

To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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PNP SILICON TRIPLE DIFFUSED TRANSISTOR FOR HIGH-SPEED HIGH-VOLTAGE SWITCHING

The 2SA1871 is a transistor developed for high-speed high-voltage switching and is ideal for use in switching elements such as switching regulators and DC/DC converters.

FEATURES

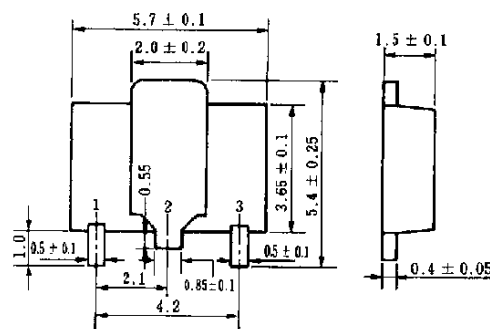
- New package with dimensions in between those of small signal and power signal package
- High voltage
- Fast switching speed
- Complementary transistor with 2SC4942

QUALITY GRADES

- Standard

Please refer to "Quality Grades on NEC Semiconductor Devices" (Document No. C11531E) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

PACKAGE DRAWING (UNIT: mm)



Electrode connection

- 1: Emitter
- 2: Collector
- 3: Base

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	V_{CBO}		-600	V
Collector to emitter voltage	V_{CEO}		-600	V
Emitter to base voltage	V_{EBO}		-7.0	V
Collector current (DC)	$I_{C(DC)}$		-1.0	A
Collector current (pulse)	$I_{C(pulse)}$	PW ≤ 10 ms, duty cycle ≤ 50 %	-2.0	A
Total power dissipation	P_T	7.5 cm ² × 0.7 mm ceramic board used	2.0	W
Junction temperature	T_j		150	°C
Storage temperature	T_{stg}		-55 to +150	°C

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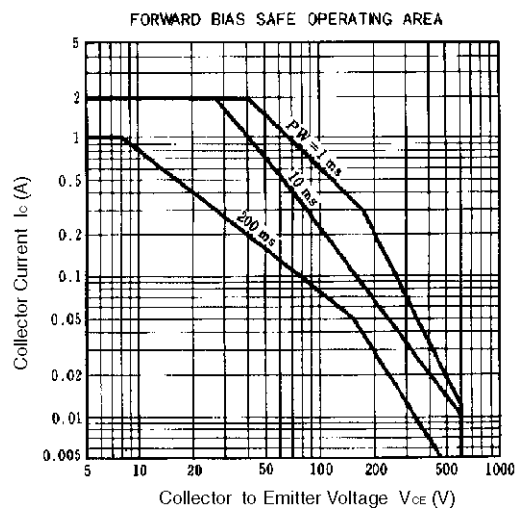
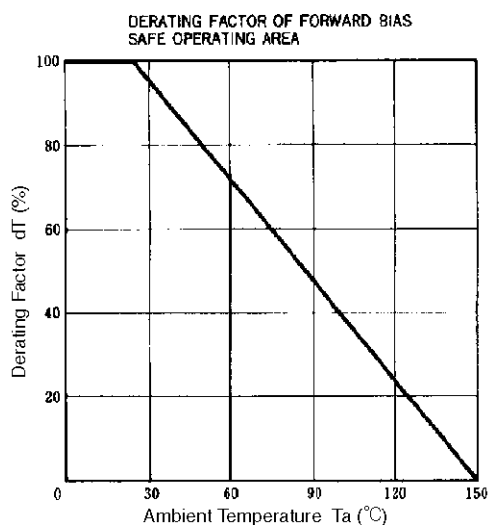
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

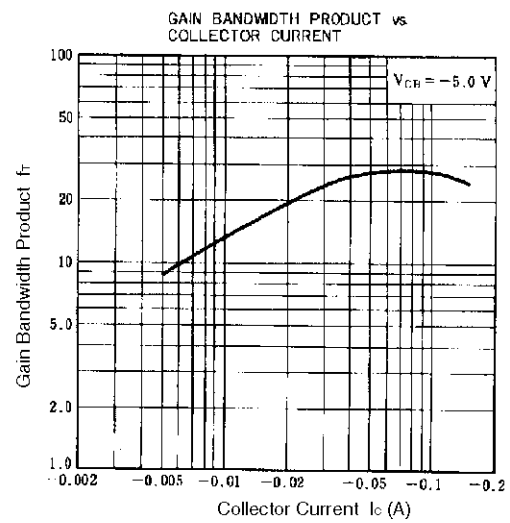
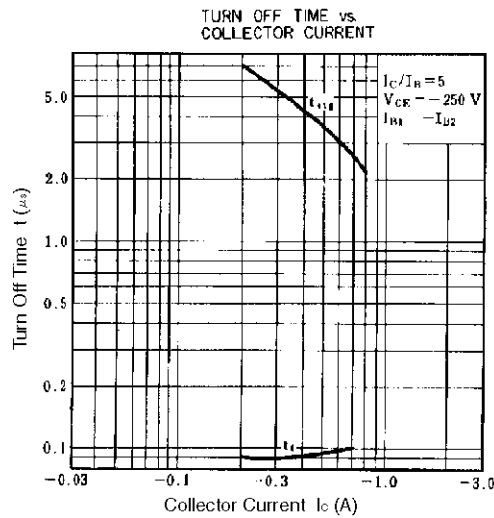
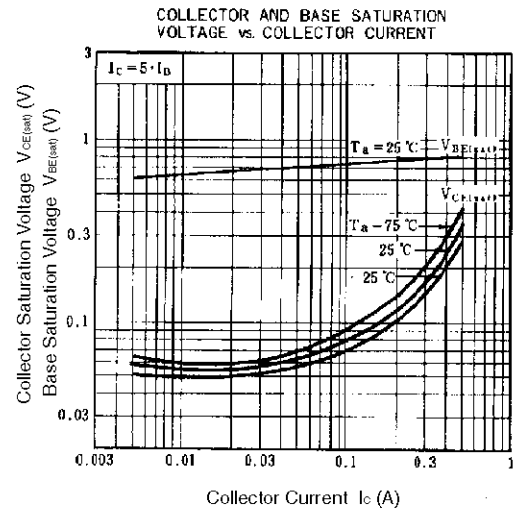
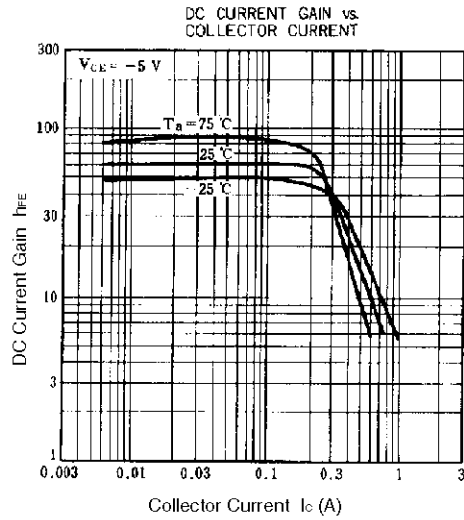
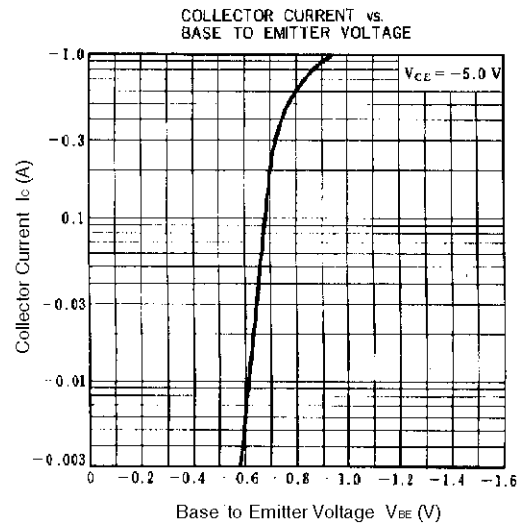
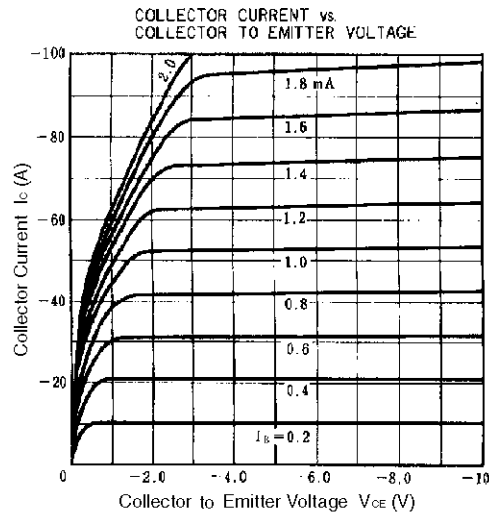
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -600 \text{ V}, I_E = 0$			-10	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -7.0 \text{ V}, I_C = 0$			-10	μA
DC current gain	h_{FE1}	$V_{CE} = -5.0 \text{ V}, I_C = -0.1 \text{ A}$	30	60	120	—
DC current gain	h_{FE2}	$V_{CE} = -5.0 \text{ V}, I_C = -0.5 \text{ A}$	5	20		—
Collector saturation voltage	$V_{CE(sat)}$	$I_C = -300 \text{ mA}, I_B = -60 \text{ mA}$		-0.3	-1.0	V
Base saturation voltage	$V_{BE(sat)}$	$I_C = -300 \text{ mA}, I_B = -60 \text{ mA}$		-0.85	-1.2	V
Gain bandwidth product	f_T	$V_{CE} = -10 \text{ V}, I_E = 50 \text{ mA}$		30		MHz
Output capacitance	C_{ob}	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1.0 \text{ MHz}$		40		pF
Turn-on time	t_{on}	$I_C = -0.5 \text{ A}, V_{CC} = -250 \text{ V}$ $I_{B1} = -I_{B2} = -0.1 \text{ A},$ $R_L = 500 \Omega,$		0.1	0.5	μs
Storage time	t_{stg}			3.5	5.0	μs
Fall time	t_f			0.1	0.5	μs

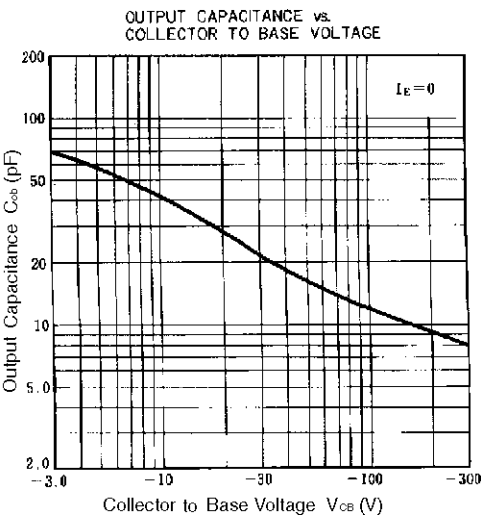
h_{FE} CLASSIFICATION

Marking	GA1	GA2	GA3
h_{FE1}	30 to 60	40 to 80	60 to 120

TYPICAL CHARACTERISTICS (Ta = 25°C)







[MEMO]

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