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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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Not recommended
for new design

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2SD1978

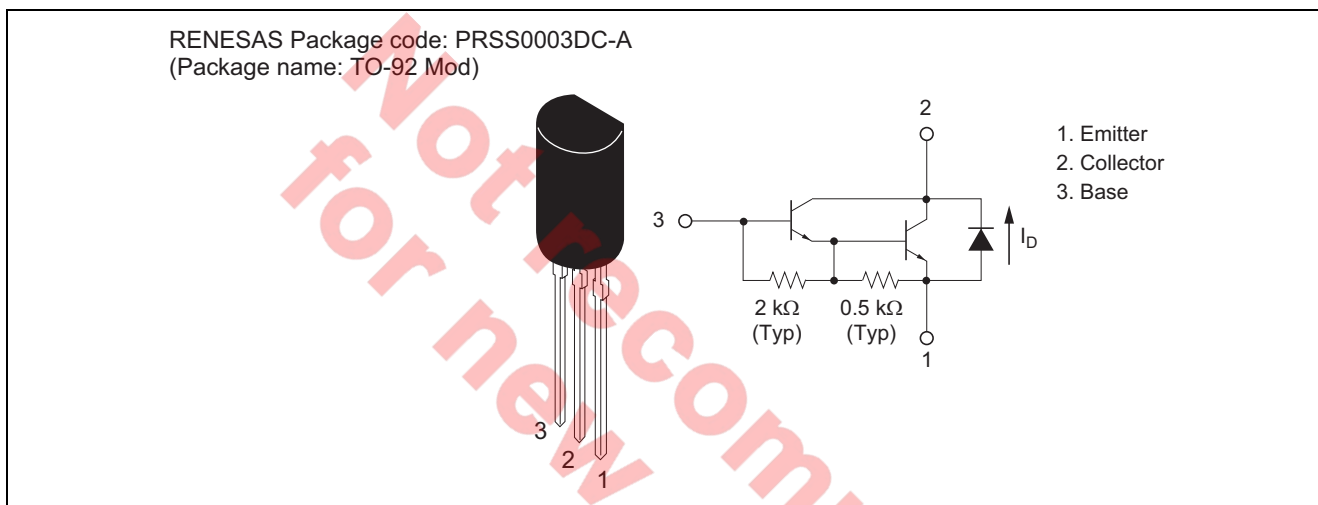
Silicon NPN Epitaxial, Darlington

REJ03G0799-0200
 (Previous ADE-208-1162)
 Rev.2.00
 Aug.10.2005

Application

- Low frequency power amplifier
- Complementary pair with 2SB1387

Outline



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	120	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_C	1.5	A
Collector peak current	$i_{C (peak)}$	3.0	A
Collector power dissipation	P_C	0.9	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C
E to C diode forward current	I_D	1.5	A

Electrical Characteristics

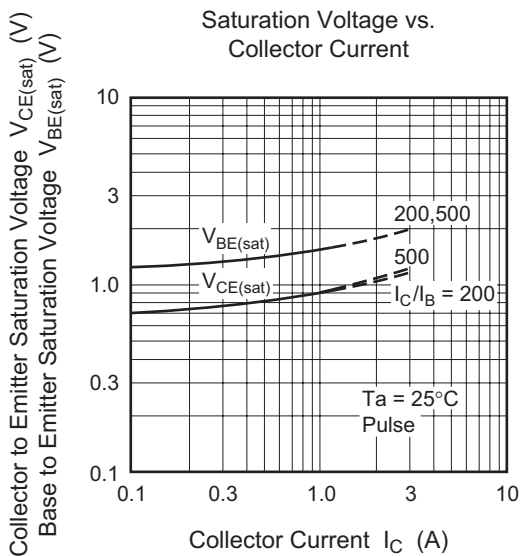
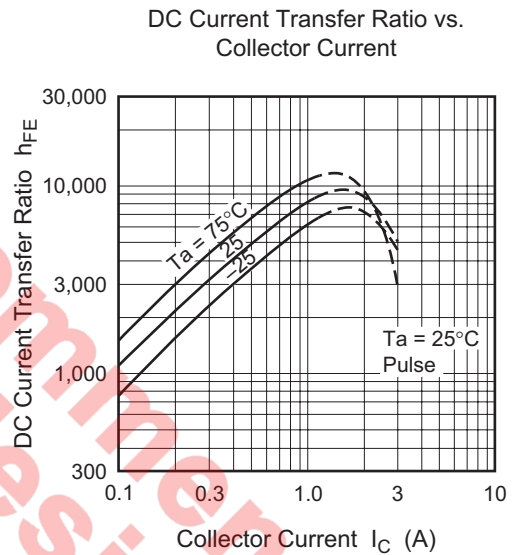
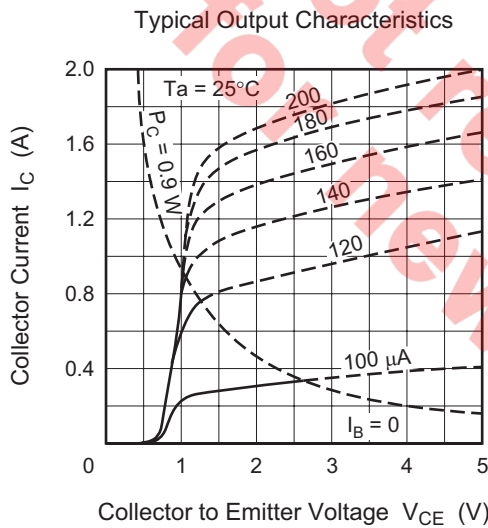
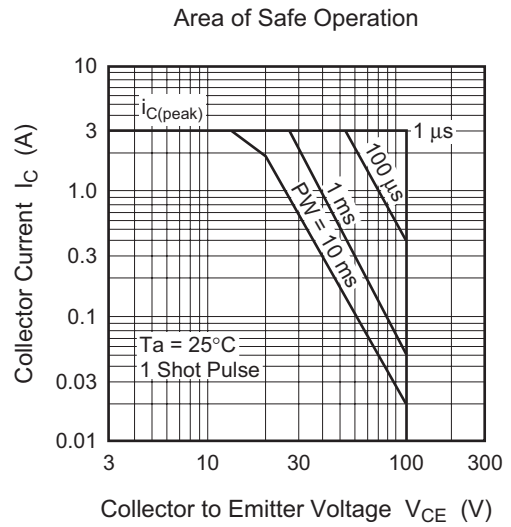
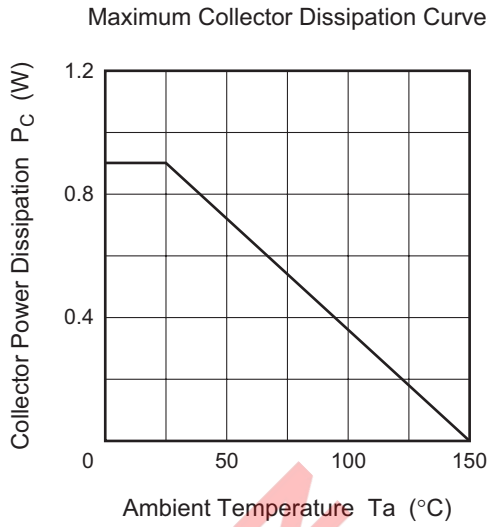
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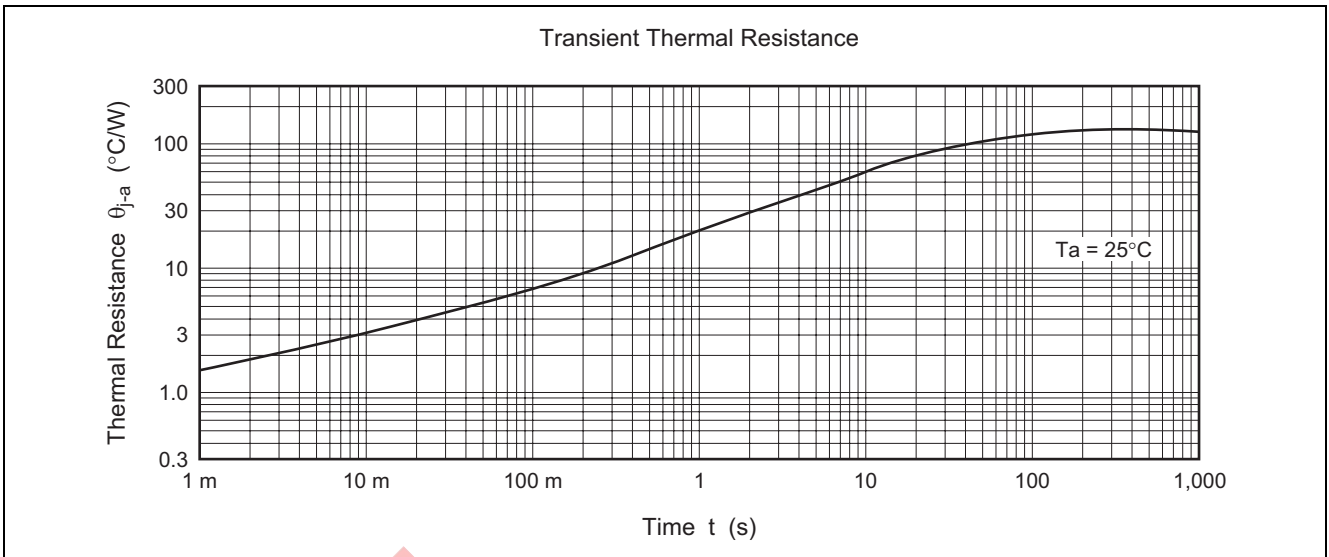
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	120	—	—	V	$I_C = 0.1 \text{ mA}, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	V	$I_C = 10 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	7	—	—	V	$I_E = 50 \text{ mA}, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	1.0	μA	$V_{CB} = 100 \text{ V}, I_E = 0$
	I_{CEO}	—	—	10	μA	$V_{CE} = 100 \text{ V}, R_{BE} = \infty$
DC current transfer ratio	h_{FE}	2000	—	30000		$V_{CE} = 3 \text{ V}, I_C = 1 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{CE(sat)1}$	—	—	1.5	V	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
	$V_{CE(sat)2}$	—	—	2.0	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	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$
	$V_{BE(sat)2}$	—	—	2.5	V	$I_C = 1.5 \text{ A}, I_B = 1.5 \text{ mA}^{*1}$
E to C diode forward voltage	V_D	—	—	3.0	V	$I_D = 1.5 \text{ A}^{*1}$

Note: 1. Pulse test

Not recommend
for new design

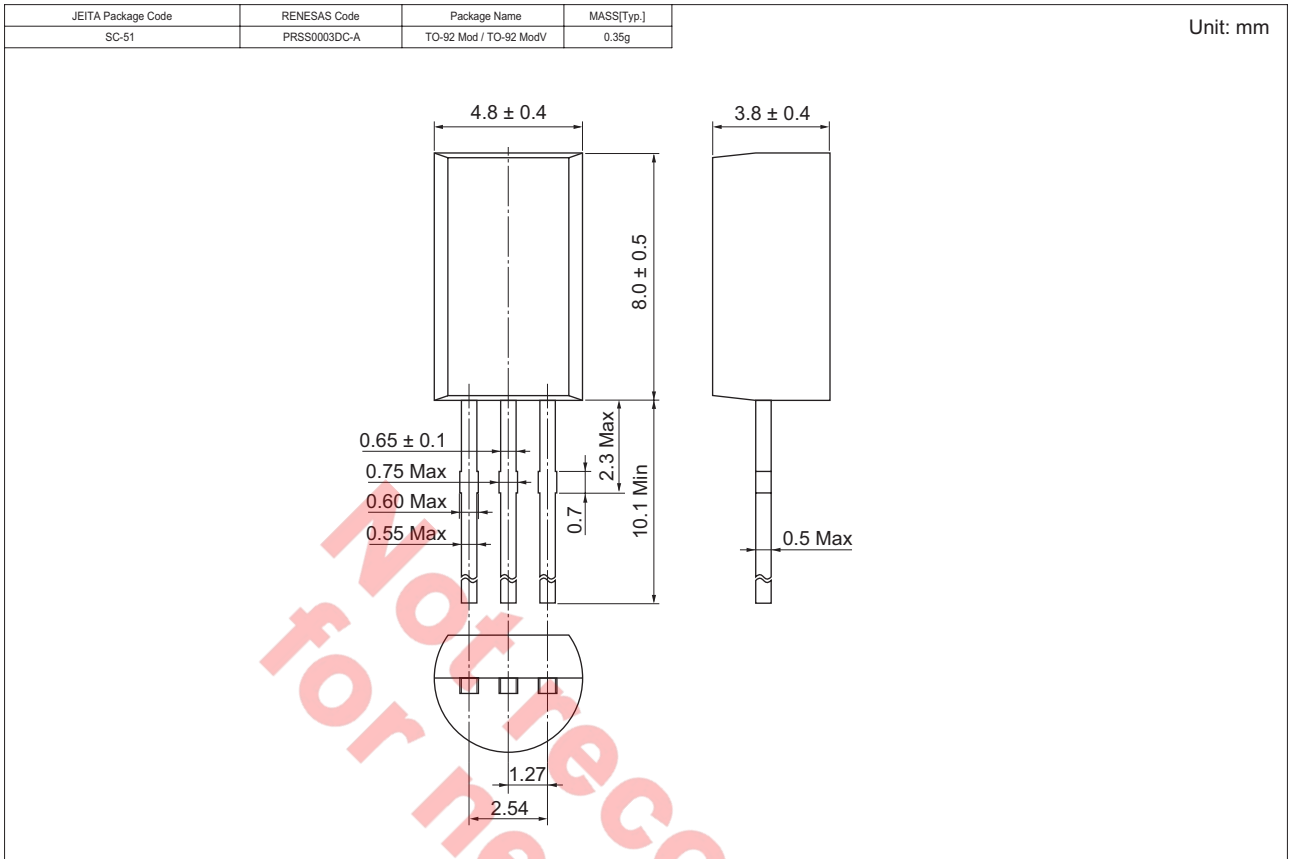
Main Characteristics





Not recommend for new design

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SD1978TZ	2500	Hold Box, Radial Taping

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