

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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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Not recommended
for new design

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Renesas Technology Home Page: <http://www.renesas.com>

Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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2SD2423

Silicon NPN Epitaxial, Darlington

RENESAS

Application

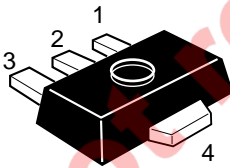
Low frequency power amplifier

Features

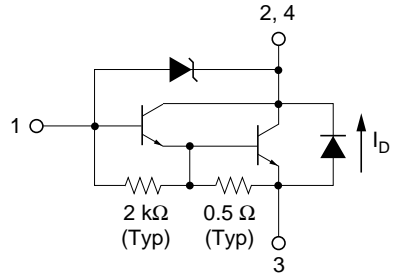
The transistor with a built-in zener diode of surge absorb.

Outline

UPAK



1. Base
2. Collector
3. Emitter
4. Collector (Flange)



Absolute Maximum Ratings (Ta = 25°C)

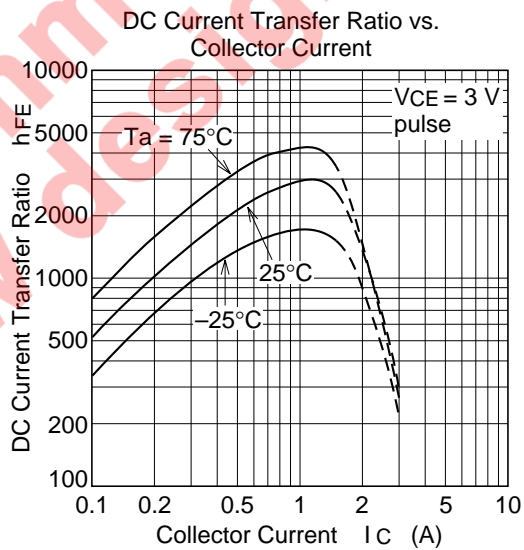
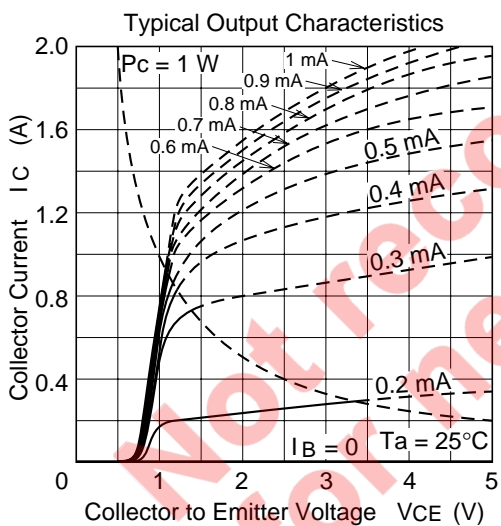
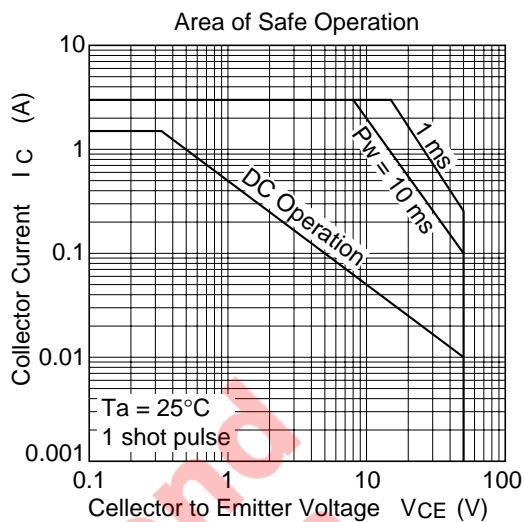
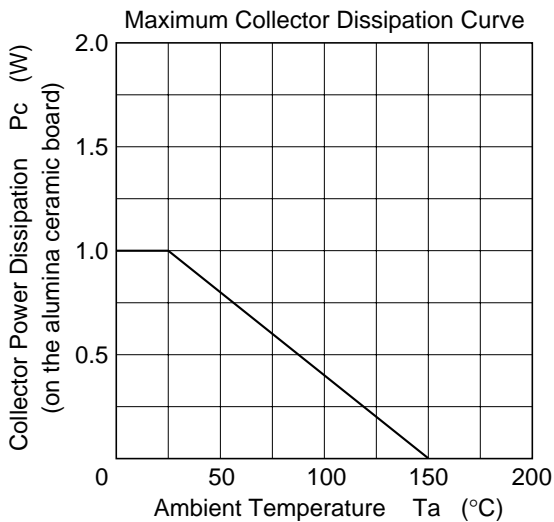
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	50	V
Collector to emitter voltage	V_{CEO}	50	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	1.5	A
Collector power dissipation	P_C^{*1}	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C
Collector to emitter diode forward current	I_D	1.5	A

Note: 1. When using the ceramic board 0.7 mm thick (12.5 mm x 20 mm).

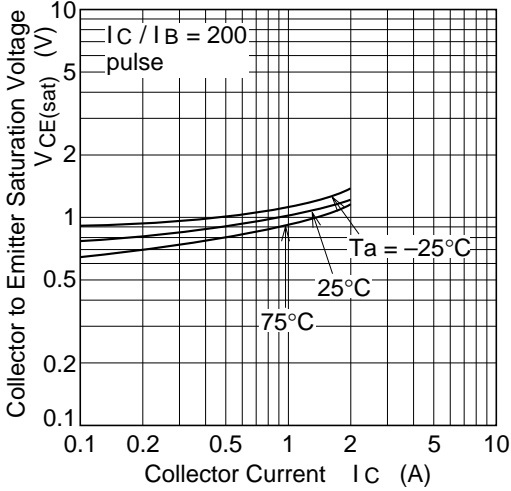
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	50	—	70	V	$I_C = 100 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	50	—	—	V	$I_C = 10 \text{ mA}, R_{BE} = \infty$
Collector to emitter sustaining voltage	$V_{CEO(sus)}$	50	—	70	V	$I_C = 1.5 \text{ A}, R_{BE} = \infty, L = 10 \text{ mH}^{*1}$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50 \text{ mA}, I_C = 0$
Collector cutoff current	I_{CEO}	—	—	10	μA	$V_{CE} = 40 \text{ V}, R_{BE} = \infty$
DC current transfer ratio	h_{FE}	2000	—	10000		$V_{CE} = 3 \text{ V}, I_C = 1 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	1.5	V	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)2}$	—	—	2.3	V	$I_C = 1.5 \text{ A}, I_B = 1.5 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)1}$	—	—	2.0	V	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{BE(sat)2}$	—	—	2.5	V	$I_C = 1.5 \text{ A}, I_B = 1.5 \text{ mA}^{*1}$
Emitter to collector diode forward voltage	V_D	—	—	3.5	V	$I_D = 1.5 \text{ A}^{*1}$

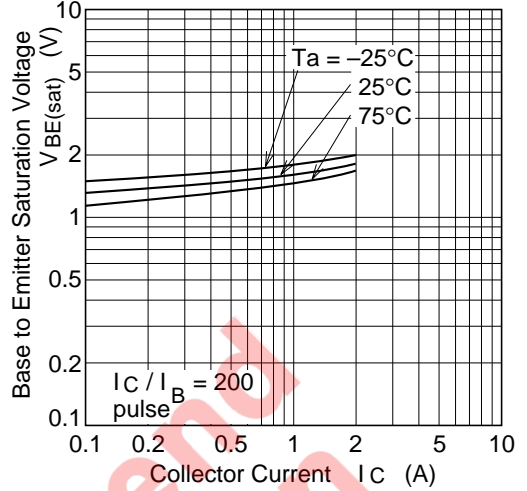
Notes: 1. Pulse test
2. Marking is "GT".



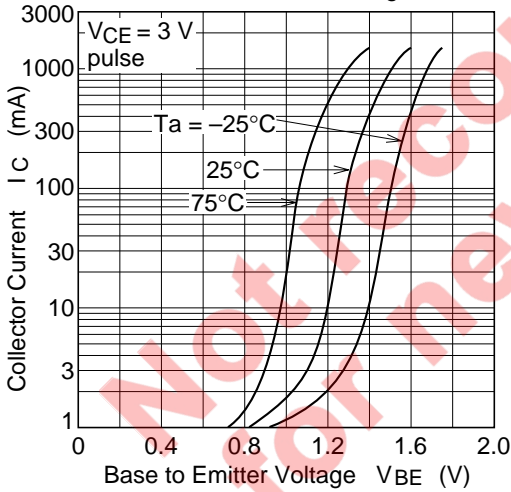
Collector to Emitter Saturation Voltage vs. Collector Current



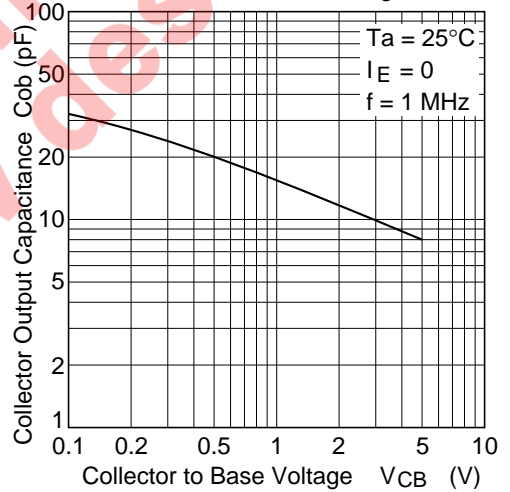
Base to Emitter Saturation Voltage vs. Collector Current



Collector Current vs. Base to Emitter Voltage



Collector Output Capacitance vs. Collector to Base Voltage



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