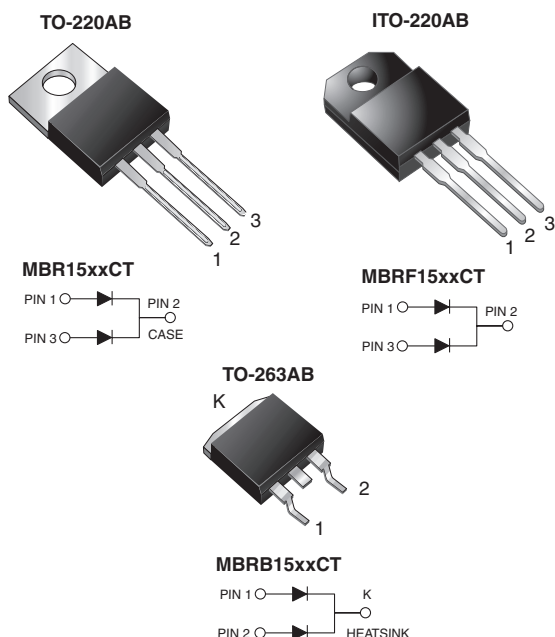


## Dual Common-Cathode Schottky Rectifier



### FEATURES

- Guardring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C (for TO-263AB package)
- Solder dip 260 °C, 40 s (for TO-220AB and ITO-220AB package)
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, dc-to-dc converters or polarity protection application.

### MECHANICAL DATA

**Case:** TO-220AB, ITO-220AB, TO-263AB

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**Polarity:** As marked

**Mounting Torque:** 10 in-lbs maximum

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	7.5 A x 2
$V_{RRM}$	35 V to 60 V
$I_{FSM}$	150 A
$V_F$	0.57 V, 0.65 V
$T_J$ max.	150 °C

### MAXIMUM RATINGS ( $T_C = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	MBR1535CT	MBR1545CT	MBR1550CT	MBR1560CT	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	50	60	V
Working peak reverse voltage	V <sub>RWM</sub>	35	45	50	60	V
Maximum DC blocking voltage	V <sub>DC</sub>	35	45	50	60	V
Maximum average forward rectified current at T <sub>C</sub> = 105 °C total device per diode	I <sub>F(AV)</sub>	15 7.5				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	150				A
Peak repetitive reverse surge current per diode at t <sub>p</sub> = 2.0 μs, 1 kHz	I <sub>RRM</sub>	1.0		0.5		A
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000				V/μs
Operating junction temperature range	T <sub>J</sub>	- 65 to + 150				°C

# MBR(F,B)1535CT thru MBR(F,B)1560CT

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MAXIMUM RATINGS ( $T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	MBR1535CT	MBR1545CT	MBR1550CT	MBR1560CT	UNIT
Storage temperature range	$T_{STG}$	- 65 to + 175				$^{\circ}\text{C}$
Isolation voltage (ITO-220AB only) from terminal to heatsink $t = 1\text{ min}$	$V_{AC}$	1500				V

ELECTRICAL CHARACTERISTICS (T <sub>C</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	MBR1535CT	MBR1545CT	MBR1550CT	MBR1560CT	UNIT
Maximum instantaneous forward voltage per diode <sup>(1)</sup>	I <sub>F</sub> = 7.5 A	T <sub>C</sub> = 25 °C	V <sub>F</sub>	-		0.75		V
	I <sub>F</sub> = 7.5 A	T <sub>C</sub> = 125 °C		0.57		0.65		
	I <sub>F</sub> = 15 A	T <sub>C</sub> = 25 °C		0.84		-		
	I <sub>F</sub> = 15 A	T <sub>C</sub> = 125 °C		0.72		-		
Maximum instantaneous reverse current at rated DC blocking voltage per diode <sup>(1)</sup>		T <sub>C</sub> = 25 °C T <sub>C</sub> = 125 °C	I <sub>R</sub>	0.1 15		1.0 50		mA

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ( $T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	MBR	MBRF	MBRB	UNIT
Maximum thermal resistance per diode	$R_{\theta JA}$ $R_{\theta JC}$	60 3.0	- 5.0	60 3.0	$^{\circ}\text{C/W}$

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AB	MBR1545CT-E3/45	1.85	45	50/tube	Tube
ITO-220AB	MBRF1545CT-E3/45	1.99	45	50/tube	Tube
TO-263AB	MBRB1545CT-E3/45	1.35	45	50/tube	Tube
TO-263AB	MBRB1545CT-E3/81	1.35	81	800/reel	Tape reel
TO-220AB	MBR1545CTHE3/45 <sup>(1)</sup>	1.85	45	50/tube	Tube
ITO-220AB	MBRF1545CTHE3/45 <sup>(1)</sup>	1.99	45	50/tube	Tube
TO-263AB	MBRB1545CTHE3/45 <sup>(1)</sup>	1.35	45	50/tube	Tube
TO-263AB	MBRB1545CTHE3/81 <sup>(1)</sup>	1.35	81	800/reel	Tape reel

**Note:**

(1) Automotive grade AEC Q101 qualified



## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

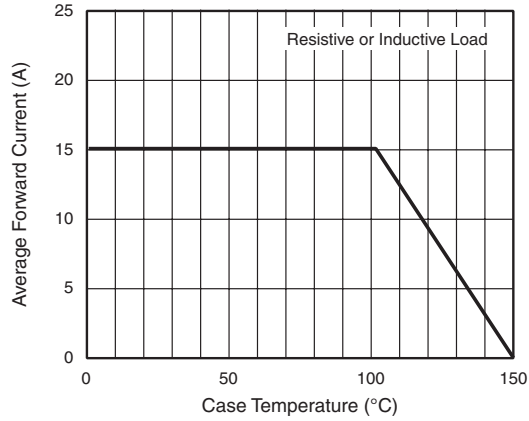


Figure 1. Forward Current Derating Curve

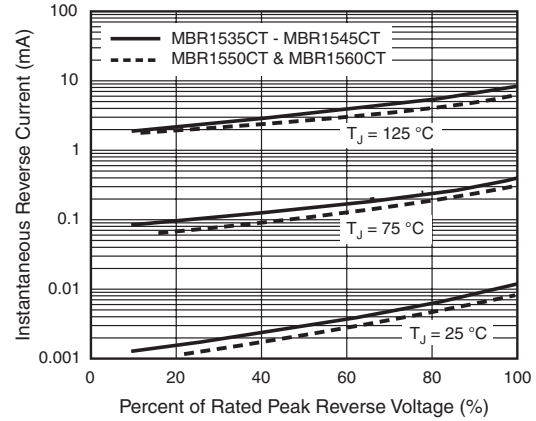


Figure 4. Typical Reverse Characteristics Per Diode

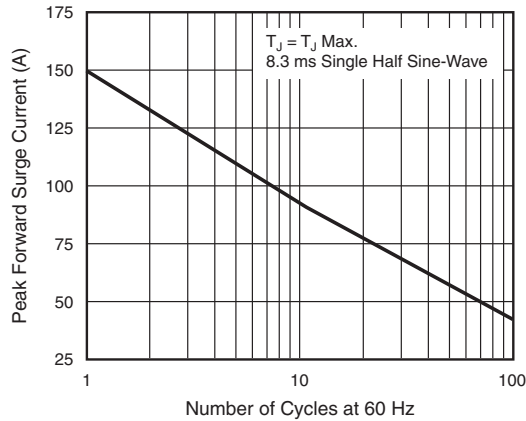


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

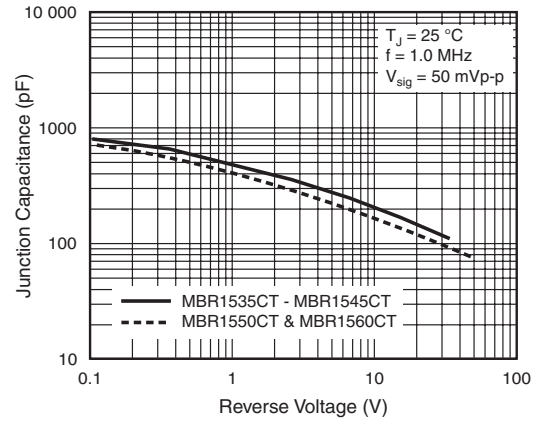


Figure 5. Typical Junction Capacitance Per Diode

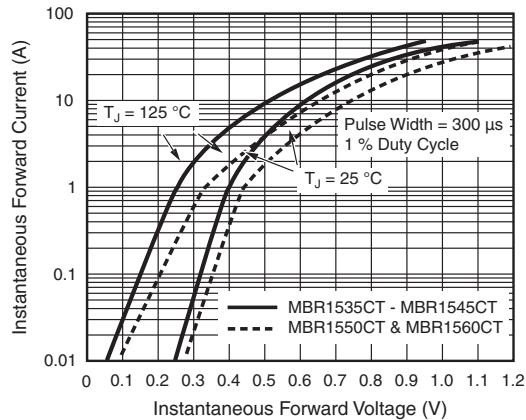


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

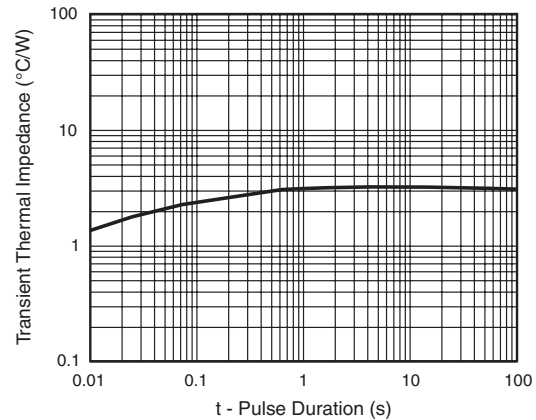


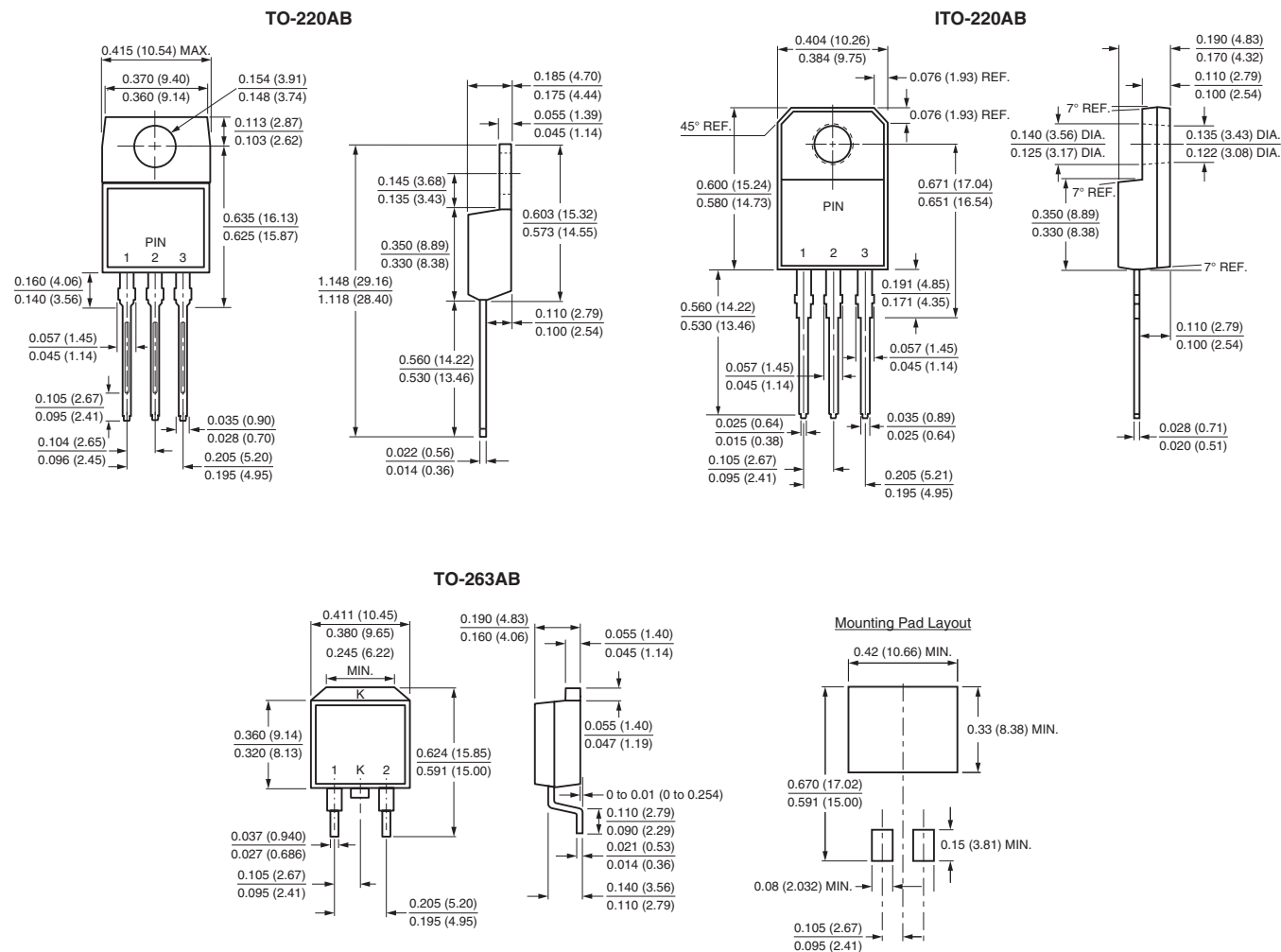
Figure 6. Typical Transient Thermal Impedance Per Diode

# MBR(F,B)1535CT thru MBR(F,B)1560CT

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## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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