile Broadband

RF power transistor selection guide on www.ampleon.com/products/mobile-broadband
Easy-to-use parametric filters help you choose the right RF power transistor for your design

Device Naming Conventions for Mobile Broadband (applicable to Gen7 onwards)

B	L	C	10	G	F	LS	P _{1dB}	A	B	G	V	T	<i>Italic = Optional</i>
													<i>T = video decoupling capacitor inside</i>
													<i>V = V-leads for external decoupling</i>
													<i>W = Supply thru decoupling leads</i>
													<i>Gullwing-shaped leads</i>
													<i>Current sense lead</i>
													<i>A = Asymmetric doherty (PAD); asymmetric integrated Doherty</i>
													<i>P = Symmetric doherty - push-pull configuration</i>
													<i>P_{1dB} power level @ supply voltage of Datasheet; PAD = P_{3dB}</i>
													None: PQFN
													LS: ACC / ACP2 Low R _{th} (CPC flange)
													S: OMP / TO270
													XS: ACP3 Extremely low R _{th} (CU flange)
													Frequency, example 22 = 2200 MHz, 1822 = 1800 to 2200 MHz
													G: 28-32 V supply voltage
													D: Integrated Doherty (28 V)
													H: 50 V supply voltage
													U: 12 V supply voltage
													Technology generation
													F: Ceramic package
													C: Air-cavity plastic (ACP) package
													M: MMIC
													P: Overmolded plastic (OMP) package
													L: High-frequency power transistor
													B: Semiconductor die made of Si
													C: Semiconductor die made of GaN

3.2.1 0.4 - 1.0 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLM8G0710S-15PB	SOT1211-2	700	1000	15 ⁽¹⁾	28	27	36	1.5	1-c W-CDMA
BLM8G0710S-15PBG	SOT1212-2	700	1000	15 ⁽¹⁾	28	27	36	1.5	1-c W-CDMA
BLM8G0710S-30PB	SOT1211-2	700	1000	30 ⁽¹⁾	28	24	35.7	3	1-c W-CDMA
BLM8G0710S-30PBG	SOT1212-2	700	1000	30 ⁽¹⁾	28	24	35.7	3	1-c W-CDMA
BLP9H10S-30*	SOT1482	700	1000	30	50	tbd	tbd	tbd	tbd
BLM8G0710S-45AB	SOT1211-2	700	1000	45 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLM8G0710S-45ABG	SOT1212-2	700	1000	45 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLP8G10S-45P	SOT1223-2	700	1000	45	28	19.8	20.8	2.5	2-c W-CDMA
BLP8G10S-45PG	SOT1224-2	700	1000	45	28	19.8	20.8	2.5	2-c W-CDMA
BLM8G0710S-60PB	SOT1211-2	700	1000	60 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLM8G0710S-60PBG	SOT1212-2	700	1000	60 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLC9H10XS-60P*	SOT1273-7	700	1000	60 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLF8G10L-160	SOT502A	920	960	160	30	29	19.7	35	2-c W-CDMA

⁽¹⁾P3dB

* Check status in section 3.1, as this type is not yet released for mass production

3.2.1 0.4 - 1.0 GHz LDMOS Transistors (continued)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLF8G10LS-160	SOT502B	920	960	160	30	29	19.7	35	2-c W-CDMA
BLF8G10LS-160V	SOT1244B	925	960	160	30	30	19.9	35	2-c W-CDMA
BLP8G05S-200	SOT1138-2	400	500	200	28	77	21	210	CW
BLP8G05S-200G	SOT1204-2	400	500	200	28	77	21	210	CW
BLF7G10LS-250	SOT502B	920	960	250	30	30.5	19.5	60	2-c W-CDMA
BLF8G09LS-270W	SOT1244B	716	960	270	28	33	20	67	2-c W-CDMA
BLF8G09LS-270GW	SOT1244C	716	960	270	28	33	20	67	2-c W-CDMA
BLF8G10LS-270GV	SOT1244C	790	960	270	28	31	19.5	67	2-c W-CDMA
BLF8G10LS-270	SOT502B	820	960	270	28	33	18.5	67	2-c W-CDMA
BLF8G10LS-270V	SOT1244B	790	960	270	28	31	19.5	67	2-c W-CDMA
BLP8G10S-270PW	SOT1221-2	700	900	270	28	46	17.3	56	1-c W-CDMA
BLF8G10LS-300P	SOT539B	700	1000	300	28	32	20.5	65	2-c W-CDMA
BLC9H10XS-300P*	SOT1273-7	700	1000	300 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-350A*	SOT1273-7	600	1000	350 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-400A*	SOT1273-7	700	1000	400 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC8G09XS-400AVT	SOT1258-7	859	960	400 ⁽¹⁾	32	47.5	17.4	93	1-c W-CDMA
BLF8G09LS-400PW	SOT1242B	716	960	400	28	30	20.6	95	2-c W-CDMA
BLF8G09LS-400PGW	SOT1242C	716	960	400	28	30	20.6	95	2-c W-CDMA
BLC9H10XS-400P*	SOT1273-7	700	1000	400 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-600A*	SOT1250-1	700	1000	600 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-800P*	SOT1252-7	700	1000	800 ⁽¹⁾	50	tbd	tbd	tbd	tbd

3.2.2 1.3 - 1.7 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLC9G15LS-400AVT	SOT1258-3	1452	1511	400 ⁽¹⁾	32 ⁽¹⁾	51	16.2	93	1-c W-CDMA
BLC9G15XS-400AVT	SOT1258-7	1452	1511	400 ⁽¹⁾	32 ⁽¹⁾	48	16.5	93	1-c W-CDMA

3.2.3 1.8 - 2.0 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLP9G0722-20	SOT1482-1	400	2700	20	28	21	19	35	1-c W-CDMA
BLP9G0722-20G	SOT1483-1	400	2700	20	28	21	19	35	1-c W-CDMA
BLM8G1822S-20B*	SOT1462-3	1800	2200	20 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM7G1822S-20PB	SOT1211-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM7G1822S-20PBG	SOT1212-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM8D1822S-25B*	SOT1462-1	1800	2200	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM7G1822S-40AB	SOT1211-2	1805	2170	40 ⁽¹⁾	28	25.5	31.3	2	1-c W-CDMA
BLM7G1822S-40PB	SOT1211-1	1805	2170	40 ⁽¹⁾	28	25	31.5	4	1-c W-CDMA
BLM7G1822S-40PBG	SOT1212-1	1805	2170	40 ⁽¹⁾	28	25	31	4	1-c W-CDMA
BLM8D1822S-50PB	SOT1211-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA
BLM8D1822S-50PBG	SOT1212-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA
BLC9G21LS-60AV*	SOT1275-3	1800	2025	60 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM7G1822S-80AB	SOT1211-1	1805	2170	80 ⁽¹⁾	28	24	28.3	8	1-c W-CDMA
BLM7G1822S-80ABG	SOT1212-1	1805	2170	80 ⁽¹⁾	28	24	28.3	8	1-c W-CDMA
BLM7G1822S-80PB	SOT1211-2	1805	2170	80 ⁽¹⁾	28	24	28	8	1-c W-CDMA
BLM7G1822S-80PBG	SOT1212-2	1805	2170	80 ⁽¹⁾	28	24	28	8	1-c W-CDMA
BLC9G20LS-120V	SOT1275-3	1805	1995	120 ⁽¹⁾	28	31	19.2	30	2-c W-CDMA
BLF8G20LS-160V	SOT1239B	1800	2000	160	28	34	20	35.5	2-c W-CDMA

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production

3.2.3 1.8 - 2.0 GHz LDMOS Transistors (continued)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLC9G20XS-160AV	SOT1275-3	1805	1880	160 ⁽¹⁾	30	47	16.6	28	1-c W-CDMA
BLC9G20LS-160PV	SOT1275-1	1805	2000	160 ⁽¹⁾	28	34.5	19.8	38	1-c W-CDMA
BLC8G21LS-160AV	SOT1275-1	1805	2025	160 ⁽¹⁾	28	45	15	22.5	1-c W-CDMA
BLF9G20LS-160V	SOT1120B	1800	2000	160	28	33.5	19.8	35.5	2-c W-CDMA
BLF8G19LS-170BV	SOT1120B	1800	1990	170	32	32	18	60	2-c W-CDMA
BLF7G20LS-200	SOT502B	1805	1990	200	28	33	18	55	2-c W-CDMA
BLF8G20LS-220	SOT502B	1800	2000	220	28	34	18.9	55	2-c W-CDMA
BLF8G20LS-230V	SOT1239B	1800	2000	230	28	31.7	18	55	2-c W-CDMA
BLC9G20LS-240PV	SOT1275-3	1805	1995	240 ⁽¹⁾	28	30	18	60	2-c W-CDMA
BLC10G20LS-240PWT	SOT1275-3	1805	1995	240 ⁽¹⁾	28	30	19.3	60	2-c W-CDMA
BLF7G20LS-250P	SOT539B	1805	1880	250	28	35	18	70	2-c W-CDMA
BLC8G20LS-310AV	SOT1258-3	1900	2000	310 ⁽¹⁾	28	42.5	16.9	56	1-c W-CDMA
BLC10G18XS-320AVT*	SOT1258-7	1800	1900	320 ⁽¹⁾	32	tbd	tbd	tbd	tbd
BLC9G20LS-361AVT	SOT1258-3	1805	1990	360 ⁽¹⁾	28	47.5	15.7	56.2	1-c W-CDMA
BLC8G20LS-400AV	SOT1258-3	1800	2000	400 ⁽¹⁾	32	44	15.5	85	1-c W-CDMA
BLF8G20LS-400PV	SOT1242B	1805	1995	400	28	28	19	95	2-c W-CDMA
BLF8G20LS-400GV	SOT1242C	1805	1995	400	28	28	19	95	2-c W-CDMA
BLC9G20XS-400AVT	SOT1258-7	1805	1880	400 ⁽¹⁾	32	45	16.2	87	1-c W-CDMA
BLC9G20LS-470AVT	SOT1258-3	1805	1990	470 ⁽¹⁾	28	47.5	15.7	80	1-c W-CDMA
BLC9G20XS-550AVT	SOT1258-7	1805	1880	550 ⁽¹⁾	28	44.5	15.4	85	1-c W-CDMA

3.2.4 2.0 - 2.2 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLM7G1822S-20PB	SOT1211-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM7G1822S-20PBG	SOT1212-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40 ⁽¹⁾	28	25.5	31.3	4	1-c W-CDMA
BLM7G1822S-40PB	SOT1211-1	1805	2170	40 ⁽¹⁾	28	25	31.5	4	1-c W-CDMA
BLM7G1822S-40AB	SOT1211-2	1805	2170	40 ⁽¹⁾	28	25.5	31.3	4	1-c W-CDMA
BLM7G1822S-40PBG	SOT1212-1	1805	2170	40 ⁽¹⁾	28	25	31	4	1-c W-CDMA
BLM7G1822S-80ABG	SOT1212-1	1805	2170	80 ⁽¹⁾	28	24	28.3	8	1-c W-CDMA
BLM7G1822S-80PBG	SOT1212-2	1805	2170	80 ⁽¹⁾	28	24	28	8	1-c W-CDMA
BLM7G1822S-80AB	SOT1211-1	1805	2170	80 ⁽¹⁾	28	24	28.3	8	1-c W-CDMA
BLM7G1822S-80PB	SOT1211-2	1805	2170	80 ⁽¹⁾	28	24	28	8	1-c W-CDMA
BLF8G22LS-140	SOT502B	2000	2200	140	28	32.5	18.5	33	2-c W-CDMA
BLP8G21S-160PV	SOT1221-2	1880	2025	160	28	31	17.5	20	2-c W-CDMA
BLC8G21LS-160AV	SOT1275-1	1805	2025	160 ⁽¹⁾	28	45	15	22.5	1-c W-CDMA
BLC9G22LS-160VT	SOT1271-3	2110	2170	160 ⁽¹⁾	28	33	18.4	35	2-c W-CDMA
BLF7G22LS-200	SOT502B	2110	2170	200	28	31	18.5	55	2-c W-CDMA
BLF8G22LS-200V	SOT1244B	2110	2170	200	28	29	19	55	2-c W-CDMA
BLF8G22LS-200GV	SOT1244C	2110	2170	200	28	29	19	55	2-c W-CDMA
BLF8G22LS-205V	SOT1239B	2100	2200	205	28	32.5	18.3	50.1	1-c W-CDMA
BLF8G22LS-220	SOT502B	2110	2170	220	28	33	17	55	2-c W-CDMA
BLF8G22LS-240	SOT502B	2110	2170	240	28	28.5	19	55	2-c W-CDMA
BLC10G22LS-240PVT	SOT1275-3	2110	2220	240 ⁽¹⁾	28	30	19.7	60	2-c W-CDMA
BLF7G22LS-250P	SOT539B	2110	2170	250	28	31	18.5	70	2-c W-CDMA
BLF8G22LS-270	SOT502B	2110	2170	270	28	30	17.7	80	2-c W-CDMA
BLF8G22LS-270GV	SOT1244C	2110	2170	270	28	29	17.3	80	2-c W-CDMA
BLF8G22LS-270V	SOT1244B	2110	2170	270	28	29	17.3	80	2-c W-CDMA
BLC9G22XS-400AVT	SOT1258-7	2110	2200	400 ⁽¹⁾	32	45	15.3	93	1-c W-CDMA
BLC8G22LS-450AV	SOT1258-3	2110	2170	450 ⁽¹⁾	28	41	14	85	1-c W-CDMA

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production

3.2.5 2.3 - 2.4 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLM9D2325-20AB*	SOT1462-1	2300	2500	20 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D2327-25B*	SOT1462-1	2300	2700	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLF6G27LS-40P	SOT1121B	2500	2700	40	28	37	17.5	20	1-c W-CDMA
BLF6G27LS-40PG	SOT1121E	2500	2700	40	28	37	17.5	20	1-c W-CDMA
BLC8G27LS-60AV	SOT1275-3	2300	2690	60 ⁽¹⁾	28	44	15	7	1-c W-CDMA
BLF8G24LS-100V	SOT1244B	2300	2400	100	28	32	19	25	2-c W-CDMA
BLF8G24LS-100GV	SOT1244C	2300	2400	100	28	32	19	25	2-c W-CDMA
BLF7G24LS-100	SOT502B	2300	2400	100	28	27	18	20	NCDMA/IS95
BLF7G24LS-140	SOT502B	2300	2400	140	28	26.5	18.5	30	NCDMA/IS95
BLF8G24LS-150V	SOT1244B	2300	2400	150	28	33	19	45	2-c W-CDMA
BLF8G24LS-150GV	SOT1244C	2300	2400	150	28	33	19	45	2-c W-CDMA
BLC9G24XS-170AV	SOT1275-3	2300	2400	170 ⁽¹⁾	30	47	15.5	28	1-c W-CDMA
BLC8G24LS-241AV	SOT1252-1	2300	2400	240 ⁽¹⁾	28	43	14.5	56	1-c W-CDMA

3.2.6 2.5 - 2.7 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLM9D2527-20AB	SOT1462-1	2500	2700	20 ⁽¹⁾	28	43	28	3	1-c W-CDMA
BLM9D2327-25B*	SOT1462-1	2300	2700	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLC8G27LS-60AV	SOT1275-3	2300	2690	60 ⁽¹⁾	28	44	15	7	1-c W-CDMA
BLF7G27LS-100	SOT502B	2500	2700	100	28	28	18	20	NCDMA/IS95
BLF8G27LS-100GV	SOT1244C	2500	2700	100	28	28	17	25	2-c W-CDMA
BLF8G27LS-100	SOT502B	2500	2700	100	28	28	17	25	2-c W-CDMA
BLF8G27LS-100V	SOT1244B	2500	2700	100	28	28	17	25	2-c W-CDMA
BLC8G27LS-100AV	SOT1275-1	2496	2690	100 ⁽¹⁾	28	44	15.5	17.8	1-c W-CDMA
BLF7G27LS-140	SOT502B	2500	2700	140	28	22	16.5	30	NCDMA/IS95
BLF8G27LS-140	SOT502B	2500	2700	140	32	32	17.4	45	2-c W-CDMA
BLF8G27LS-140V	SOT1120B	2600	2700	140	32	30	17.4	45	2-c W-CDMA
BLC8G27LS-140AV	SOT1275-1	2496	2690	140 ⁽¹⁾	28	43	14.5	28	1-c W-CDMA
BLF8G27LS-150V	SOT1244B	2500	2700	150	28	30	18	45	2-c W-CDMA
BLF8G27LS-150GV	SOT1244C	2500	2700	150	28	30	18	45	2-c W-CDMA
BLC9G27LS-151AV	SOT1275-3	2496	2690	150 ⁽¹⁾	28	46	15.6	28	1-c W-CDMA
BLC8G27LS-160AV	SOT1275-1	2496	2690	160 ⁽¹⁾	28	41	14.3	31.6	1-c W-CDMA
BLC8G27LS-180AV	SOT1275-3	2496	2690	180 ⁽¹⁾	28	43.5	14	28	1-c W-CDMA
BLC8G27LS-210PV	SOT1251-3	2500	2700	200 ⁽¹⁾	28	30	17	65	2-c W-CDMA
BLC8G27LS-240AV	SOT1252-1	2500	2700	240 ⁽¹⁾	28	37	14	56	1-c W-CDMA
BLC9G27XS-380AVT*	SOT1258-7	2500	2700	380 ⁽¹⁾	32	tbd	tbd	tbd	tbd

3.2.7 3.4 - 3.8 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLF9G38-10G*	SOT975C	3400	3800	10	28	tbd	tbd	tbd	tbd
BLF6G38S-25	SOT608B	3400	3800	25	28	24	15	4.5	NCDMA/IS95
BLF6G38LS-50	SOT502B	3400	3800	50	28	23	14	9	NCDMA/IS95
BLF8G38LS-75V	SOT1239B	3400	3800	75	30	26	15.5	20	1-c W-CDMA
BLF9G38LS-90P	SOT1121B	3400	3600	90	28	28	15	20	1-c W-CDMA

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production

3.2.8 LDMOS Doherty Designs

Frequency band (MHz)	P _{PEAK} (dBm)	P _{OUT,AVG} (dBm)	V _{DS} (V)	G _p (dB)	η _b (%)	Type	Main transistor	Peak transistor
462 - 468 MHz								
462-468	56	48.5	28	18.7	51.5	SYM	BLP8G05S-200	BLP8G05S-200
617-652 MHz								
617-652	54.8	47.5	24	17.8	53.7	SYM	BLP8G10S-270PW	
716 - 768 MHz								
716 - 768	56	47.5	28	18.1	48.6	SYM	BLP8G10S-270PW	
758 - 803 MHz								
758 - 803	55.6	48.4	28	17.8	47	SYM	BLF8G10LS-160	BLF8G10LS-160
728 - 821 MHz								
728 - 768	48.3	41	28	19	45	SYM	BLP8G10S-45P	
790 - 821	55.7	47.9	28	19.3	44	SYM	BLF8G10L-300P	
728 - 768	56	47.7	28	19.4	44	SYM	BLF8G10L-300P	
717 - 960 MHz								
717 - 960	tbd	tbd	50	tbd	tbd	SYM	BLC9H10XS-400P	
869 - 960 MHz								
869 - 895	47.5	39.2	28	18	47	SYM	BLP8G10S-45P	
869 - 895	58.5	50.5	28	16.4	49	SYM	BLF8G10LS-270	BLF8G10LS-270
869 - 895	59.9	52	28	15.2	48	ASYM	BLF8G10LS-270	2x BLF8G10LS-270
925 - 960	46	35.5	30	20	38	SYM	BLP7G22-10	BLP7G22-10
925 - 960	47.4	39.4	28	18	47.3	SYM	BLP8G10S-45P	
920 - 960	55.2	48	30	16.9	46.3	SYM	BLF8G10LS-160V	BLF8G10LS-160V
920 - 960	56.4	49.3	28	15.1	47	SYM	BLF8G09LS-400PW	
925 - 960	56.3	48.4	28	16	48.2	ASYM	BLC8G09LS-400AW	BLC8G09LS-400AW
920 - 960	57.1	49	30	16.1	46.7	ASYM	BLF8G10LS-160	BLF7G10LS-250
920 - 960	57.1	49	28	15	48	ASYM	BLF8G10LS-160	2x BLF8G10LS-160
920 - 960	57.3	49.3	30	16	50	ASYM	BLF8G10LS-160	BLF7G10LS-250
1476 - 1555 MHz								
1452 - 1501	56.2	47.5	28	18	50.1	ASYM	BLC9G15XS-400AVT	
1452 - 1501	56.2	47.5	28	18	50.1	ASYM	BLC9G15LS-400AVT	
1805 - 1880 MHz (DCS)								
1805 - 1880	45 (dual)	37	28	26	37	SYM ID	BLM8D1822S-50PB(G)	
1805 - 2025	52.9	44.5	28	15.8	50.6	ASYM	BLC8G21LS-160AV	
1805 - 1880	56.2	49.3	28	15	47.5	SYM	BLF8G20LS-200V	BLF8G20LS-200V
1805 - 1880	56.2	49	28	15	52.3	ASYM	BLF8G19LS-170BV	BLF8G20LS-220
1805 - 1880	57.3	50.5	30	17	50	ASYM	BLF8G20LS-220	BLF8G20LS-220
1805 - 1880	56	47.8	28	16.6	50.1	ASYM	BLC9G20LS-361AVT	
1805 - 1880	56.5	49.2	28	16.3	49.8	ASYM	BLC9G20LS-470AVT	
1805 - 1880	57.5	49.7	32	15.5	47	ASYM	BLC9G20XS-400AVT	
1805 - 1880	56.6	49	28	15	50.3	ASYM 3W	BLC9G20LS-160V	BLC9G20LS-361AVT _{peak 1 and peak 2}
1805 - 1880	57.6	50	28	15.5	48	ASYM	BLC9G20XS-550AVT	
1805 - 1880	58.3	50	30	15.3	50	ASYM 3W	BLC9G20LS-160V	BLC9G20LS-470AVT _{peak 1 and peak 2}
1805 - 1880	58.2	50.5	28	14.2	50	ASYM	BLF8G20LS-220	2x BLF8G20LS-220
1930 - 1990 MHz (PCS)								
1930 - 1990	57.3	50.5	30	17	50	ASYM	BLF8G20LS-220	BLF8G20LS-220
1930 - 1990	56.1	47.5	28	16.4	50	3WAY	BLC9G20LS-120V	BLC9G20LS-240PV _{peak1 and peak 2}
1930 - 1990	58.5	50.7	32	15.9	44	3WAY	BLF8G19LS-170BV	2x BLF8G19LS-170BV
1805 - 2025 MHz (TD-SCDMA)								
1805-2025	52.9	44.5	28	15.8	50.6	ASYM	BLC8G21LS-160AV	
2110 - 2170 MHz (UMTS / LTE)								
2110 - 2170	45 (dual)	37	28	26	37	SYM ID	BLM8D1822S-50PB(G)	
2113 - 2170	52.6	44.5	28	16.4	48.2	ASYM	BLC8G21LS-160AV	
2110 - 2170	55.6	49	28	15	52	ASYM	BLF8G22LS-140	BLF8G22LS-220
2112 - 2170	56.2	48.4	28	14.2	46.5	ASYM	BLC9G22XS-400AVT	
2110 - 2170	57.6	50	28	17.2	40	SYM	BLF8G22LS-200V	BLF8G22LS-200V
2110 - 2170	58	50	28	15	52	ASYM	BLC9G22LS-160V	BLC9G22XS400AVT
2110 - 2200	58.5	50.5	28	14	46	SYM 3W	BLC9G22LS-120VT	BLC9G22LS-240VT _{peak 1 and peak2}
2300 - 2400 MHz (LTE)								
2300 - 2400	47	38.5	26	14.2	48.5	ASYM	BLC8G27LS-60AV	
2300 - 2400	50.4	42	27	15.2	47.3	ASYM	BLC8G27LS-100AV	
2300 - 2400	52.6	44.5	28	15.5	47	ASYM	BLC9G27XS-170AV	
2300 - 2400	56	48	28	15	46	ASYM	BLC8G24LS-241AV	

3.2.8 LDMOS Doherty Designs (continued)

Frequency band (MHz)	P _{PEAK} (dBm)	P _{OUT,AVG} (dBm)	V _{DS} (V)	G _p (dB)	η _D (%)	Type	Main transistor	Peak transistor
2500 - 2700 MHz (LTE)								
2530 - 2630	53	45	28	14	43	ASYM	BLC8G27LS-160AV	
2620 - 2690	57.5	48	28	13	37	ASYM	BLF8G27LS-140G	2x BLF8G27LS-140G
2545 - 2660	54	46.5	28	15.2	45	SYM	BLF8G27LS-100V	BLF8G27LS-100V
2620 - 2690	56.2	48	32	15.2	39.1	SYM	BLF8G27LS-140V	BLF8G27LS-140V
2496 - 2690	47.5	39.5	26	14.5	50	ASYM	BLC8G27LS-60AV	
2496 - 2690	50.5	41.5	28	15.5	42	ASYM	BLC8G27LS-100AV	
2496 - 2690	52.3	44.5	28	15	50	ASYM	BLC9G27LS-151AV	
2496 - 2690	57.6	49.7	30	14.5	37.5	ASYM	BLC8G27LS-210PV	BLF8G27LS-150V _{peak 1 and peak 2}
3300 - 3800 MHz (TDD-LTE)								
3550 - 3700	43.5	36	30	15	37	SYM	BLF9G38LS-10G	BLF9G38LS-10G
3400 - 3600	50.3	42.5	28	13.3	38	SYM	BLF9G38LS-90P	
3400 - 3700	52	44.5	28	12.5	35	SYM	BLF8G38LS-75V	BLF8G38LS-75V

3.2.9 Single Package Asymmetric Doherty (PAD) LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLC8G27LS-60AV	SOT1275-3	2300	2690	60 ⁽¹⁾	28	44	15	7	1-c W-CDMA
BLC9G21LS-60AV*	SOT1275-3	1800	2025	60 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLC8G27LS-100AV	SOT1275-1	2496	2690	100 ⁽¹⁾	28	44	15.5	17.8	1-c W-CDMA
BLC8G27LS-140AV	SOT1275-1	2496	2690	140 ⁽¹⁾	28	43	14.5	28	1-c W-CDMA
BLC9G27LS-151AV	SOT1275-3	2496	2690	150 ⁽¹⁾	28	46	15.6	28	1-c W-CDMA
BLC9G20XS-160AV	SOT1275-3	1805	1880	160 ⁽¹⁾	30	47	16.6	28	1-c W-CDMA
BLC8G21LS-160AV	SOT1275-1	1805	2025	160 ⁽¹⁾	28	45	15	22.5	1-c W-CDMA
BLC8G27LS-160AV	SOT1275-1	2496	2690	160 ⁽¹⁾	28	41	14.3	31.6	1-c W-CDMA
BLC9G24XS-170AV	SOT1275-3	2300	2400	170 ⁽¹⁾	30	47	15.5	28	1-c W-CDMA
BLC8G27LS-180AV	SOT1275-3	2496	2690	180 ⁽¹⁾	28	43.5	14	28	1-c W-CDMA
BLC8G24LS-241AV	SOT1252-1	2300	2400	240 ⁽¹⁾	28	43	14.5	56	1-c W-CDMA
BLC8G27LS-240AV	SOT1252-1	2500	2700	240 ⁽¹⁾	28	37	14	56	1-c W-CDMA
BLC8G20LS-310AV	SOT1258-3	1900	2000	310 ⁽¹⁾	28	42.5	16.9	56	1-c W-CDMA
BLC9G20LS-361AVT	SOT1258-3	1805	1990	360 ⁽¹⁾	28	47.5	15.7	56.2	1-c W-CDMA
BLC9G27XS-380AVT*	SOT1258-7	2500	2700	380 ⁽¹⁾	32	tbd	tbd	tbd	tbd
BLC8G09XS-400AVT	SOT1258-7	859	960	400 ⁽¹⁾	32	47.5	17.4	93	1-c W-CDMA
BLC9G15LS-400AVT	SOT1258-3	1452	1511	400 ⁽¹⁾	32	51	16.2	93	1-c W-CDMA
BLC8G20LS-400AV	SOT1258-3	1800	2000	400 ⁽¹⁾	32	44	15.5	85	1-c W-CDMA
BLC9G20XS-400AVT	SOT1258-7	1805	1880	400 ⁽¹⁾	32	45	16.2	87	1-c W-CDMA
BLC9G22XS-400AVT	SOT1258-7	2110	2200	400 ⁽¹⁾	32	45	15.3	93	1-c W-CDMA
BLC8G22LS-450AV	SOT1258-3	2110	2170	450 ⁽¹⁾	28	41	14	85	1-c W-CDMA
BLC9G20LS-470AVT	SOT1258-3	1805	1990	470 ⁽¹⁾	28	47.5	15.7	80	1-c W-CDMA
BLC9G20XS-550AVT	SOT1258-7	1805	1880	550 ⁽¹⁾	28	44.5	15.4	85	1-c W-CDMA
BLC10G18XS-320AVT*	SOT1258-7	1800	1900	320 ⁽¹⁾	32	tbd	tbd	tbd	tbd

3.2.10 Overmolded Plastic (OMP) LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP9G0722-20	SOT1482-1	400	2700	20	28	21	19	35	1-c W-CDMA
BLP9G0722-20G	SOT1483-1	400	2700	20	28	21	19	35	1-c W-CDMA
BLP8G10S-45PG	SOT1224-2	700	1000	45	28	19.8	20.8	2.5	2-c W-CDMA
BLP8G10S-45P	SOT1223-2	700	1000	45	28	19.8	20.8	2.5	2-c W-CDMA
BLP8G05S-200	SOT1138-2	400	500	200	28	77	21	210	CW
BLP8G05S-200G	SOT1204-2	400	500	200	28	77	21	210	CW
BLP8G10S-270PW	SOT1221-2	700	900	270	28	46	17.3	56	1-c W-CDMA

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production

3.2.11 MMIC LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLM8G0710S-15PB	SOT1211-2	700	1000	15 ⁽¹⁾	28	27	36	1.5	1-c W-CDMA
BLM8G0710S-15PBG	SOT1212-2	700	1000	15 ⁽¹⁾	28	27	36	1.5	1-c W-CDMA
BLM7G1822S-20PB	SOT1211-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM7G1822S-20PBG	SOT1212-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM9D2325-20AB*	SOT1462-1	2300	2500	20 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D2527-20AB	SOT1462-1	2500	2700	20 ⁽¹⁾	28	43	28	3	1-c W-CDMA
BLM8D1822-25B*	SOT1462-1	1800	2200	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D2327-25B*	SOT1462-1	2300	2700	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM8G0710S-30PB	SOT1211-2	700	1000	30 ⁽¹⁾	28	24	35.7	3	1-c W-CDMA
BLM8G0710S-30PBG	SOT1212-2	700	1000	30 ⁽¹⁾	28	24	35.7	3	1-c W-CDMA
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40 ⁽¹⁾	28	25.5	31.3	4	1-c W-CDMA
BLM7G1822S-40PB	SOT1211-1	1805	2170	40 ⁽¹⁾	28	25	31.5	4	1-c W-CDMA
BLM7G1822S-40AB	SOT1211-2	1805	2170	40 ⁽¹⁾	28	25.5	31.3	4	1-c W-CDMA
BLM7G1822S-40PBG	SOT1212-1	1805	2170	40 ⁽¹⁾	28	25.5	31.3	4	1-c W-CDMA
BLM8G0710S-45AB	SOT1211-2	700	1000	45 ⁽¹⁾	28	23.4	35.6	3	1-c W-CDMA
BLM8G0710S-45ABG	SOT1212-2	700	1000	45 ⁽¹⁾	28	23.4	35.6	3	1-c W-CDMA
BLM8D1822S-50PB	SOT1211-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA
BLM8D1822S-50PBG	SOT1212-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA
BLM8G0710S-60PB	SOT1211-2	700	1000	60 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLM8G0710S-60PBG	SOT1212-2	700	1000	60 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLM7G1822S-80ABG	SOT1212-1	1805	2170	80 ⁽¹⁾	28	24	28.3	8	1-c W-CDMA
BLM7G1822S-80PBG	SOT1212-2	1805	2170	80 ⁽¹⁾	28	24	28	8	1-c W-CDMA
BLM7G1822S-80AB	SOT1211-1	1805	2170	80 ⁽¹⁾	28	24	28.3	8	1-c W-CDMA
BLM7G1822S-80PB	SOT1211-2	1805	2170	80 ⁽¹⁾	28	24	28	8	1-c W-CDMA

3.2.12 Small Cell LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLF9G38-10G*	SOT975C	3400	3800	10	28	tbd	tbd	tbd	tbd
BLM8G0710S-15PB	SOT1211-2	700	1000	15 ⁽¹⁾	28	27	36	1.5	1-c W-CDMA
BLM8G0710S-15PBG	SOT1212-2	700	1000	15 ⁽¹⁾	28	27	36	1.5	1-c W-CDMA
BLP9G0722-20	SOT1482-1	400	2700	20	28	21	19	35	1-c W-CDMA
BLP9G0722-20G	SOT1483-1	400	2700	20	28	21	19	35	1-c W-CDMA
BLM8G1822-20B*	SOT1462-3	1800	2200	20 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM7G1822S-20PB	SOT1211-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM7G1822S-20PBG	SOT1212-1	1805	2170	20 ⁽¹⁾	28	23	32.3	2	1-c W-CDMA
BLM9D2325-20AB*	SOT1462-1	2300	2500	20 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D2527-20AB	SOT1462-1	2500	2700	20 ⁽¹⁾	28	43	28	3	1-c W-CDMA
BLM8D1822-25B*	SOT1462-1	1800	2200	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D2327-25B*	SOT1462-1	2300	2700	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM8G0710S-30PB	SOT1211-2	700	1000	30 ⁽¹⁾	28	24	35.7	3	1-c W-CDMA
BLM8G0710S-30PBG	SOT1212-2	700	1000	30 ⁽¹⁾	28	24	35.7	3	1-c W-CDMA
BLM7G1822S-40ABG	SOT1212-2	1805	2170	40 ⁽¹⁾	28	25.5	31.3	4	1-c W-CDMA
BLM7G1822S-40PB	SOT1211-1	1805	2170	40 ⁽¹⁾	28	25	31.5	4	1-c W-CDMA
BLM7G1822S-40AB	SOT1211-2	1805	2170	40 ⁽¹⁾	28	25.5	31.3	4	1-c W-CDMA
BLM7G1822S-40PBG	SOT1212-1	1805	2170	40 ⁽¹⁾	28	25	31	4	1-c W-CDMA
BLM8G0710S-45AB	SOT1211-2	700	1000	45 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLM8G0710S-45ABG	SOT1212-2	700	1000	45 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLP8G10S-45P	SOT1223-2	700	1000	45	28	19.8	20.8	2.5	2-c W-CDMA
BLP8G10S-45PG	SOT1224-2	700	1000	45	28	19.8	20.8	2.5	2-c W-CDMA
BLM8D1822S-50PBG	SOT1212-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA
BLM8D1822S-50PB	SOT1211-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA
BLC9G21LS-60AV*	SOT1275-3	1800	2025	60 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM8G0710S-60PB	SOT1211-2	700	1000	60 ⁽¹⁾	28	23.4	35.6	6	1-c W-CDMA
BLC8G27LS-60AV	SOT1275-3	2300	2690	60 ⁽¹⁾	28	44	15	7	1-c W-CDMA
BLM7G1822S-80ABG	SOT1212-1	1805	2170	80 ⁽¹⁾	28	24	28.3	8	1-c W-CDMA

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production

3.2.12 Small Cell LDMOS Transistors (continued)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLM7G1822S-80PBG	SOT1212-2	1805	2170	80	28	24	28	8	1-c W-CDMA
BLM7G1822S-80AB	SOT1211-1	1805	2170	80	28	24	28.3	8	1-c W-CDMA
BLM7G1822S-80PB	SOT1211-2	1805	2170	80	28	24	28	8	1-c W-CDMA
BLF9G38LS-90P	SOT1121B	3400	3600	90	28	28	15	20	1-c W-CDMA
BLC8G27LS-100AV	SOT1275-1	2496	2690	100 ⁽¹⁾	28	44	15.5	17.8	1-c W-CDMA

3.2.13 MIMO LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP7G22-05	SOT1179-2	700	2700	5	28	23	16	1	2-c W-CDMA
BLP8G27-5	SOT1371-1	700	2700	5	28	19	19	0.3	2-c W-CDMA
BLP7G22-10	SOT1179-2	700	2700	10	28	25	17.4	2	2-c W-CDMA
BLP8G27-10	SOT1371-1	700	2700	10	28	22	17	2	2-c W-CDMA
BLM9D2325-20AB*	SOT1462-1	2300	2500	20 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D2527-20AB	SOT1462-1	2500	2700	20 ⁽¹⁾	28	43	28	3	1-c W-CDMA
BLM8D1822-25B*	SOT1462-1	1800	2200	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D2327-25B*	SOT1462-1	2300	2700	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM9D18-25AB*	SOT1462-1	1800	1880	25 ⁽¹⁾	28	tbd	tbd	tbd	tbd
BLM8D1822S-50PB	SOT1211-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA
BLM8D1822S-50PBG	SOT1212-2	1805	2170	50 ⁽¹⁾	28	37	26.5	5	1-c W-CDMA

3.2.14 High Voltage LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	P _{L(AV)} (W)	Test signal
BLP9H10S-30*	SOT1482	700	1000	30	50	tbd	tbd	tbd	tbd
BLC9H10XS-60P*	SOT1273-7	700	1000	60 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLF6H10LS-160	SOT467B	729	960	160	50	34	20	38	2-c W-CDMA
BLC9H10XS-300P*	SOT1273-7	700	1000	300 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-350A*	SOT1273-7	600	1000	350 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-400A*	SOT1273-7	700	1000	400 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-400P*	SOT1273-7	700	1000	400 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-600A*	SOT1250-1	700	1000	600 ⁽¹⁾	50	tbd	tbd	tbd	tbd
BLC9H10XS-800P*	SOT1252-7	700	1000	800 ⁽¹⁾	50	tbd	tbd	tbd	tbd

⁽¹⁾ P3dB

* Check status in section 3.1, as this type is not yet released for mass production

3.3 RF Power Transistors for Broadcast

RF power transistor selection guide on www.ampleon.com/products/broadcast
Easy-to-use parametric filters help you choose the right RF power transistor for your design

Device Naming Conventions for Broadcast

B	L	P	05	H	6	L	S	350	P
Push-pull device									
P1dB power									
Option: earless package									
Flange material L = CPC, X = Cu									
LDMOS technology generation									
M: Medium voltage H: High voltage									
Operating frequency (in 100 MHz; here 0-500)									
F: Ceramic package C: Air-cavity plastic (ACP) package P: Overmolded plastic package (OMP)									
L: High-frequency power transistor									
B: Semiconductor die made of Si									

3.3.1 UHF Broadcast LDMOS Transistors (470 - 860 MHz)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	-	CW class-AB @ 860 MHz
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	-	CW pulsed class-AB @ 860 MHz
BLP10H610	SOT1352-1	10	1400	10	50	60	22	-	CW pulsed class-AB @ 860 MHz
BLF571	SOT467C	10	500	20	50	70	27.5	-	CW
BLF642	SOT467C	1	1400	35	32	63	19	-	CW
BLF871	SOT467C	1	1000	100	40	60	21	24	CW
BLF871S	SOT467B	1	1000	100	40	60	21	24	CW
BLF881	SOT467C	1	1000	140	50	49	21	33	CW
BLF881S	SOT467B	1	1000	140	50	49	21	33	CW
BLP15M7160P	SOT1223-2	10	1500	160	28	59.7	19.4	-	CW
BLF882	SOT502A	10	860	200	50	63	20.6	33	CW
BLF882S	SOT502B	10	860	200	50	63	20.6	33	CW
BLF884P	SOT1121A	470	860	350	50	46	21	70	CW
BLF884PS	SOT1121B	470	860	350	50	46	21	70	CW
BLF879P	SOT539A	470	860	500	42	47	21	95	CW
BLF879PS	SOT539B	470	860	500	42	47	21	95	CW
BLF888A	SOT539A	470	860	600	50	31	20	110	DVB-T (8k OFDM)
BLF888AS	SOT539B	470	860	600	50	31	20	110	DVB-T (8k OFDM)
BLF888D	SOT539A	470	806	600	50	40	17	130	DVB-T (8k OFDM)
BLF888DS	SOT539B	470	806	600	50	40	17	130	DVB-T (8k OFDM)
BLF888B	SOT539A	470	860	650	50	33	21	120	DVB-T (8k OFDM)
BLF888BS	SOT539B	470	860	650	50	33	21	120	DVB-T (8k OFDM)
BLF888E	SOT539A	470	790	750	50	52	17	150	DVB-T (8k OFDM)
BLF888ES	SOT539B	470	790	750	50	52	17	150	DVB-T (8k OFDM)
BLF898*	SOT539A	470	800	900	50	28	18	180	DVB-T (8k OFDM)
BLF898S*	SOT539B	470	800	900	50	28	18	180	DVB-T (8k OFDM)

* Check status in section 3.1, as this type is not yet released for mass production

3.3.2 HF / VHF Broadcast LDMOS Transistors (0 - 500 MHz)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _o (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	-	CW class-AB @ 860 MHz
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	-	CW pulsed class-AB @ 860 MHz
BLP25M705	SOT1179-2	10	2500	5	28	50	16.4	-	CW class-AB @ 2450 MHz
BLP35M805	SOT1371-1	10	3500	5	32	50	20	-	CW class-AB @ 2450 MHz
BLF640	SOT538A	10	2200	10	28	31	19.3	2	1-c W-CDMA
BLP10H610	SOT1352-1	10	1400	10	50	60	22	-	CW pulsed class-AB @ 860 MHz
BLP25M710	SOT1179-2	10	2500	10	28	64.5	16.2	-	CW pulsed class-AB @ 2450 MHz
BLP27M810	SOT1371-1	10	2700	10	32	50.6	18.4	-	CW class-AB @ 2450 MHz
BLF571	SOT467C	10	500	20	50	70	27.5	-	CW
BLF642	SOT467C	1	1400	35	32	63	19	-	CW
BLP05H635XR	SOT1223-2	10	600	35	50	75	27	-	Pulsed RF
BLP05H635XRG	SOT1224-2	10	600	35	50	75	27	-	Pulsed RF
BLF644P	SOT1228A	10	1300	70	32	66	23.5	-	CW pulsed, class-AB
BLP05H675XR	SOT1223-2	10	600	75	50	75	27	-	Pulsed RF
BLP05H675XRG	SOT1224-2	10	600	75	50	75	27	-	Pulsed RF
BLF645	SOT540A	1	1400	100	32	56	18	-	CW
BLF871	SOT467C	1	1000	100	40	60	21	24	CW
BLF871S	SOT467B	1	1000	100	40	60	21	24	CW
BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	-	Pulsed RF
BLP05H6110XRG	SOT1224-2	10	600	110	50	75	27	-	Pulsed RF
BLF881	SOT467C	1	1000	140	50	49	21	33	CW
BLF881S	SOT467B	1	1000	140	50	49	21	33	CW
BLP05H6150XR	SOT1223-2	10	600	150	50	75	27	-	Pulsed RF
BLP05H6150XRG	SOT1224-2	10	600	150	50	75	27	-	Pulsed RF
BLF647P	SOT1121A	10	1500	200	32	70	18	-	Pulsed RF
BLF647PS	SOT1121B	10	1500	200	32	70	17.5	-	Pulsed RF
BLF882	SOT502A	10	860	200	50	63	20.6	33	CW
BLF882S	SOT502B	10	860	200	50	63	20.6	33	CW
BLF182XR	SOT1121A	10	600	250	50	75	28	-	Pulsed RF
BLF182XRS	SOT1121B	10	600	250	50	75	28	-	Pulsed RF
BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	-	Pulsed RF
BLP05H6250XRG	SOT1224-2	10	600	250	50	75	27	-	Pulsed RF
BLF573	SOT502A	10	500	300	50	70	27.2	-	CW
BLF573S	SOT502B	10	500	300	50	70	27.2	-	CW
BLF183XR	SOT1121A	10	600	350	50	75	28	-	Pulsed RF
BLF183XRS	SOT1121B	10	600	350	50	75	28	-	Pulsed RF
BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	-	Pulsed RF
BLP05H6350XRG	SOT1224-2	10	600	350	50	75	27.5	-	Pulsed RF
BLF174XR	SOT1214A	10	128	600	50	73	29	-	Pulsed RF
BLF174XRS	SOT1214B	10	128	600	50	73	29	-	Pulsed RF
BLF574	SOT539A	10	500	600	50	70	26.5	-	CW
BLF574XR	SOT1214A	10	500	600	50	74.7	24	-	Pulsed RF
BLF574XRS	SOT1214B	10	500	600	50	74.7	24	-	Pulsed RF
BLF184XR	SOT1214A	10	600	700	50	73.5	23.9	-	Pulsed RF
BLF184XRG	SOT1214C	10	600	700	50	73.5	23.9	-	Pulsed RF
BLF184XRS	SOT1214B	10	600	700	50	73.5	23.9	-	Pulsed RF
BLP05H6700XR	SOT1138-2	10	600	700	50	75	26	-	Pulsed RF
BLP05H6700XRG	SOT1204-2	10	600	700	50	75	26	-	Pulsed RF
BLF178P	SOT539A	10	128	1200	50	75	28.5	-	Pulsed RF
BLF578	SOT539A	10	500	1200	50	75	26	-	CW
BLF178XR	SOT539A	10	128	1400	50	72	28	-	Pulsed RF
BLF178XRS	SOT539B	10	128	1400	50	72	28	-	Pulsed RF
BLF188XR	SOT539A	10	600	1400	50	73	24.4	-	Pulsed RF
BLF188XRG	SOT1248C	10	600	1400	50	73	24.4	-	Pulsed RF
BLF188XRS	SOT539B	10	600	1400	50	73	24.4	-	Pulsed RF
BLF578XR	SOT539A	10	500	1400	50	69	23.5	-	Pulsed RF
BLF578XRS	SOT539B	10	500	1400	50	69	23.5	-	Pulsed RF
BLF189XRA*	SOT539A	1	300	1600	50	tbd	tbd	tbd	CW
BLF189XRAS*	SOT539B	1	300	1600	50	tbd	tbd	tbd	CW
BLF189XRB*	SOT539A	1	150	1900	50	tbd	tbd	tbd	Pulsed RF
BLF189XRB5*	SOT539B	1	150	1900	50	tbd	tbd	tbd	Pulsed RF

* Check status in section 3.1, as this type is not yet released for mass production

3.3.3 HF / VHF Broadcast LDMOS Transistors (0 - 1600 MHz)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _o (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	-	CW class-AB @ 860 MHz
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	-	CW pulsed class-AB @ 860 MHz
BLP25M705	SOT1179-2	10	2500	5	28	50	16.4	-	CW class-AB @ 2450 MHz
BLP35M805	SOT1371-1	10	3500	5	32	50	20	-	CW class-AB @ 2450 MHz
BLF640	SOT538A	10	2200	10	28	31	19.3	2	1-c W-CDMA
BLP10H610	SOT1352-1	10	1400	10	50	60	22	-	CW pulsed class-AB @ 860 MHz
BLP25M710	SOT1179-2	10	2500	10	28	64.5	16.2	-	CW pulsed class-AB @ 2450 MHz
BLP27M810	SOT1371-1	10	2700	10	32	50.6	18.4	-	CW class-AB @ 2450 MHz
BLF571	SOT467C	10	500	20	50	70	27.5	-	CW
BLP10H630P	SOT1223-2	10	1000	30	50	72	18	-	Pulsed RF
BLP10H630PG	SOT1224-2	10	1000	30	50	72	18	-	Pulsed RF
BLF642	SOT467C	1	1400	35	32	63	19	-	CW
BLP10H660P	SOT1223-2	10	1000	60	50	72	18	-	Pulsed RF
BLP10H660PG	SOT1224-2	10	1000	60	50	72	18	-	Pulsed RF
BLF644P	SOT1228A	10	1300	70	32	66	23.5	-	CW pulsed, class-AB
BLP10H690P	SOT1223-2	10	1000	90	50	72	18	-	Pulsed RF
BLP10H690PG	SOT1224-2	10	1000	90	50	72	18	-	Pulsed RF
BLF645	SOT540A	1	1400	100	32	56	18	-	CW
BLF871	SOT467C	1	1000	100	40	60	21	24	CW
BLF871S	SOT467B	1	1000	100	40	60	21	24	CW
BLP10H6120P	SOT1223-2	10	1000	120	50	72	18	-	Pulsed RF
BLP10H6120PG	SOT1224-2	10	1000	120	50	72	18	-	Pulsed RF
BLF10M6135	SOT502A	700	1000	135	28	28	21	26.5	2-c W-CDMA
BLF10M6LS135	SOT502B	700	1000	135	28	28	21	26.5	2-c W-CDMA
BLF881	SOT467C	1	1000	140	50	49	21	33	CW
BLF881S	SOT467B	1	1000	140	50	49	21	33	CW
BLF10M6160	SOT502A	700	1000	160	32	27	22.5	32	2-c W-CDMA
BLF10M6LS160	SOT502B	700	1000	160	32	27	22.5	32	2-c W-CDMA
BLP15M7160P	SOT1223-2	10	1500	160	28	59.7	19.4	-	CW
BLF10M6200	SOT502A	700	1000	200	28	28.5	20	40	2-c W-CDMA
BLF10M6LS200	SOT502B	700	1000	200	28	28.5	20	40	2-c W-CDMA
BLF2324M8LS200P	SOT539B	2300	2400	200	28	32	17.2	60	1-c W-CDMA
BLF647P	SOT1121A	10	1500	200	32	70	18	-	Pulsed RF
BLF647PS	SOT1121B	10	1500	200	32	70	17.5	-	Pulsed RF
BLF6G13L-250P	SOT1121A	1300	1300	250	50	56	17	-	CW
BLF6G13LS-250P	SOT1121B	1300	1300	250	50	56	17	-	CW
BLF6G13LS-250PG	SOT1121E	1300	1300	250	50	56	17	-	CW
BLF6G15L-500H	SOT539A	1400	1500	500	50	19	16	65	DVB-T (8k OFDM)
BLF6G15LS-500H	SOT539B	1400	1500	500	50	19	16	65	DVB-T (8k OFDM)
BLF10H6600P	SOT539A	400	1000	600	50	46	20.8	-	2-Tone, class-AB
BLF10H6600PS	SOT539B	400	1000	600	50	46	20.8	-	2-Tone, class-AB

3.4 RF Power Transistors for ISM (Industrial, Scientific and Medical)

RF power transistor selection guide on www.ampleon.com/products/ism

Easy-to-use parametric filters help you choose the right RF power transistor for your design

Device Naming Conventions for ISM

B L P 05 H 6 L S 350 XR

B	L	P	05	H	6	L	S	350	XR
									Extremely Rugged
									P1dB power
									Option: earless package
									Flange material L = CPC, X = Cu
									LDMOS technology generation
									M: Medium voltage H: High voltage
									Operating frequency (in 100 MHz; here 0-500)
									F: Ceramic package C: Air-cavity plastic (ACP) package P: Overmolded plastic package (OMP)
									L: High-frequency power transistor
									B: Semiconductor die made of Si

3.4.1 ISM LDMOS Transistors (0 - 500 MHz / XR)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	CW class-AB @ 860 MHz
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	CW pulsed class-AB @ 860 MHz
BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW pulsed class-AB @ 860 MHz
BLF571	SOT467C	10	500	20	50	70	27.5	CW
BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
BLP05H635XRG	SOT1224-2	10	600	35	50	75	27	Pulsed RF
BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
BLP05H675XRG	SOT1224-2	10	600	75	50	75	27	Pulsed RF
BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	Pulsed RF
BLP05H6110XRG	SOT1224-2	10	600	110	50	75	27	Pulsed RF
BLP05H6150XR	SOT1223-2	10	600	150	50	75	27	Pulsed RF
BLP05H6150XRG	SOT1224-2	10	600	150	50	75	27	Pulsed RF
BLF182XR	SOT1121A	10	600	250	50	75	28	Pulsed RF
BLF182XRS	SOT1121B	10	600	250	50	75	28	Pulsed RF
BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	Pulsed RF
BLP05H6250XRG	SOT1224-2	10	600	250	50	75	27	Pulsed RF
BLF573	SOT502A	10	500	300	50	70	27.2	CW
BLF573S	SOT502B	10	500	300	50	70	27.2	CW
BLF183XR	SOT1121A	10	600	350	50	75	28	Pulsed RF
BLF183XRS	SOT1121B	10	600	350	50	75	28	Pulsed RF
BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	Pulsed RF
BLP05H6350XRG	SOT1224-2	10	600	350	50	75	27.5	Pulsed RF
BLF174XR	SOT1214A	10	128	600	50	73	29	Pulsed RF
BLF174XRS	SOT1214B	10	128	600	50	73	29	Pulsed RF
BLF574	SOT539A	10	500	600	50	70	26.5	CW
BLF574XR	SOT1214A	10	500	600	50	74.7	24	Pulsed RF
BLF574XRS	SOT1214B	10	500	600	50	74.7	24	Pulsed RF

3.4.1 ISM LDMOS Transistors (0 - 500 MHz / XR) (continued)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	Test signal
BLF184XR	SOT1214A	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRG	SOT1214C	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRS	SOT1214B	10	600	700	50	73.5	23.9	Pulsed RF
BLP05H6700XR	SOT1138-2	10	600	700	50	75	26	Pulsed RF
BLP05H6700XRG	SOT1204-2	10	600	700	50	75	26	Pulsed RF
BLF178P	SOT539A	10	128	1200	50	75	28.5	Pulsed RF
BLF578	SOT539A	10	500	1200	50	75	26	CW
BLF178XR	SOT539A	10	128	1400	50	72	28	Pulsed RF
BLF178XRS	SOT539B	10	128	1400	50	72	28	Pulsed RF
BLF188XR	SOT539A	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRG	SOT1248C	10	600	1400	50	73	24.4	Pulsed RF
BLF188XRS	SOT539B	10	600	1400	50	73	24.4	Pulsed RF
BLF578XR	SOT539A	10	500	1400	50	69	23.5	Pulsed RF
BLF578XRS	SOT539B	10	500	1400	50	69	23.5	Pulsed RF
BLF189XRA*	SOT539A	1	300	1600	50	tbd	tbd	CW
BLF189XRAS*	SOT539B	1	300	1600	50	tbd	tbd	CW
BLF189XRB*	SOT539A	1	150	1900	50	tbd	tbd	Pulsed RF
BLF189XRBS*	SOT539B	1	150	1900	50	tbd	tbd	Pulsed RF

3.4.2 ISM LDMOS Transistors (0 - 1600 MHz)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	-	CW class-AB @ 860 MHz
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	-	CW pulsed class-AB @ 860 MHz
BLP25M705	SOT1179-2	10	2500	5	28	50	16.4	-	CW class-AB @ 2450 MHz
BLP35M805	SOT1371-1	10	3500	5	32	50	20	-	CW class-AB @ 2450 MHz
BLF640	SOT538A	10	2200	10	28	31	19.3	2	1-c W-CDMA
BLP10H610	SOT1352-1	10	1400	10	50	60	22	-	CW pulsed class-AB @ 860 MHz
BLP25M710	SOT1179-2	10	2500	10	28	64.5	16.2	-	CW pulsed class-AB @ 2450 MHz
BLP27M810	SOT1371-1	10	2700	10	32	50.6	18.4	-	CW class-AB @ 2450 MHz
BLP10H630P	SOT1223-2	10	1000	30	50	72	18	-	Pulsed RF
BLP10H630PG	SOT1224-2	10	1000	30	50	72	18	-	Pulsed RF
BLF642	SOT467C	1	1400	35	32	63	19	-	CW
BLP10H660P	SOT1223-2	10	1000	60	50	72	18	-	Pulsed RF
BLP10H660PG	SOT1224-2	10	1000	60	50	72	18	-	Pulsed RF
BLF644P	SOT1228A	10	1300	70	32	66	23.5	-	CW pulsed, class-AB
BLP10H690P	SOT1223-2	10	1000	90	50	72	18	-	Pulsed RF
BLP10H690PG	SOT1224-2	10	1000	90	50	72	18	-	Pulsed RF
BLF645	SOT540A	1	1400	100	32	56	18	-	CW
BLP10H6120P	SOT1223-2	10	1000	120	50	72	18	-	Pulsed RF
BLP10H6120PG	SOT1224-2	10	1000	120	50	72	18	-	Pulsed RF
BLP15M7160P	SOT1223-2	10	1500	160	28	59.7	19.4	-	CW
BLF1721M8LS200	SOT502B	1700	2100	200	28	28.5	19	55	2-c W-CDMA
BLF2324M8LS200P	SOT539B	2300	2400	200	28	32	17.2	60	1-c W-CDMA
BLF647P	SOT1121A	10	1500	200	32	70	18	-	Pulsed RF
BLF647PS	SOT1121B	10	1500	200	32	70	17.5	-	Pulsed RF
BLF6G13L-250P	SOT1121A	1300	1300	250	50	56	17	-	CW
BLF6G13LS-250P	SOT1121B	1300	1300	250	50	56	17	-	CW
BLF6G15L-500H	SOT539A	1400	1500	500	50	19	16	65	DVB-T (8k OFDM)
BLF6G15LS-500H	SOT539B	1400	1500	500	50	19	16	65	DVB-T (8k OFDM)
BLF10H6600P	SOT539A	400	1000	600	50	46	20.8	-	2-Tone, class-AB
BLF10H6600PS	SOT539B	400	1000	600	50	46	20.8	-	2-Tone, class-AB

* Check status in section 3.1, as this type is not yet released for mass production

3.5 RF Power Transistors for RF Energy

RF power transistor selection guide on www.ampleon.com/products/rf-energy
Easy-to-use parametric filters help you choose the right RF power transistor for your design

Device Naming Conventions for RF Energy

B	L	C	2425	M	8	L	S	300	P
									Push-pull device
									P1dB power
									Option: earless package
									Flange material L = CPC, X = Cu
									LDMOS technology generation
									L: Low voltage M: Medium voltage H: High voltage
									Operating frequency (in 100 MHz; here 2400-2500)
									F: Ceramic package C: Air-cavity plastic (ACP) package P: Overmolded plastic package (OMP)
									L: High-frequency power transistor
									B: Semiconductor die made of Si

3.5.1 RF Energy LDMOS Transistors (0 - 500 MHz)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	P _{L(AV)} (W)	Test signal
BLP05H635XR	SOT1223-2	10	600	35	50	75	27	-	Pulsed RF
BLP05H635XRG	SOT1224-2	10	600	35	50	75	27	-	Pulsed RF
BLP05H675XR	SOT1223-2	10	600	75	50	75	27	-	Pulsed RF
BLP05H675XRG	SOT1224-2	10	600	75	50	75	27	-	Pulsed RF
BLP05H6110XR	SOT1223-2	10	600	110	50	75	27	-	Pulsed RF
BLP05H6110XRG	SOT1224-2	10	600	110	50	75	27	-	Pulsed RF
BLF10M6135	SOT502A	700	1000	135	28	28	21	26.5	2-c W-CDMA
BLP05H6150XRG	SOT1224-2	10	600	150	50	75	27	-	Pulsed RF
BLC10M6XS200	SOT1270-1	425	450	200	28	80	21	-	CW
BLP05M7200	SOT1138-2	425	450	200	28	77	21	-	CW
BLP05H6250XR	SOT1223-2	10	600	250	50	75	27	-	Pulsed RF
BLP05H6250XRG	SOT1224-2	10	600	250	50	75	27	-	Pulsed RF
BLP05H6350XR	SOT1223-2	10	600	350	50	75	27.5	-	Pulsed RF
BLP05H6350XRG	SOT1224-2	10	600	350	50	75	27.5	-	Pulsed RF
BLP05H6700XR	SOT1138-2	10	600	700	50	75	26	-	Pulsed RF
BLP05H6700XRG	SOT1204-2	10	600	700	50	75	26	-	Pulsed RF

3.5.2 RF Energy LDMOS Transistors (915 MHz)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _D (dB)	P _{L(AV)} (W)	Test signal
BLP10H603	SOT1352-1	10	1400	2.5	50	62	22.8	-	CW class-AB @ 860 MHz
BLP10H605	SOT1352-1	10	1400	5	50	59.6	22.4	-	CW pulsed class-AB @ 860 MHz
BLP10H610	SOT1352-1	10	1400	10	50	60	22	-	CW pulsed class-AB @ 860 MHz
BLP10H630P	SOT1223-2	10	1000	30	50	72	18	-	Pulsed RF
BLP10H630PG	SOT1224-2	10	1000	30	50	72	18	-	Pulsed RF
BLP10H660P	SOT1223-2	10	1000	60	50	72	18	-	Pulsed RF
BLP10H660PG	SOT1224-2	10	1000	60	50	72	18	-	Pulsed RF
BLP10H690P	SOT1223-2	10	1000	90	50	72	18	-	Pulsed RF
BLP10H690PG	SOT1224-2	10	1000	90	50	72	18	-	Pulsed RF
BLP10H6120P	SOT1223-2	10	1000	120	50	72	18	-	Pulsed RF
BLP10H6120PG	SOT1224-2	10	1000	120	50	72	18	-	Pulsed RF
BLF0910H6L500	SOT502A	900	930	500	50	61	18	-	CW
BLF0910H6L500	SOT502B	900	930	500	50	61	18	-	CW
BLF10H6600P	SOT539A	400	1000	600	50	46	20.8	-	2-Tone, class-AB
BLF10H6600PS	SOT539B	400	1000	600	50	46	20.8	-	2-Tone, class-AB

3.5.3 RF Energy LDMOS Transistors (2.45 GHz)

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _D (dB)	P _{L(AV)} (W)	Test signal
BLP35M805	SOT1371-1	10	3500	5	32	50	20	-	CW class-AB @ 2450 MHz
BLP27M810	SOT1371-1	10	2700	10	32	50.6	18.4	-	CW class-AB @ 2450 MHz
BLF2425M9L30	SOT1135A	2400	2500	30	32	61	18.5	30	CW
BLF2425M9LS30	SOT1135B	2400	2500	30	32	61	18.5	30	CW
BLM2425M7S60P	SOT1211-1	2400	2500	60	32	45	27.5	60	CW class-AB @ 2450 MHz
BLF2425M8L140	SOT502A	2400	2500	140	28	56	19	140	CW
BLF2425M9LS140	SOT502B	2400	2500	140	28	58	19	140	CW
BLC2425M9LS250	SOT1270-1	2400	2500	250	32	61	18.5	250	CW
BLF2425M7LS250P	SOT539B	2400	2500	250	28	51	15	250	CW
BLF2425M7L250P	SOT539A	2400	2500	250	28	51	15	250	CW
BLC2425M8LS300P	SOT1250-1	2400	2500	300	32	58	17.5	300	CW
BLC2425M9LS700PV*	SOT1258-1	2400	2500	1200 ⁽¹⁾	32	50	12.5	-	Pulsed CW

⁽¹⁾ P3dB pulsed. θ ≤ 10%

* Check status in section 3.1, as this type is not yet released for mass production

3.6 RF Power Transistors for Aerospace & Defense

RF power transistor selection guide on www.ampleon.com/products/aerospace-and-defense
Easy-to-use parametric filters help you choose the right RF power transistor for your design

Device Naming Conventions for Aerospace & Defense

B	L	S	6	G	2731	L	S	-120	G
									Option: gullwing shaped leads
									P: Push-pull device
									R: Enhanced ruggedness
									P1dB power
									S: Earless package
									P: Pallet
									Flange material
									L = CPC
									Frequency band (in 100 MHz; here: 2700-3100)
									G: Standard LDMOS (≤ 28 V)
									H: High voltage LDMOS (50 V)
									LDMOS technology generation
									A: Avionics frequency band operation
									L: L-Band frequency operation
									S: S-Band frequency operation
									L: High frequency power transistor
									B: Semiconductor die made of Si

3.6.1 Avionics LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η_D (%)	G _p (dB)	Test signal
BLL6H0514-25	SOT467C	500	1400	25	50	50	19	Pulsed RF
BLA6G1011L-200RG	SOT502D	1030	1090	200	28	65	20	Pulsed RF
BLA6G1011LS-200RG	SOT502C	1030	1090	200	28	65	20	Pulsed RF
BLA6G1011-200R	SOT502A	1030	1090	200	28	65	20	Pulsed RF
BLA8G1011LS-300	SOT502B	1030	1090	300	32	56	16.5	Pulsed RF
BLA8G1011L-300	SOT502A	1030	1090	300	32	56	16.5	Pulsed RF
BLA8G1011L-300G	SOT502F	1030	1090	300	32	56	16.5	Pulsed RF
BLA8G1011LS-300G	SOT502E	1030	1090	300	32	56	16.5	Pulsed RF
BLA9G1011L-300*	SOT502A	1030	1090	300	32	57	20.5	Pulsed RF
BLA9G1011L-300G*	SOT502F	1030	1090	300	32	57	20.5	Pulsed RF
BLA9G1011LS-300G*	SOT502E	1030	1090	300	32	57	20.5	Pulsed RF
BLA9G1011LS-300	SOT502B	1030	1090	300	32	57	20.5	Pulsed RF
BLA8H0910L-500	SOT502A	900	930	500	50	62.5	19.5	CW pulsed
BLA8H0910LS-500	SOT502B	900	930	500	50	62.5	19.5	CW pulsed
BLA6H0912-500	SOT634A	960	1215	500	50	50	17	Pulsed RF
BLA6H1011-600	SOT539A	1030	1090	600	48	52	17	Pulsed RF
BLU6H0410L-600P	SOT539A	400	900	600	50	58	20	Pulsed RF
BLU6H0410LS-600P	SOT539B	400	900	600	50	58	20	Pulsed RF
BLF988	SOT539A	500	1000	600	50	58	19.8	Pulsed, class-AB
BLF988S	SOT539B	500	1000	600	50	58	19.8	Pulsed, class-AB
BLA6H0912L-1000	SOT539A	960	1215	1000	50	51	15.5	Pulsed RF
BLA6H0912LS-1000	SOT539B	960	1215	1000	50	51	15.5	Pulsed RF

* Check status in section 3.1, as this type is not yet released for mass production

3.6.2 L-Band LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _D (dB)	Test signal
BLL8H0514-25	SOT467C	500	1400	25	50	59	21	Pulsed RF
BLL6H0514-25	SOT467C	500	1400	25	50	50	19	Pulsed RF
BLL6H0514L-130	SOT1135A	500	1400	130	50	50	17	Pulsed RF
BLL6H0514LS-130	SOT1135B	500	1400	130	50	50	17	Pulsed RF
BLL8H0514L-130	SOT1135A	500	1400	130	50	50	17	Pulsed RF
BLL8H0514LS-130	SOT1135B	500	1400	130	50	50	17	Pulsed RF
BLL6H1214LS-250	SOT502B	1200	1400	250	50	55	17	Pulsed RF
BLL8H1214LS-250	SOT502B	1200	1400	250	50	55	17	Pulsed RF
BLL6G1214L-250	SOT502A	1200	1400	250	36	45	15	Pulsed RF
BLL6H1214L-250	SOT502A	1200	1400	250	50	55	17	Pulsed RF
BLL6H1214P2S-250	SOM039	1.2	1.4	250	45	48	27	Pulsed RF
BLL8H1214L-250	SOT502A	1200	1400	250	50	55	17	Pulsed RF
BLL6H1214-500	SOT539A	1200	1400	500	50	50	17	Pulsed RF
BLL8H1214L-500	SOT539A	1200	1400	500	50	50	17	Pulsed RF
BLL6H1214LS-500	SOT539B	1200	1400	500	50	50	17	Pulsed RF
BLL8H1214LS-500	SOT539B	1200	1400	500	50	50	17	Pulsed RF
BLL9G1214L-600*	SOT502A	1200	1400	600	32	60	19	Pulsed RF
BLL9G1214LS-600*	SOT502B	1200	1400	600	32	60	19	Pulsed RF

3.6.3 S-Band LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _D (dB)	Test signal
BLS6G2731-6G	SOT975C	2700	3100	6	32	33	15	Pulsed RF
BLS6G3135-20	SOT608A	3100	3500	20	32	45	15.5	Pulsed RF
BLS6G3135S-20	SOT608B	3100	3500	20	32	45	15.5	Pulsed RF
BLS6G2735L-30	SOT1135A	2700	3500	30	32	50	13	Pulsed RF
BLS6G2735LS-30	SOT1135B	2700	3500	30	32	50	13	Pulsed RF
BLS9G2735L-50*	SOT1135A	2700	3500	50	32	47	12	Pulsed RF
BLS9G2735LS-50*	SOT1135B	2700	3500	50	32	47	12	Pulsed RF
BLS7G2325L-105	SOT502A	2300	2500	105	30	55	16.5	Pulsed RF
BLS6G3135-120	SOT502A	3100	3500	120	32	43	11	Pulsed RF
BLS6G2731-120	SOT502A	2700	3100	120	32	48	13.5	Pulsed RF
BLS6G2731S-120	SOT502B	2700	3100	120	32	48	13.5	Pulsed RF
BLS6G3135S-120	SOT502B	3100	3500	120	32	43	11	Pulsed RF
BLS6G2731S-130	SOT922-1	2700	3100	130	32	50	12	Pulsed RF
BLS6G2933S-130	SOT922-1	2900	3300	130	32	47	12.5	Pulsed RF
BLS7G2933S-150	SOT922-1	2900	3300	150	32	47	13.5	Pulsed RF
BLS7G2730L-200P	SOT539A	2700	3000	200	32	48	12	Pulsed RF
BLS7G2730LS-200P	SOT539B	2700	3000	200	32	48	12	Pulsed RF
BLS7G3135LS-200	SOT502B	3100	3500	200	32	43	12	Pulsed RF
BLS9G2729L-350	SOT502A	2700	2900	350	28	50	14	Pulsed RF
BLS9G2729LS-350	SOT502B	2700	2900	350	28	50	14	Pulsed RF
BLS7G2729L-350P	SOT539A	2700	2900	350	32	50	13	Pulsed RF
BLS7G3135L-350P	SOT539A	3100	3500	350	32	43	12	Pulsed RF @ 3.1 GHz
BLS7G3135LS-350P	SOT539B	3100	3500	350	32	43	12	Pulsed RF @ 3.1 GHz
BLS7G2729LS-350P	SOT539B	2700	2900	350	32	50	13	Pulsed RF
BLS8G2731L-400P	SOT539A	2700	3100	400	32	47	13	Pulsed RF
BLS8G2731LS-400P	SOT539B	2700	3100	400	32	47	13	Pulsed RF
BLS9G2731L-400	SOT502A	2700	3100	400	32	47	13	Pulsed RF
BLS9G2731LS-400	SOT502B	2700	3100	400	32	47	13	Pulsed RF
BLS9G2934L-400	SOT502A	2900	3400	400	32	43	12	Pulsed RF
BLS9G2934LS-400	SOT502B	2900	3400	400	32	43	12	Pulsed RF
BLS9G3135L-400	SOT502A	3100	3500	400	32	43	12	Pulsed RF
BLS9G3135LS-400	SOT502B	3100	3500	400	32	43	12	Pulsed RF

* Check status in section 3.1, as this type is not yet released for mass production

3.6.4 Sub-1 GHz LDMOS Transistors

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L1(dB)} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLP10H610	SOT1352-1	10	1400	10	50	60	22	CW pulsed class-AB @ 860 MHz
BLP10H630P	SOT1223-2	10	1000	30	50	72	18	Pulsed RF
BLP10H630PG	SOT1224-2	10	1000	30	50	72	18	Pulsed RF
BLP05H635XR	SOT1223-2	10	600	35	50	75	27	Pulsed RF
BLP05H635XRG	SOT1224-2	10	600	35	50	75	27	Pulsed RF
BLP10H660P	SOT1223-2	10	1000	60	50	72	18	Pulsed RF
BLP10H660PG	SOT1224-2	10	1000	60	50	72	18	Pulsed RF
BLP05H675XR	SOT1223-2	10	600	75	50	75	27	Pulsed RF
BLP05H675XRG	SOT1224-2	10	600	75	50	75	27	Pulsed RF
BLP10H6120P	SOT1223-2	10	1000	120	50	72	18	Pulsed RF
BLP10H6120PG	SOT1224-2	10	1000	120	50	72	18	Pulsed RF
BLF182XR	SOT1121A	10	600	250	50	75	28	Pulsed RF
BLF182XRS	SOT1121B	10	600	250	50	75	28	Pulsed RF
BLF183XR	SOT1121A	10	600	350	50	75	28	Pulsed RF
BLF183XRS	SOT1121B	10	600	350	50	75	28	Pulsed RF
BLF574XR	SOT1214A	10	500	600	50	74.7	24	Pulsed RF
BLF574XRS	SOT1214B	10	500	600	50	74.7	24	Pulsed RF
BLF184XRG	SOT1214C	10	600	700	50	73.5	23.9	Pulsed RF
BLP05H6700XR	SOT1138-2	10	600	700	50	75	26	Pulsed RF
BLP05H6700XRG	SOT1204-2	10	600	700	50	75	26	Pulsed RF
BLF184XR	SOT1214A	10	600	700	50	73.5	23.9	Pulsed RF
BLF184XRS	SOT1214B	10	600	700	50	73.5	23.9	Pulsed RF
BLF578	SOT539A	10	500	1200	50	75	26	CW
BLF578XR	SOT539A	10	500	1400	50	69	23.5	Pulsed RF
BLF578XRS	SOT539B	10	500	1400	50	69	23.5	Pulsed RF

3.6.5 Pallets and Modules

Type	Pallet Size	Weight	F _{min} (MHz)	F _{max} (MHz)	P _{peak} (W)	V _{DS} (V)	η _D (%)	G _p (dB)	Test signal
BLL6H1214P2S-250	5 x 12 cm	80	1200	1400	250	45	48	27	Pulsed RF
BPS9G2934X-400*	3.5 x 5.5 cm	85	2900	3400	400	32	43	12.5	Pulsed RF
BPS9G2933X-450*	3.5 x 5.5 cm	85	2900	3300	450	32	45	13.5	Pulsed RF
BPS9G3135X-400*	3.5 x 5.5 cm	85	3100	3500	450	32	44	12.5	Pulsed RF

* Check status in section 3.1, as this type is not yet released for mass production

3.7 Gallium Nitride (GaN) RF Power Devices

RF power transistor selection guide on www.ampleon.com/products/aerospace-and-defense/gan-devices
Easy-to-use parametric filters help you choose the right RF power transistor for your design

Device Naming Conventions for GaN Devices

C	L	F	1G	0040	S	50	P
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P: Push-pull indicator, P = push-pull type; no P means single-ended transistor

2 to 1500: nominal P3dB in Watts: eg 50 = 50 W

S earless type, S = earless; no S means eared package

35 to 60: Upper frequency, 10x GHz value: 35 = 3.5 GHz; 60 = 6.0 GHz

00 to 40: Lower frequency, 10x GHz value: 00 = 0 GHz or DC; 40 = 4.0 GHz

1G: Technology generation: 1G = 1st generation

F: Package style: F = ceramic, P = overmolded plastic

L: High-frequency power transistor

C: Primary material identifier: C = wide band-gap compound materials, eg GaN

Type	Package	F _{min} (MHz)	F _{max} (MHz)	P _{L(1dB)} (W)	V _{DS} (V)	η _D (%)	G _o (dB)	Test signal
CLF1G0060-10	SOT1227A	0	6000	10	50	48.2	17.8	Pulsed RF @ 500 MHz
CLF1G0060S-10	SOT1227B	0	6000	10	50	48.2	17.8	Pulsed RF @ 500 MHz
CLF1G0060-30	SOT1227A	0	6000	30	50	61	16.6	Pulsed RF @ 500 MHz
CLF1G0060S-30	SOT1227B	0	6000	30	50	61	16.6	Pulsed RF @ 500 MHz
CLF1G0035-50	SOT467C	0	3500	50	50	65	12	Pulsed RF @ 500 MHz
CLF1G0035S-50	SOT467B	0	3500	50	50	65	12	Pulsed RF @ 500 MHz
CLF1G0035-100P	SOT1228A	0	3500	100	50	54.4	14.4	1-Tone pulsed @ 2600 MHz
CLF1G0035S-100P	SOT1228B	0	3500	100	50	54.4	14.4	1-Tone pulsed @ 2600 MHz
CLF1G0035-100	SOT467C	0	3500	100	50	67.4	15.5	Pulsed RF @ 500 MHz
CLF1G0035S-100	SOT467B	0	3500	100	50	67.4	15.5	Pulsed RF @ 500 MHz
CLF1G0035-200P	SOT1228A	0	3500	200	50	48	14	1-Tone pulsed @ 2000 MHz
CLF1G0035S-200P	SOT1228B	0	3500	200	50	48	14	1-Tone pulsed @ 2000 MHz



Supporting Best-Possible Application Results

4. Design Support

Product Selection on Ampleon.com

Every product has its own webpage on the Ampleon website. Pages can be accessed in several ways: by product tree, by application area or simply typing '<product name>' (e.g. "CLF1G0035S-200P") in the browser's search bar.

Product Tree and Parametric Search

Our online product tree (www.ampleon.com/products) categorizes the product by function. The parametric search tool allows you to refine the selection based on performance requirements.

Application Area

To find out what Ampleon offers in each application area, use www.ampleon.com/applications.

Documentation

Ampleon provides a complete library of technical and support documentation, from application notes and user guides to data sheets and simulation models. You can access this documentation from specific product pages and also search for it on www.ampleon.com/support/Documentation.

Simulation Tools

To help you evaluate our products for your specific application, Ampleon offers various simulation tools. For more information see section 4.1.

Demonstration Boards and Samples

Demonstration board and evaluation samples are available for all products to build and evaluate prototypes. To obtain a demonstration board or order small quantities of products, please contact your local Ampleon representative or authorized distributor (visit www.ampleon.com/about/distribution-partners).

RF Power Lifetime Calculator

The RF Power Lifetime Calculator enables an interactive estimation of our LDMOS device lifetime. Median-Time-to-Failure (MTF), the time that 50 % of the population has failed, is calculated as a function of junction temperature of the device, assuming electromigration as the wear-out failure mechanism. This allows RF design engineers to optimize thermal characteristics of their projects to generate an optimum system level solution. The online selection and calculation process will also eliminate the need to browse through large amounts of product information to quickly find a specific RF power transistor and its performance characteristics.

The RF Power Lifetime Calculator is available on www.ampleon.com/support/rf-power-lifetime-calculator and is linked to product pages (where applicable).

Product Longevity

Ampleon product longevity program ensures a stable supply of products for your embedded designs. Participating products are available for a minimum of 10 years as of product launch and are supported by standard end-of-life notification policies.

Updates are available in PDF format at: www.ampleon.com/documents/other-type/Ampleon_Longevity_Overview.pdf

Additional Support

For additional support please contact your local Ampleon sales representative or authorized distributor.

You can also submit a question using the web form: www.ampleon.com/contact.

4.1 Simulation Models

Updates of this overview are available in PDF format at:

www.ampleon.com/dam/jcr:9c32341a-eb3e-4e4e-83f6-a257d8b73144/Ampleon_Model_Overview.pdf

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2015	ADS-2016	Library manual	Simulation example				
BLA0912-250						36V_150mA			
BLA6G1011-200R				Available					
BLA6G1011L-200RG	→	→	Available						
BLA6G1011LS-200RG	→	→	Available						
BLA6H0912-500	→	→	Available						
BLA6H0912L-1000	→	→	Available	Available					
BLA6H0912LS-1000	→	→	Available	Available					
BLA6H1011-600	→	→	Available						
BLA8G1011L-300	→	Available							
BLA8G1011LS-300	→	Available							
BLA8H0910L-500	→	→	Available						
BLA8H0910LS-500	→	→	Available						
BLA9G1011L-300	→	→	Available						
BLA9G1011LS-300	→	→	Available						
BLC10G20LS-240PWT	→	→	Available						
BLC10G22LS-240PVT	→	→	Available						
BLC10M6XS200	→	→	Available						
BLC2425M8LS300P	→	Available							
BLC2425M9LS250	→	→	Available						
BLC8G20LS-310AV	→	→	Available	Available					
BLC8G20LS-400AV	→	Available							
BLC8G22LS-450AV	→	→	Available	Available					
BLC8G24LS-240AV	→	→	Available						
BLC8G24LS-241AV	→	→	Available						
BLC8G27LS-180AV	→	→	Available						
BLC8G27LS-240AV	→	→	Available						
BLC8G27LS-245AV	→	→	Available						
BLC8G27LS-60AV	→	→	Available	Available					
BLC8G27LS-60AVH	→	→	Available	Available					
BLC9G15LS-400AVT	→	→	Available	Available					
BLC9G15XS-400AVT	→	→	Available	Available					
BLC9G20LS-120V	→	→	Available						
BLC9G20LS-160PV	→	→	Available						
BLC9G20LS-240PV	→	→	Available						
BLC9G20LS-361AVT	→	→	Available	Available					
BLC9G20LS-470AVT	→	→	Available						
BLC9G20XS-160AV	→	→	Available						
BLC9G20XS-400AVT	→	→	Available						
BLC9G22XS-400AVT	→	→	Available	Available					

4.1 Simulation Models (continued)

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2015	ADS-2016	Library manual	Simulation example				
BLC9G27LS-151AV	→	→	Available						
BLD6G22L-50				Available					
BLD6G22LS-50				Available					
BLF0910H6L500	→	→	Available						
BLF0910H6LS500	→	→	Available						
BLF1043						28V_50mA			
BLF1046						28V_300mA			
BLF145						14V_250mA	28V_250mA		
BLF147						14V_1000mA	28V_1000mA		
BLF1721M8LS200				Available					
BLF174XR	→	→	Available						
BLF174XRS	→	→	Available						
BLF175						25V_150mA	50V_150mA		
BLF177						25V_100mA	50V_100mA		
BLF178XR	→	→	Available						
BLF178XRS	→	→	Available						
BLF182XR	→	→	Available	Available					
BLF182XRS	→	→	Available	Available					
BLF183XR	→	→	Available	Available					
BLF183XRS	→	→	Available	Available					
BLF184XR	→	→	Available	Available					
BLF184XRS	→	→	Available	Available					
BLF188XR	→	→	Available	Available					
BLF188XRS	→	→	Available	Available					
BLF202						6.25V_20mA	12.5V_20mA		
BLF242						14V_10mA	28V_10mA		
BLF2425M7L250P	→	→	Available	Available					
BLF2425M7LS250P	→	→	Available	Available					
BLF2425M9L30	→	→	Available						
BLF2425M9LS140	→	→	Available						
BLF2425M9LS30	→	→	Available						
BLF244						12.5V_25mA	14V_25mA	28V_25mA	
BLF245						12.5V_50mA	14V_50mA	28V_50mA	
BLF246						14V_50mA	14V_100mA	28V_50mA	28V_100mA
BLF248						14V_250mA	28V_250mA		
BLF25M612	→	Available							
BLF25M612G	→	→	Available						
BLF278						25V_500mA	50V_500mA		
BLF346						14V_3000mA	28V_3000mA		
BLF368						14V_250mA	16V_250mA	28V_250mA	35V_250mA
BLF3G21-30						26V_450mA			
BLF404						6.25V_50mA	12.5V_50mA		
BLF521						6.25V_10mA	12.5V_10mA		
BLF542						14V_10mA	14V_50mA	28V_10mA	28V_50mA
BLF544						14V_40mA	28V_40mA		
BLF548						14V_160mA	28V_160mA		
BLF571	→	→	Available						
BLF573	→	→	Available						
BLF573S	→	→	Available						
BLF574	→	→	Available						
BLF574XR	→	→	Available						
BLF574XRS	→	→	Available						
BLF578	→	→	Available						
BLF578XR	→	→	Available						
BLF578XRS	→	→	Available						
BLF640	→	→	Available						
BLF642	→	→	Available	Available					
BLF644P				Available					
BLF645	→	→	Available						

4.1 Simulation Models (continued)

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2015	ADS-2016	Library manual	Simulation example				
BLF647P	→	→	Available						
BLF647PS	→	→	Available						
BLF6G10-200RN	→	→	Available						
BLF6G10LS-200RN	→	→	Available						
BLF6G13L-250P				Available					
BLF6G13LS-250P				Available					
BLF6G22L-40P				Available					
BLF6G22LS-40P				Available					
BLF6G27L-40P				Available					
BLF6G27LS-40P				Available					
BLF6G38-100	→	→	Available						
BLF6G38-10G	→	→	Available						
BLF6G38-50	→	→	Available						
BLF6G38LS-100	→	→	Available						
BLF6G38LS-50	→	→	Available						
BLF6H10L-160	→	→	Available	Available					
BLF6H10LS-160	→	→	Available	Available					
BLF7G20L-90P				Available					
BLF7G20LS-90P				Available					
BLF7G22L-130	→	→	Available						
BLF7G22LS-130	→	→	Available						
BLF7G24L-100	→	→	Available						
BLF7G24LS-100	→	→	Available						
BLF7G27L-140	→	→	Available						
BLF7G27LS-140	→	→	Available						
BLF871	→	→	Available						
BLF871S	→	→	Available						
BLF881	→	→	Available						
BLF881S	→	→	Available						
BLF884P	→	→	Available	Available					
BLF884PS	→	→	Available	Available					
BLF888A	→	→	Available						
BLF888AS	→	→	Available						
BLF888B	→	→	Available						
BLF888BS	→	→	Available						
BLF888D	→	→	Available						
BLF888DS	→	→	Available						
BLF888E				Available					
BLF888ES				Available					
BLF8G09LS-400PW	→	→	Available						
BLF8G10LS-300P	→	→	Available						
BLF8G19LS-170BV	→	→	Available						
BLF8G20LS-140GV	→	→	Available						
BLF8G20LS-160V	→	→	Available						
BLF8G20LS-200V				Available					
BLF8G20LS-400PGV	→	→	Available						
BLF8G22LS-140	→	→	Available						
BLF8G22LS-160BV	→	→	Available						
BLF8G22LS-205V	→	→	Available						
BLF8G22LS-240	→	→	Available	Available					
BLF8G24L-200P	→	→	Available						
BLF8G24LS-100GV	→	→	Available						
BLF8G24LS-150GV	→	→	Available						
BLF8G24LS-200P	→	→	Available						
BLF8G27LS-100GV	→	→	Available						
BLF8G27LS-100P	→	→	Available						
BLF8G27LS-140V	→	→	Available						
BLF8G27LS-150GV	→	→	Available						
BLF8G38LS-75V	→	→	Available						

4.1 Simulation Models (continued)

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2015	ADS-2016	Library manual	Simulation example				
BLF988	→	→	Available	Available					
BLF988S	→	→	Available	Available					
BLF9G38LS-90P	→	→	Available	Available					
BLL6H0514-25	→	→	Available						
BLL6H0514L-130	→	→	Available						
BLL6H0514LS-130	→	→	Available						
BLL6H1214-500	→	→	Available						
BLL6H1214L-250	→	→	Available						
BLL6H1214LS-250	→	→	Available						
BLL6H1214LS-500	→	→	Available						
BLL8H0514-25	→	→	Available						
BLL8H0514L-130	→	→	Available						
BLL8H0514LS-130	→	→	Available						
BLL8H1214L-250	→	→	Available						
BLL8H1214L-500	→	→	Available						
BLL8H1214LS-250	→	→	Available						
BLL8H1214LS-500	→	→	Available						
BLM7G1822S-20PB				Available					
BLM7G1822S-20PBG	→	Available		Available					
BLM7G1822S-40PBG				Available					
BLM8G0710S-30PB				Available					
BLP05H6110XR	→	→	Available	Available					
BLP05H6150XR	→	→	Available	Available					
BLP05H6250XR	→	→	Available						
BLP05H6350XR	→	→	Available	Available					
BLP05H635XR	→	→	Available	Available					
BLP05H6700XR	→	→	Available						
BLP05H6700XRG	→	→	Available						
BLP05H675XR	→	→	Available	Available					
BLP05M7200	→	→	Available						
BLP10H603	→	→	Available						
BLP10H605	→	→	Available	Available					
BLP10H610	→	→	Available	Available					
BLP10H6120P	→	→	Available						
BLP10H660P	→	→	Available						
BLP10H690P	→	→	Available						
BLP15M7160P	→	→	Available	Available					
BLP27M810	→	→	Available	Available					
BLP35M805	→	→	Available						
BLP7G07S-140P				Available					
BLP7G22-05	→	→	Available						
BLP7G22-10	→	→	Available	Available					
BLP8G10S-270PW	→	→	Available	Available					
BLP8G10S-45PG	→	→	Available						
BLP8G20S-80P	→	→	Available						
BLP8G21S-160PV	→	→	Available						
BLP8G27-10	→	→	Available	Available					
BLP8G27-5	→	→	Available	Available					
BLS6G2735L-30	→	→	Available						
BLS6G2735LS-30	→	→	Available						
BLS6G3135-120	→	→	Available						
BLS6G3135-20	→	→	Available						
BLS6G3135S-120	→	→	Available						
BLS6G3135S-20	→	→	Available						
BLS7G2729L-350P	→	→	Available						
BLS7G2729LS-350P	→	→	Available						
BLS7G2730L-200P	→	→	Available						
BLS7G2730LS-200P	→	→	Available						
BLS8G2731L-400P	→	Available							

4.1 Simulation Models (continued)

Type	ADS model			Microwave Office® Model		S-parameter data			
	ADS-2012	ADS-2015	ADS-2016	Library manual	Simulation example				
BLS8G2731LS-400P	→	Available							
BLS9G2729L-350	→	→	Available						
BLS9G2729LS-350	→	→	Available						
BLS9G2731L-400	→	→	Available	Available					
BLS9G2731LS-400	→	→	Available	Available					
BLS9G2735L-50	→	→	Available	Available					
BLS9G2735LS-50	→	→	Available	Available					
BLS9G2934L-400	→	→	Available	Available					
BLS9G2934LS-400	→	→	Available	Available					
BLS9G3135L-400	→	→	Available	Available					
BLS9G3135LS-400	→	→	Available	Available					
CLF1G0035-100	→	→	Available	Available	50V_330mA				
CLF1G0035-100P				Available	50V_340mA				
CLF1G0035-200P	→	→	Available		50V_640mA				
CLF1G0035-50	→	→	Available	Available	50V_150mA				
CLF1G0035S-100	→	→	Available	Available	50V_330mA				
CLF1G0035S-100P				Available	50V_340mA				
CLF1G0035S-200P	→	→	Available		50V_640mA				
CLF1G0035S-50	→	→	Available	Available	50V_150mA				
CLF1G0060-10	→	→	Available	Available	50V_20mA				
CLF1G0060-30	→	→	Available	Available	50V_50mA				
CLF1G0060S-10	→	→	Available	Available	50V_20mA				
CLF1G0060S-30	→	→	Available	Available	50V_50mA				

5. Replacements

Ampleon Discontinued Types versus Ampleon Replacement Types in Alphabetical Order by Discontinued Type

Ampleon replacement type = same package

Ampleon functional replacement type = same functional replacement in a different package

Ampleon discontinued type	Package	Ampleon replacement type	Ampleon functional replacement type
BLA0912-250	SOT502A	-	BLA6H0912-500/BLA6H0912L-1000
BLA0912-250R	SOT502A	-	BLA6H0912-500/BLA6H0912L-1000
BLA1011-10	SOT467C	-	BLL8H0514-25
BLA1011-2	SOT538A	-	BLL8H0514-25
BLA1011-200	SOT502A	-	BLA6G1011LS-200R
BLA1011-200R	SOT502A	-	BLA6G1011LS-200R
BLA1011-300	SOT957A	-	BLA8G1011L-200
BLA1011S-200	SOT502B	-	BLA6G1011LS-200R
BLA1011S-200R	SOT502B	-	BLA6G1011LS-200R
BLC8G24LS-240AV	SOT1252-1	BLC8G24LS-241AV	-
BLC8G27LS-245AV	SOT1251-2	BLC8G27LS-240AV	-
BLC9G27LS-150AV	SOT1275-1	BLC9G27LS-151AV	-
BLD6G21L-50	SOT1130A	-	BLM8D1822S-50PBG
BLD6G21LS-50	SOT1130B	-	BLM8D1822S-50PBG
BLD6G22L-50	SOT1130A	-	BLM8D1822S-50PBG
BLD6G22LS-50	SOT1130B	-	BLM8D1822S-50PBG
BLF1043	SOT538A	-	BLP27M810
BLF1046	SOT467C	-	BLF642
BLF145	SOT123A	-	BLF642/BLP05H635XR
BLF147	SOT121B	-	BLP647P/BLP05H6150XR
BLF175	SOT123A	-	BLF182XR/BLP05H6150XR
BLF177	SOT121B	-	BLF182XR/BLP05H6150XR
BLF1822-10	SOT467C	-	BLP8G27-10
BLF2043	SOT538A	-	BLP8G27-10
BLF2043F	SOT467C	-	BLP27M810
BLF2045	SOT467C	-	
BLF242	SOT123A	-	BLP35M805
BLF244	SOT123A	-	BLF640/BLF642
BLF245	SOT123A	-	BLF642/BLP05H635XR
BLF245B	SOT279A	-	BLF642/BLP05H635XR
BLF246	SOT121B	-	BLF645/BLF642
BLF246B	SOT161A	-	BLF645/BLF642
BLF248	SOT262A1	-	BLF183XR/BLP05H6350XR
BLF278	SOT262A1	-	BLF183XR/BLP05H6350XR
BLF278/01	SOT262A1	-	BLF183XR/BLP05H6350XR
BLF346	SOT119A	-	BLF642/BLP05H635XR
BLF368	SOT262A1	-	BLF183XR/BLP05H6350XR
BLF369	SOT800-2	-	BLF184XR/BLP05H6700XR
BLF3G21-30	SOT467C	-	BLF642/BLP27M810
BLF3G21-6	SOT538A	-	BLP35M805
BLF3G22-30	SOT608A	-	
BLF404	SOT409A	-	BLP10H603BLP10H605//BLP35M805
BLF521	SOT172D	-	BLP10H603/BLP35M805
BLF542	SOT171A	-	BLP35M805
BLF544	SOT171A	-	BLF642/BLP05H635XR
BLF546	SOT268A	-	BLF645
BLF548	SOT262A2	-	BLF647P/BLP05H6150XR
BLF647	SOT540A	-	BLF647P/BLP05H6150XR/BLP10H6120P
BLF6G10-135RN	SOT502A	-	BLP8G10S-270PW
BLF6G10-160RN	SOT502A	BLF8G10L-160	-

Ampleon Discontinued Types versus Ampleon Replacement Types in Alphabetical Order by Discontinued Type

Ampleon replacement type = same package

Ampleon functional replacement type = same functional replacement in a different package

Ampleon discontinued type	Package	Ampleon replacement type	Ampleon functional replacement type
BLF6G10-200RN	SOT502A	-	BLP8G10S-200P
BLF6G10-45	SOT608A	-	BLP8G10S-45P
BLF6G10L-260PRN	SOT539A	-	BLP8G10S-270PW
BLF6G10L-40BRN	SOT1112A	-	BLP8G10S-45P
BLF6G10LS-135RN	SOT502B	-	BLF8G10LS-160
BLF6G10LS-160RN	SOT502B	-	BLF8G10LS-160
BLF6G10LS-260PRN	SOT539B	-	BLP8G10S-270PW
BLF6G10S-45	SOT608B	-	BLP8G10S-45P
BLF6G15L-250PBRN	SOT1110A	-	BLC9G15XS-400AVT
BLF6G15L-40BRN	SOT1112A	-	BLM7G1822S-40PB
BLF6G15L-40RN	SOT1135A	-	BLM7G1822S-40PB
BLF6G15LS-40RN	SOT1135B	-	BLM7G1822S-40PB
BLF6G20-110	SOT502A	-	BLC9G20LS-120V
BLF6G20-180PN	SOT539A	-	BLC9G20LS-160V
BLF6G20-180RN	SOT502A	-	BLC9G20LS-160V
BLF6G20-230PRN	SOT539A	-	BLF8G20LS-230V
BLF6G20-40	SOT608A	-	BLM7G1822S-40PB
BLF6G20-75	SOT502A	-	BLM7G1822S-80PB
BLF6G20LS-110	SOT502B	-	BLC9G20LS-120V
BLF6G20LS-140	SOT502B	-	BLC9G20LS-160V
BLF6G20LS-180RN	SOT502B	-	BLC9G20LS-160V
BLF6G20LS-75	SOT502B	-	BLM7G1822S-40PB
BLF6G20S-45	SOT608B	-	BLM7G1822S-80PB
BLF6G22-180PN	SOT539A	-	BLF8G22LS-220
BLF6G22-180RN	SOT502A	-	BLF8G22LS-220
BLF6G22L-40BN	SOT1112A	-	BLM7G1822S-40PB
BLF6G22L-40P	SOT1121A	-	BLM7G1822S-40PB
BLF6G22LS-130	SOT502B	-	BLF8G22LS-140
BLF6G22LS-180PN	SOT539B	-	BLF8G22LS-200V
BLF6G22LS-180RN	SOT502B	-	BLF8G22LS-220
BLF6G22LS-40BN	SOT1112B	-	BLM7G1822S-40PB
BLF6G22LS-75	SOT502B	-	BLM7G1822S-80PB
BLF6G22S-45	SOT608B	-	BLM7G1822S-40PB
BLF6G27-10	SOT975B	-	BLP8G27-10
BLF6G27-45	SOT608A	-	BLF6G27LS-40P
BLF6G27L-40P	SOT1121A	-	BLF6G27LS-40P
BLF6G27LS-135	SOT502B	BLF8G27LS-140	-
BLF6G27LS-50BN	SOT1112B	-	BLF6G27LS-40P
BLF6G27S-45	SOT608B	-	BLF6G27LS-40P
BLF6G38-100	SOT502A	-	BLF9G38LS-90P
BLF6G38-25	SOT608A	-	BLF6G38S-25
BLF6G38-50	SOT502A	-	BLF6G38LS-50
BLF6G38LS-100	SOT502B	-	BLF9G38LS-90P
BLF6H10L-160	SOT467C	-	BLF6H10LS-160
BLF7G10L-250	SOT502A	-	BLP8G10S-270PW
BLF7G15LS-200	SOT502B	-	BLC9G15LS-400AVT
BLF7G15LS-300P	SOT539B	-	BLC9G15LS-400AVT
BLF7G20L-200	SOT502A	-	BLF8G20LS-200V
BLF7G20L-250P	SOT539A	-	BLC10G20LS-240PV T
BLF7G20L-90P	SOT1121A	-	BLM7G1822s-80PB
BLF7G20LS-140P	SOT1121B	-	BLC8G21LS-160AV

Ampleon Discontinued Types versus Ampleon Replacement Types in Alphabetical Order by Discontinued Type

Ampleon replacement type = same package

Ampleon functional replacement type = same functional replacement in a different package

Ampleon discontinued type	Package	Ampleon replacement type	Ampleon functional replacement type
BLF7G21L-160P	SOT1121A	-	BLC8G21LS-160AV
BLF7G21LS-160	SOT1121B	BLP8G21S-160PV	BLC9G20LS-160V
BLF7G22L-130	SOT502A	-	BLF8G22LS-140
BLF7G22L-160	SOT502A	-	BLC9G22LS-160VT
BLF7G22L-200	SOT502A	-	BLF8G22LS-205V
BLF7G22L-250P	SOT539A	-	BLC10G22LS-240PVT
BLF7G22LS-130	SOT502B	-	BLF8G22LS-140
BLF7G22LS-160	SOT502B	-	BLC9G22LS-160VT
BLF7G24L-100	SOT502A	-	BLF8G24LS-100
BLF7G24L-140	SOT502A	-	BLF8G24LS-140
BLF7G24L-160P	SOT539A	-	BLC9G27LS-151AV
BLF7G27L-100	SOT502A	-	BLF8G27LS-100
BLF7G27L-140	SOT502A	-	BLF8G27LS-140
BLF7G27L-150P	SOT539A	-	BLC9G27LS-151AV
BLF7G27L-200PB	SOT1110A	-	BLC8G27LS-210PV
BLF7G27L-75P	SOT1121A	-	BLC8G27LS-60AV
BLF7G27L-90P	SOT1121A	-	BLC8G27LS-100AV
BLF7G27LS-150P	SOT539B	-	BLC9G27LS-151AV
BLF7G27LS-75P	SOT1121B	-	BLC8G27LS-60AV
BLF7G27LS-90P	SOT1121B	-	BLC8G27LS-100AV
BLF861A	SOT540A	-	BLF888A/BLF888B
BLF872	SOT800-1	-	BLF888A/BLF888B
BLF878	SOT979A	-	BLF888A/BLF888B
BLF888	SOT979A	-	BLF888A/BLF888B
BLF8G20LS-140GV	SOT1244C	-	BLF9G20LS-160V
BLF8G20LS-140V	SOT1244B	-	BLF9G20LS-160V
BLF8G20LS-200V	SOT1120B	-	BLFG20LS-230V
BLF8G20LS-260A	SOT539B	-	BLC8G20LS-310AV
BLF8G22LS-160BV	SOT1120B	-	BLC9G22LS-160VT
BLF8G24L-200P	SOT539A	-	BLC8G24LS-241AV
BLF8G24LS-200P	SOT539B	-	BLC8G24LS-241AV
BLF8G27LS-100P	SOT1121B	-	BLC8G27LS-100AV
BLL1214-250	SOT502A	-	BLL6G1214L-250
BLL1214-250R	SOT502A	-	BLL6G1214L-250
BLL1214-35	SOT467C	-	BLL8H0514-25
BLL6G1214LS-250	SOT502B	-	BLL6G1214L-250
BLM6G10-30	SOT834-1	-	BLM8G0710S-30PB
BLM6G10-30G	SOT822-1	-	BLM8G0710S-30PB
BLM6G22-30	SOT834-1	-	BLM7G1822S-40PB
BLM6G22-30G	SOT822-1	-	BLM7G1822S-40PBG
BLM7G22S-60PBG	SOT1212-1	-	BLM8D1822S-50PBG
BLM7G24S-30BG	SOT1212-1	-	BLM9D2327-25B
BLS2731-110	SOT423A	-	BLS6G2731-120
BLS2731-20	SOT445C	-	BLS6G2735L-30
BLS2731-50	SOT422A	-	BLS6G2735L-30
BLS2933-100	SOT502A	-	BLS6G2933S-130
BLW96/01	SOT121B	-	BLF182XR/BLP05H6250XR
MX0912B251Y	SOT439A	-	BLL6G1214L-250
MX0912B351Y	SOT439A	-	BLL6G1214L-250
MZ0912B100Y	SOT443A	-	BLL8H0514L-130
MZ0912B50Y	SOT443A	-	BLL8H0514-25

6. Packaging and Packing

6.1 Packaging

Ampleon package overview: www.ampleon.com/packages

Air-Cavity Ceramic (ACC) Packages (L x W x H (mm))*

					
SOT467B (9.7 x 5.8 x max 4.7 (mm))	SOT467C (20.3 x 5.8 x max 4.7 (mm))	SOT502A (34.0 x 9.8 x max 4.7 (mm))	SOT502B (20.6 x 9.8 x max 4.7 (mm))	SOT502C (20.6 x 9.8 x max 4.7 (mm))	SOT502D (34.0 x 9.8 x max 4.7 (mm))
					
SOT502F (34.0 x 9.8 x max 4.7 (mm))	SOT538A (5.5 x 4.1 x max 2.4 (mm))	SOT539A (41.2 x 10.2 x max 4.7 (mm))	SOT539B (32.3 x 10.2 x max 4.7 (mm))	SOT540A (34 x 9.8 x max 5.8 (mm))	SOT608A (20.3 x 10.2 x max 4.6 (mm))
					
SOT608B (10.2 x 10.2 x max 4.6 (mm))	SOT634A (34 x 13.7 x max 4.8 (mm))	SOT975B (7.1 x 6.9 x max 3.6 (mm))	SOT975C (7.1 x 6.9 x max 3.6 (mm))	SOT922-1 (17.6 x 9.4 x max 4.2 (mm))	SOT1120B (20.6 x 9.8 x max 4.8 (mm))
					
SOT1121A (34.0 x 9.8 x max 4.7 (mm))	SOT1121B (20.6 x 9.8 x max 4.7 (mm))	SOT1121E (20.6 x 9.8 x max 4.7 (mm))	SOT1135A (20.3 x 9.8 x max 4.7 (mm))	SOT1135B (9.8 x 9.8 x max 4.7 (mm))	SOT1214A (34.0 x 9.8 x max 4.7 (mm))
					
SOT1214B (20.6 x 9.8 x max 4.7 (mm))	SOT1214C (34 x 9.8 x max 4.7 (mm))	SOT1227A (14.0 x 4.1 x max 3.7 (mm))	SOT1227B (5.1 x 4.1 x max 3.7 (mm))	SOT1228A (29.0 x 5.8 x max 5.2 (mm))	SOT1228B (17.3 x 5.8 x max 5.2 (mm))
					
SOT1239B (20.6 x 9.8 x max 4.8 (mm))	SOT1242B (32.3 x 10.2 x max 5.5 (mm))	SOT1242C (32.3 x 10.2 x max 5.5 (mm))	SOT1244B (20.6 x 9.8 x max 4.8 (mm))	SOT1244C (20.6 x 9.8 x max 4.8 (mm))	SOT1248C (32.3 x 10.2 x max 5.5 (mm))

* Not drawn to scale

Air-Cavity Plastic (ACP) Packages (L x W x H (mm))*



SOT1250-1
(32.2 x 10.1 x max 4.5 (mm))



SOT1251-3
(32.2 x 10.1 x max 4.5 (mm))



SOT1252-7
(32.2 x 10.1 x max 4.5 (mm))



SOT1258-1
(32.2 x 10.1 x max 4.5 (mm))



SOT1258-3
(34.0 x 9.8 x max. 4.7 (mm))



SOT1258-7
(34.0 x 9.8 x max. 4.7 (mm))



SOT1270-1
(20.6 x 9.8 x max 3.7 (mm))



SOT1271-3
(20.6 x 9.8 x max 3.7 (mm))



SOT1273-7
(20.6 x 9.8 x max 3.7 (mm))



SOT1275-1
(20.6 x 9.8 x max 3.7 (mm))



SOT1275-3
(20.6 x 9.8 x max 3.7 (mm))

Overmolded Plastic (OMP) Packages (L x W x H (mm))*



SOT1138-2
(20.6 x 10 x max 3.9 (mm))



SOT1179-2
(6 x 4 x max 1 (mm))



SOT1204-2
(20.6 x 10 x max 3.9 (mm))



SOT1211-1
(20.6 x 10 x max 3.9 (mm))



SOT1211-2
(20.6 x 10 x max 3.9 (mm))



SOT1212-1
(20.6 x 10 x max 3.9 (mm))



SOT1212-2
(20.6 x 10 x max 3.9 (mm))



SOT1221-2
(20.6 x 10 x max 3.9 (mm))



SOT1223-2
(20.6 x 10 x max 3.9 (mm))



SOT1224-2
(20.6 x 10 x max 3.9 (mm))



SOT1352-1
(6 x 5 x max 1 (mm))



SOT1371-1
(6 x 4 x max 1 (mm))



SOT1462-1
(8 x 8 x max. 2.1 (mm))



SOT1462-3
(8 x 8 x max. 2.1 (mm))



SOT1482-1
(10.67 x 6.1 x max. 2.03 (mm))



SOT1483-1
(10.67 x 6.1 x max. 2.08 (mm))

* Not drawn to scale

6.2 Packing

Packing Quantities per Package with Relevant Ordering Codes

Package	Package dimensions (mm)	Packing quantity	Product 12NC ending	Packing method	Package family
SOT467B	9.7 x 5.8 x 4.7	60	112	Blister, tray	Air-Cavity Ceramic (ACC)
		400	118	Tape and reel	
SOT467C	20.3 x 5.8 x 4.7	60	112	Blister, tray	
SOT502A	34.0 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
		300	135	Reel	
SOT502B	20.6 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT502C	20.6 x 9.8 x 4.7	60	112	Blister, tray	
SOT502D	34.0 x 9.8 x 4.7	60	112	Blister, tray	
SOT502E	20.6 x 9.8 x 4.7	60	112	Blister, tray	
SOT502F	34.0 x 9.8 x 4.7	60	112	Blister, tray	
SOT538A	5.5 x 4.1 x 2.4	160	112	Blister, tray	
		500	135	Reel	
SOT539A	41.2 x 10.2 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT539B	32.3 x 10.2 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT540A	34.0 x 9.8 x 5.4	60	112	Blister, tray	
SOT608A	20.3 x 10.2 x 4.2	60	112	Blister, tray	
		300	135	Reel	
SOT608B	10.2 x 10.16 x 4.2	60	112	Blister, tray	
		100	118	Tape and reel	
		300	135	Reel	
SOT634A	34.0 x 13.7 x 4.8	60	112	Blister, tray	
SOT922-1	17.6 x 9.4 x 3.9	60	112	Blister, tray	
SOT975B	7.1 x 6.9 x 3.6	100	118	Tape and reel	
		180	112	Blister, tray	
SOT975C	7.1 x 6.9 x 3.6	100	118	Tape and reel	
		180	112	Blister, tray	
SOT1110A	41.2 x 10.2 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1110B	32.3 x 10.2 x 5.5	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1112A	20.3 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	

Packing Quantities per Package with Relevant Ordering Codes (continued)

Package	Package dimensions (mm)	Packing quantity	Product 12NC ending	Packing method	Package family
SOT1120B	20.6 x 9.8 x 4.8	60	112	Blister, tray	Air-Cavity Ceramic (ACC)
		100	118	Tape and reel	
		180	134	Reel	
SOT1121A	34.0 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1121B	20.6 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1121E	20.6 x 9.8 x 4.7	100	118	Tape and reel	
SOT1135A	20.3 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1135B	9.8 x 9.8 x 4.7	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1214A	34.0 x 9.8 x 4.7	60	112	Blister, tray	
SOT1214B	20.6 x 9.8 x 4.7	60	112	Blister, tray	
SOT1214C	20.6 x 9.8 x 4.7	96	127	Tube	
		100	118	Tape and reel	
SOT1227A	14.0 x 4.1 x 3.7	60	112	Blister, tray	
SOT1227B	5.1 x 4.1 x 3.7	60	112	Blister, tray	
SOT1228A	29.0 x 5.8 x 5.2	60	112	Blister, tray	
SOT1228B	17.3 x 5.8 x 5.2	60	112	Blister, tray	
SOT1239B	20.6 x 9.8 x 4.8	60	112	Blister, tray	
		60	115	Tape and reel	
		100	118	Tape and reel	
SOT1242B	32.3 x 10.2 x 5.5	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1242C	32.2 x 10.2 x 4.9	60	127	Tube	
		100	115	Tape and reel	
SOT1244B	20.6 x 9.8 x 4.8	60	112	Blister, tray	
		100	118	Tape and reel	
SOT1244C	20.6 x 9.8 x 4.8	96	127	Tube	
		100	118	Tape and reel	
SOT1248C	32.3 x 10.2 x 5.5	100	118	Tape and reel	
SOT1250-1	32.3 x 10.1 x 4.5	60	112	Blister, tray	Air-Cavity Plastic (ACP)
		100	118	Tape and reel	
SOT1251-2	32.3 x 10.1 x 4.5	60	517	Blister, tray	
		100	518	Tape and reel	
SOT1251-3	32.3 x 10.1 x 4.5	60	517	Blister, tray	
		100	518	Tape and reel	

Packing Quantities per Package with Relevant Ordering Codes (continued)

Package	Package dimensions (mm)	Packing quantity	Product 12NC ending	Packing method	Package family
SOT1252-1	32.3 x 10.1 x 4.5	60	112	Blister, tray	Air-Cavity Plastic (ACP)
		60	517	Blister, tray	
		100	118	Tape and reel	
		100	518	Tape and reel	
SOT1258-3	32.2 x 10.1 x 4.5	60	517	Blister, tray	
		100	518	Tape and reel	
SOT1258-7	32.2 x 10.1 x 4.5	60	517	Blister, tray	
		100	518	Tape and reel	
SOT1270-1	20.6 x 9.8 x 3.7	60	517	Blister, tray	
SOT1275-1	20.6 x 9.8 x 3.7	60	517	Blister, tray	
		100	518	Tape and reel	
SOT822-1	15.9 x 11.0 x 3.5	100	118	Tape and reel	Overmolded Plastic (OMP)
		180	127	Tube	
		500	135	Reel	
SOT1138-2	20.6 x 10.0 x 3.9	100	118	Tape and reel	
SOT1179-2	6.0 x 4.0 x 1.0	500	515	Reel	
SOT1204-2	20.6 x 10.0 x 3.9	100	518	Tape and reel	
SOT1211-2	20.6 x 10.0 x 3.9	100	118	Tape and reel	
SOT1212-2	20.6 x 10.0 x 3.9	100	518	Tape and reel	
SOT1221-2	20.6 x 10 x 3.9	100	518	Tape and reel	
SOT1223-2	20.6 x 10.0 x 3.9	100	118	Tape and reel	
SOT1224-2	20.6 x 10.0 x 3.9	100	518	Tape and reel	
SOT1352-1	6.0 x 5.0 x 1.0	60	531	Tape and reel	
		500	515	Reel	

6.3 Marking Codes

In general, device marking includes the part number, some manufacturing information and the Ampleon's logo. If packages are too small for the full-length part number, a shorter, coded part number (called the "marking code") is used instead. To save space, the marking code is used in place of the manufacturing-site code. The full-length part number is always printed on the packing label on the box or bulk-pack in which the devices are supplied.

Marking code	Type	Package
B1025	BLP10H603	SOT1352-1
B1025	BLP10H603	SOT1352-1
B1050	BLP10H605	SOT1352-1
B1050	BLP10H605	SOT1352-1
B1000	BLP10H610	SOT1352-1
B1000	BLP10H610	SOT1352-1
B2550	BLP25M705	SOT1179-2
B2500	BLP25M710	SOT1179-2
B27810	BLP27M810	SOT1371-1
B35805	BLP35M805	SOT1371-1
B2250	BLP7G22-05	SOT1179-2
B2200	BLP7G22-10	SOT1179-2
B2700	BLP8G27-10	SOT1371-1
B2750	BLP8G27-5	SOT1371-1

7. Abbreviations

A&D	Aerospace and Defense
AC	Alternating Current
ACC	Air-Cavity Ceramic package
ACP	Air-Cavity Plastic package
ASYM	ASYMmetrical design of Doherty (main and peak devices are different)
Bcst/ISM	Broadcast/Industrial, Scientific, Medical
Broadband	Broadband RF power GaN HEMT
CDMA	Code Division Multiple Access
CW	Continuous Wave
dB	decibel
DC	Direct Current
DEV	Development
EDGE	Enhanced Data Rates for GSM Evolution
FM	Frequency Modulation
Freq	Frequency
GaAs	Gallium Arsenide
GaN	Gallium Nitride
Gen	Generation
GHz	GigaHertz
GNSS	Global Navigation Satellite System
HD	High-Definition
HDTV	High-Definition Television
HEMT	High-Electron Mobility Transistor
HF	High Frequency (3 - 30 MHz)
HPA	High Power Amplifier
HVQFN	Plastic Thermally Enhanced Very thin Quad Flat package with no leads
IC	Integrated Circuit
ISM	Industrial, Scientific, and Medical (reserved frequency bands)
kW	kiloWatt
LDMOS	Laterally Diffused Metal-Oxide-Semiconductor
LTE	Long-Term Evolution
mA	milliamp
MHz	MegaHertz
MIMO	Multiple-input and multiple-output, a method for multiplying the capacity of a radio link using multiple transmit and receive antennas to exploit multipath propagation
MMIC	Monolithic Microwave Integrated Circuit
MRI	Magnetic Resonance Imaging
OMP	Overmolded Plastic
PA	Power Amplifier
PAD	Single-Package Asymmetric Doherty
RF	Radio Frequency
RFS	Released For Supply
RoHS	Restriction of Hazardous Substances
SOT	Small-Outline Transistor
SYM	Symmetrical design of Doherty (main and peak devices are the same type of transistor)
TDMA	Time Division Multiple Access
TD-SCDMA	Time Division-Synchronous Code Division Multiple Access
UHF	Ultra High Frequency (470 - 860 MHz)
UWB	Ultra-Wideband
V	Volt
VDMOS	Vertical Double-diffused Metal Oxide Semiconductor
VHF	Very High Frequency (30 - 300 MHz)
WCDMA	Wideband Code Division Multiple Access
WiFi	Wireless Fidelity
WiMAX	Worldwide Interoperability for Microwave Access
XR	eXtremely Rugged

8. Contact

We share the passion for RF technology which is what we radiate to our customers, suppliers and partners. Whether we are initiating, discovering, developing, designing, marketing or supporting, our work is ultimately aimed at delivering our best and achieving outstanding results.

While we strive for sharing information about our portfolio and our competence, you might still have questions or do need our support for your specific challenge.

Please feel free to contact our experts across the globe in a location closest to you (www.ampleon.com/about/worldwide-locations) by accessing our contact window (www.ampleon.com/contact) for topics related to sales inquiries, quality, application/simulation/modelling or other.



9. Product Index

Type	Portfolio section	Type	Portfolio section	Type	Portfolio section	Type	Portfolio section
BLA6G1011-200R	3.6	BLC9H10XS-60P	3.2	BLF642	3.3	BLF8G20LS-220	3.2
BLA6G1011L-200RG	3.6	BLC9H10XS-800P	3.2	BLF644P	3.3	BLF8G20LS-230V	3.2
BLA6G1011LS-200RG	3.6	BLF0910H6LS500	3.5	BLF645	3.3	BLF8G20LS-400PGV	3.2
BLA6H0912-500	3.6	BLF0910H6LS500	3.5	BLF647P	3.3	BLF8G20LS-400PV	3.2
BLA6H0912L-1000	3.6	BLF10H6600P	3.3	BLF647PS	3.3	BLF8G22LS-140	3.2
BLA6H0912LS-1000	3.6	BLF10H6600PS	3.3	BLF6G13L-250P	3.3	BLF8G22LS-200GV	3.2
BLA6H1011-600	3.6	BLF10M6135	3.3	BLF6G13LS-250P	3.3	BLF8G22LS-200V	3.2
BLA8G1011L-300	3.6	BLF10M6160	3.3	BLF6G13LS-250PG	3.3	BLF8G22LS-205V	3.2
BLA8G1011L-300G	3.6	BLF10M6200	3.3	BLF6G15L-500H	3.3	BLF8G22LS-220	3.2
BLA8G1011LS-300	3.6	BLF10M6LS135	3.3	BLF6G15LS-500H	3.3	BLF8G22LS-240	3.2
BLA8G1011LS-300G	3.6	BLF10M6LS160	3.3	BLF6G21-10G	3.2	BLF8G22LS-270	3.2
BLA8H0910L-500	3.6	BLF10M6LS200	3.3	BLF6G27LS-40P	3.2	BLF8G22LS-270GV	3.2
BLA8H0910LS-500	3.6	BLF1721M8LS200	3.4	BLF6G27LS-40PG	3.2	BLF8G22LS-270V	3.2
BLA9G1011L-300	3.6	BLF174XR	3.3	BLF6G38LS-50	3.2	BLF8G22LS-100GV	3.2
BLA9G1011L-300G	3.6	BLF174XRS	3.3	BLF6G38S-25	3.2	BLF8G24LS-100V	3.2
BLA9G1011LS-300	3.6	BLF178P	3.3	BLF7G10LS-250	3.2	BLF8G24LS-150GV	3.2
BLA9G1011LS-300G	3.6	BLF178XR	3.3	BLF7G20LS-200	3.2	BLF8G24LS-150V	3.2
BLC10G18XS-320AVT	3.2	BLF178XRS	3.3	BLF7G20LS-250P	3.2	BLF8G27LS-100	3.2
BLC10G20LS-240PWT	3.2	BLF182XR	3.3	BLF7G20LS-90P	3.2	BLF8G27LS-100GV	3.2
BLC10G22LS-240PVT	3.2	BLF182XRS	3.3	BLF7G22LS-200	3.2	BLF8G27LS-100V	3.2
BLC10M6XS200	3.5	BLF183XR	3.3	BLF7G22LS-250P	3.2	BLF8G27LS-140	3.2
BLC2425M8LS300P	3.5	BLF183XRS	3.3	BLF7G24LS-100	3.2	BLF8G27LS-140V	3.2
BLC2425M9LS250	3.5	BLF184XR	3.3	BLF7G24LS-140	3.2	BLF8G27LS-150GV	3.2
BLC2425M9LS700PV	3.5	BLF184XRG	3.3	BLF7G27LS-100	3.2	BLF8G27LS-150V	3.2
BLC8G09XS-400AVT	3.2	BLF184XRS	3.3	BLF7G27LS-140	3.2	BLF8G38LS-75V	3.2
BLC8G20LS-310AV	3.2	BLF188XR	3.3	BLF871	3.3	BLF988	3.6
BLC8G20LS-400AV	3.2	BLF188XRG	3.3	BLF871S	3.3	BLF988S	3.6
BLC8G21LS-160AV	3.2	BLF188XRS	3.3	BLF879P	3.3	BLF9G20LS-160V	3.2
BLC8G22LS-450AV	3.2	BLF189XRA	3.3	BLF879PS	3.3	BLF9G38-10G	3.2
BLC8G24LS-241AV	3.2	BLF189XRAS	3.3	BLF881	3.3	BLF9G38LS-90P	3.2
BLC8G27LS-100AV	3.2	BLF189XRB	3.3	BLF881S	3.3	BLL6G1214L-250	3.6
BLC8G27LS-140AV	3.2	BLF189XRBS	3.3	BLF882	3.3	BLL6H0514-25	3.6
BLC8G27LS-160AV	3.2	BLF2324M8LS200P	3.3	BLF882S	3.3	BLL6H0514L-130	3.6
BLC8G27LS-180AV	3.2	BLF2425M6L180P	3.5	BLF884P	3.3	BLL6H0514LS-130	3.6
BLC8G27LS-210PV	3.2	BLF2425M6LS180P	3.5	BLF884PS	3.3	BLL6H1214-500	3.6
BLC8G27LS-240AV	3.2	BLF2425M7L100	3.5	BLF888A	3.3	BLL6H1214L-250	3.6
BLC8G27LS-60AV	3.2	BLF2425M7L140	3.5	BLF888AS	3.3	BLL6H1214LS-250	3.6
BLC9G15LS-400AVT	3.2	BLF2425M7L250P	3.5	BLF888B	3.3	BLL6H1214LS-500	3.6
BLC9G15XS-400AVT	3.2	BLF2425M7LS100	3.5	BLF888BS	3.3	BLL6H1214P2S-250	3.6
BLC9G20LS-120V	3.2	BLF2425M7LS140	3.5	BLF888D	3.3	BLL8H0514-25	3.6
BLC9G20LS-160PV	3.2	BLF2425M7LS250P	3.5	BLF888DS	3.3	BLL8H0514L-130	3.6
BLC9G20LS-240PV	3.2	BLF2425M8L140	3.5	BLF888E	3.3	BLL8H0514LS-130	3.6
BLC9G20LS-361AVT	3.2	BLF2425M8LS140	3.5	BLF888ES	3.3	BLL8H1214L-250	3.6
BLC9G20LS-470AVT	3.2	BLF2425M9L30	3.5	BLF898	3.3	BLL8H1214L-500	3.6
BLC9G20XS-160AV	3.2	BLF2425M9LS140	3.5	BLF898S	3.3	BLL8H1214LS-250	3.6
BLC9G20XS-400AVT	3.2	BLF2425M9LS30	3.5	BLF8G09LS-270GW	3.2	BLL8H1214LS-500	3.6
BLC9G20XS-550AVT	3.2	BLF25M612	3.5	BLF8G09LS-270W	3.2	BLL9G1214L-600	3.6
BLC9G21LS-60AV	3.2	BLF25M612G	3.5	BLF8G09LS-400PGW	3.2	BLL9G1214LS-600	3.6
BLC9G22LS-160VT	3.2	BLF571	3.3	BLF8G09LS-400PW	3.2	BLM2425M7S60P	3.5
BLC9G22XS-400AVT	3.2	BLF573	3.3	BLF8G10L-160	3.2	BLM7G1822S-20PB	3.2
BLC9G24XS-170AV	3.2	BLF573S	3.3	BLF8G10LS-160	3.2	BLM7G1822S-20PBG	3.2
BLC9G27LS-151AV	3.2	BLF574	3.3	BLF8G10LS-160V	3.2	BLM7G1822S-40AB	3.2
BLC9G27XS-380AVT	3.2	BLF574XR	3.3	BLF8G10LS-270	3.2	BLM7G1822S-40ABG	3.2
BLC9H10XS-300P	3.2	BLF574XRS	3.3	BLF8G10LS-270GV	3.2	BLM7G1822S-40PB	3.2
BLC9H10XS-350A	3.2	BLF578	3.3	BLF8G10LS-270V	3.2	BLM7G1822S-40PBG	3.2
BLC9H10XS-400A	3.2	BLF578XR	3.3	BLF8G10LS-300P	3.2	BLM7G1822S-80AB	3.2
BLC9H10XS-400P	3.2	BLF578XRS	3.3	BLF8G19LS-170BV	3.2	BLM7G1822S-80ABG	3.2
BLC9H10XS-600A	3.2	BLF640	3.3	BLF8G20LS-160V	3.2	BLM7G1822S-80PB	3.2

Type	Portfolio section	Type	Portfolio section	Type	Portfolio section	Type	Portfolio section
BLM7G1822S-80PBG	3.2	BLP05H675XR	3.3	BLP8G27-5	3.2	BLS9G2731L-400	3.6
BLM8D1822-25B	3.2	BLP05H675XRG	3.3	BLP9G0722-20	3.2	BLS9G2731LS-400	3.6
BLM8D1822S-50PB	3.2	BLP05M7200	3.5	BLP9G0722-20G	3.2	BLS9G2735L-50	3.6
BLM8D1822S-50PBG	3.2	BLP10H603	3.3	BLP9H10S-30	3.2	BLS9G2735LS-50	3.6
BLM8G0710S-15PB	3.2	BLP10H605	3.3	BLS6G2731-120	3.6	BLS9G2934L-400	3.6
BLM8G0710S-15PBG	3.2	BLP10H610	3.3	BLS6G2731-6G	3.6	BLS9G2934LS-400	3.6
BLM8G0710S-30PB	3.2	BLP10H6120P	3.3	BLS6G2731S-120	3.6	BLS9G3135L-400	3.6
BLM8G0710S-30PBG	3.2	BLP10H6120PG	3.3	BLS6G2731S-130	3.6	BLS9G3135LS-400	3.6
BLM8G0710S-45AB	3.2	BLP10H630P	3.3	BLS6G2735L-30	3.6	BLU6H0410L-600P	3.6
BLM8G0710S-45ABG	3.2	BLP10H630PG	3.3	BLS6G2735LS-30	3.6	BLU6H0410LS-600P	3.6
BLM8G0710S-60PB	3.2	BLP10H660P	3.3	BLS6G2933S-130	3.6	BPS9G2933X-450	3.6
BLM8G0710S-60PBG	3.2	BLP10H660PG	3.3	BLS6G3135-120	3.6	BPS9G2934X-400	3.6
BLM8G1822-20B	3.2	BLP10H690P	3.3	BLS6G3135-20	3.6	BPS9G3135X-400	3.6
BLM9D2325-20AB	3.2	BLP10H690PG	3.3	BLS6G3135S-120	3.6	CLF1G0035-100	3.7
BLM9D2327-25B	3.2	BLP15M7160P	3.3	BLS6G3135S-20	3.6	CLF1G0035-100P	3.7
BLM9D2527-20AB	3.2	BLP25M705	3.3	BLS7G2325L-105	3.6	CLF1G0035-200P	3.7
BLP05H6110XR	3.3	BLP25M710	3.3	BLS7G2729L-350P	3.6	CLF1G0035-50	3.7
BLP05H6110XRG	3.3	BLP27M810	3.3	BLS7G2729LS-350P	3.6	CLF1G0035S-100	3.7
BLP05H6150XR	3.3	BLP35M805	3.3	BLS7G2730L-200P	3.6	CLF1G0035S-100P	3.7
BLP05H6150XRG	3.3	BLP7G22-05	3.2	BLS7G2730LS-200P	3.6	CLF1G0035S-200P	3.7
BLP05H6250XR	3.3	BLP7G22-10	3.2	BLS7G2933S-150	3.6	CLF1G0035S-50	3.7
BLP05H6250XRG	3.3	BLP8G05S-200	3.2	BLS7G3135L-350P	3.6	CLF1G0060-10	3.7
BLP05H6350XR	3.3	BLP8G05S-200G	3.2	BLS7G3135LS-200	3.6	CLF1G0060-30	3.7
BLP05H6350XRG	3.3	BLP8G10S-270PW	3.2	BLS7G3135LS-350P	3.6	CLF1G0060S-10	3.7
BLP05H635XR	3.3	BLP8G10S-45P	3.2	BLS8G2731L-400P	3.6	CLF1G0060S-30	3.7
BLP05H635XRG	3.3	BLP8G10S-45PG	3.2	BLS8G2731LS-400P	3.6		
BLP05H6700XR	3.3	BLP8G21S-160PV	3.2	BLS9G2729L-350	3.6		
BLP05H6700XRG	3.3	BLP8G27-10	3.2	BLS9G2729LS-350	3.6		

Notes

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