2SD1978

Silicon NPN Epitaxial, Darlington

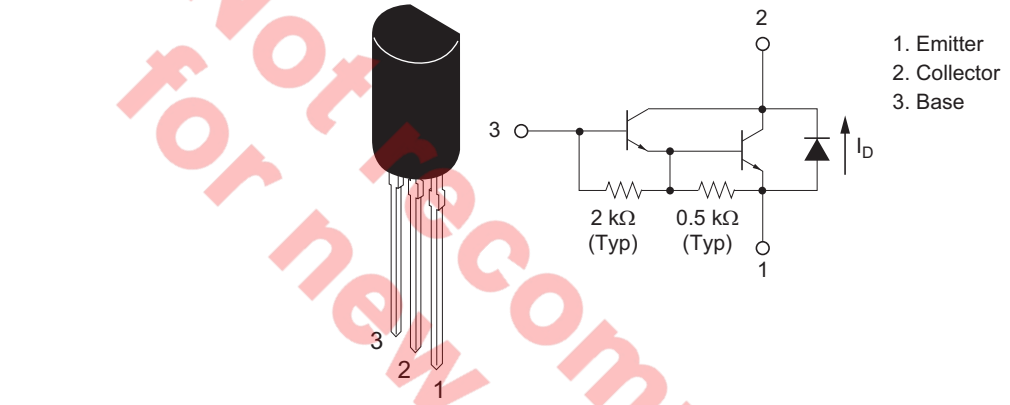
REJ03G0799-0200
(Previous ADE-208-1162)
Rev.2.00
Aug.10.2005

Application

- Low frequency power amplifier
- Complementary pair with 2SB1387

Outline

RENESAS Package code: PRSS0003DC-A
(Package name: TO-92 Mod)



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	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C
E to C diode forward current	I_D	1.5	A

Electrical Characteristics

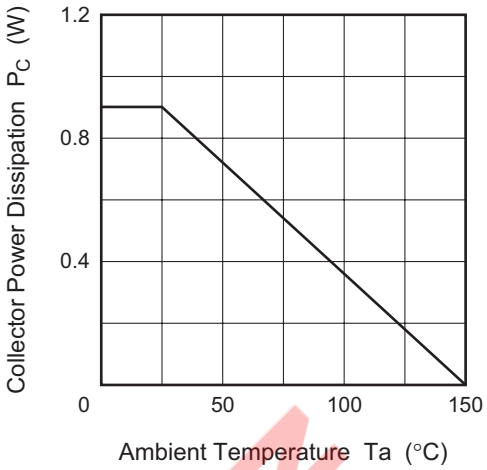
(Ta = 25°C)

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

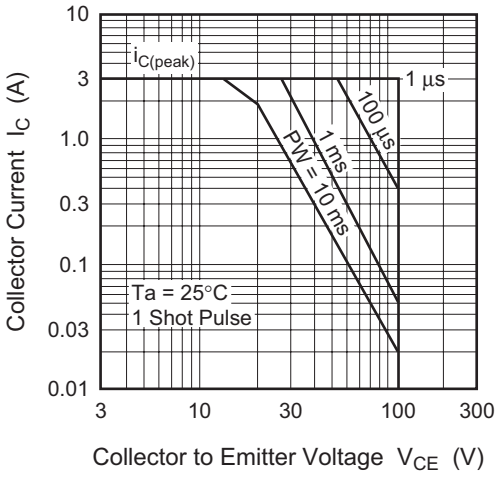
Note: 1. Pulse test

Main Characteristics

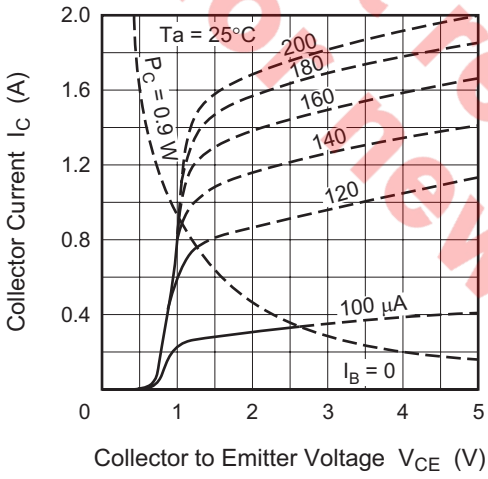
Maximum Collector Dissipation Curve



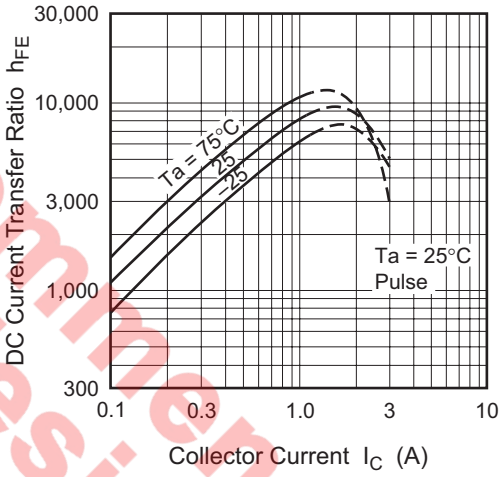
Area of Safe Operation



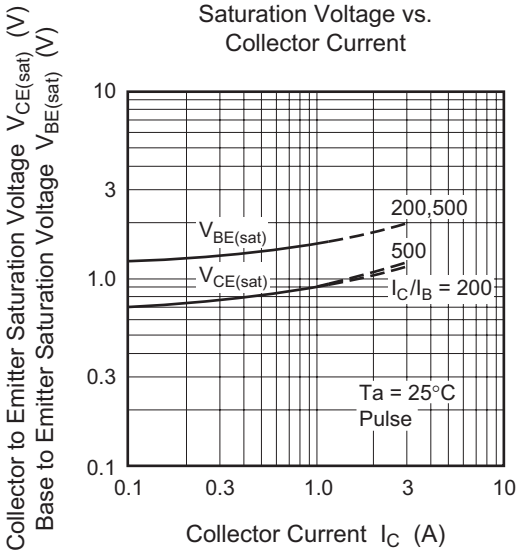
Typical Output Characteristics

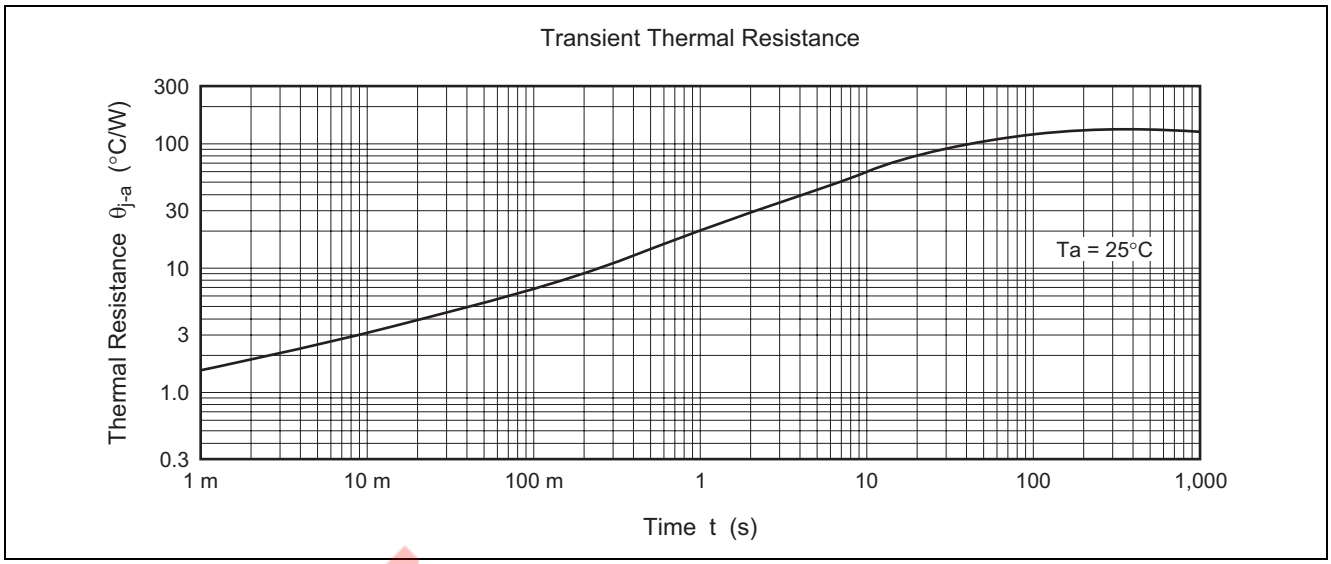


DC Current Transfer Ratio vs. Collector Current



Saturation Voltage vs. Collector Current

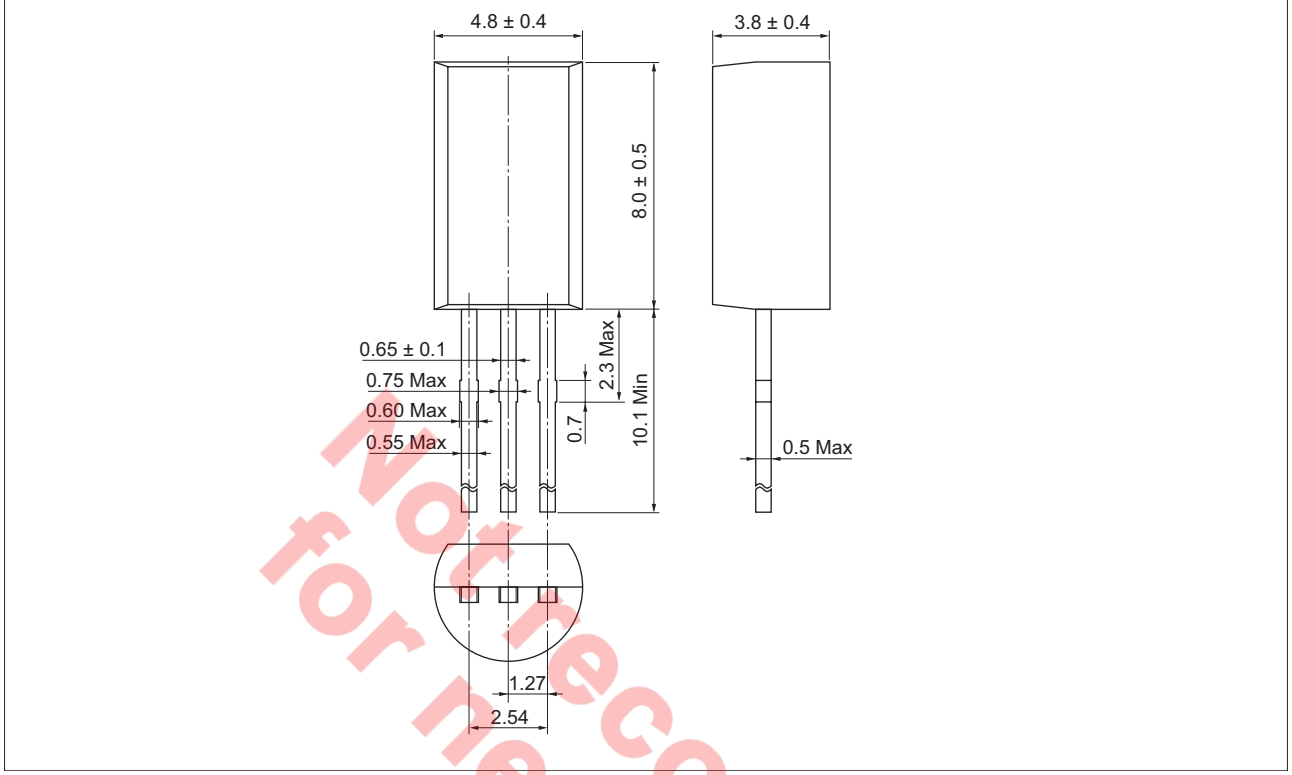




Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-51	PRSS0003DC-A	TO-92 Mod / TO-92 ModV	0.35g

Unit: mm



Ordering Information

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

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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http://www.renesas.com

Refer to "**http://www.renesas.com/en/network**" for the latest and detailed information.

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