

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>)

Send any inquiries to <http://www.renesas.com/inquiry>.

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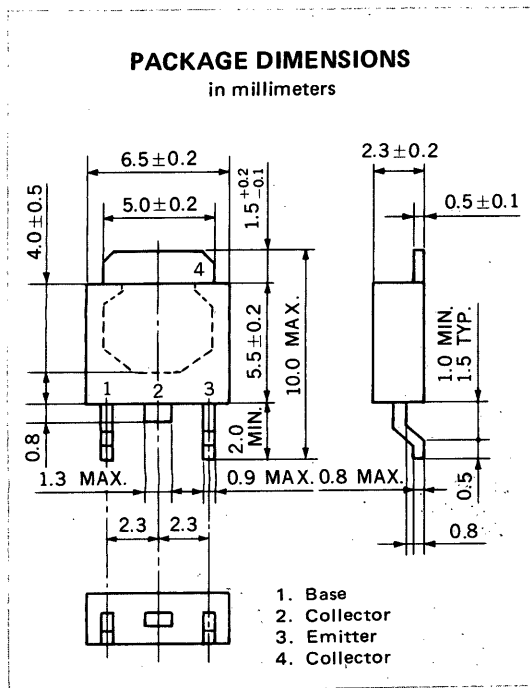
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NPN SILICON EPITAXIAL TRANSISTOR

MP-3

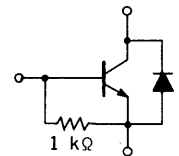
DESCRIPTION

2SD992-Z is designed for Audio Frequency Amplifier and Switching, especially in Hybrid Integrated Circuits.



FEATURES

- Low $V_{CE(sat)}$: $V_{CE(sat)} = 0.3 \text{ V TYP.}$
- B-E Resistor, Built-in
- Complement to 2SB962-Z



ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	2	A
Collector Current (Pulse)*	I_C	3	A

Maximum Power Dissipation

Total Power Dissipation at 25°C Ambient Temperature**	P_T	2.0	W
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Maximum Temperatures

Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10 \text{ ms}$, Duty Cycle $\leq 50\%$

**When mounted on ceramic substrate of $2.5 \text{ cm}^2 \times 0.7 \text{ mm}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

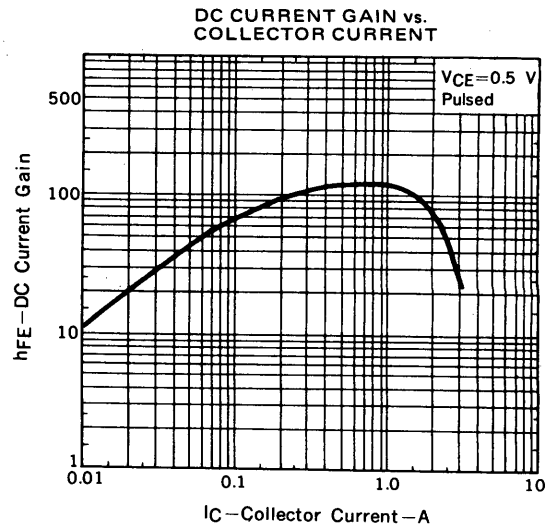
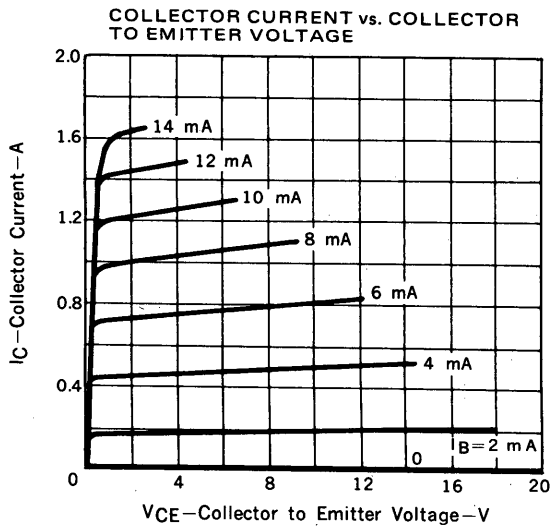
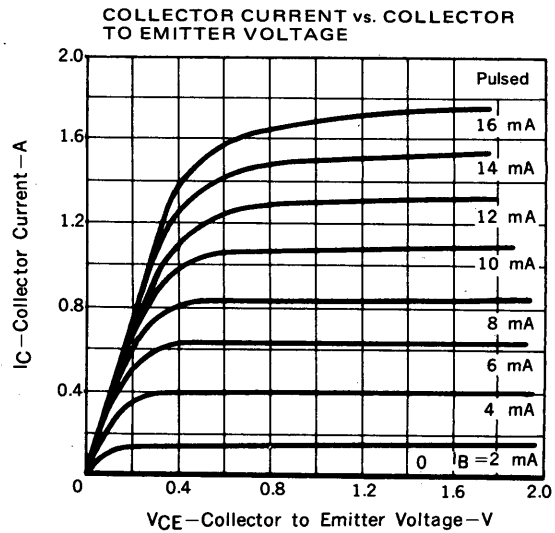
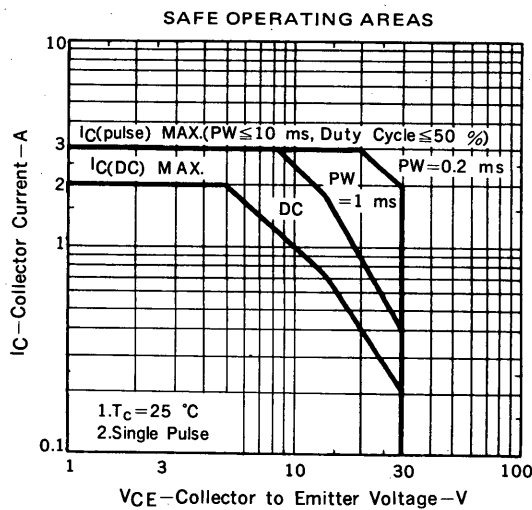
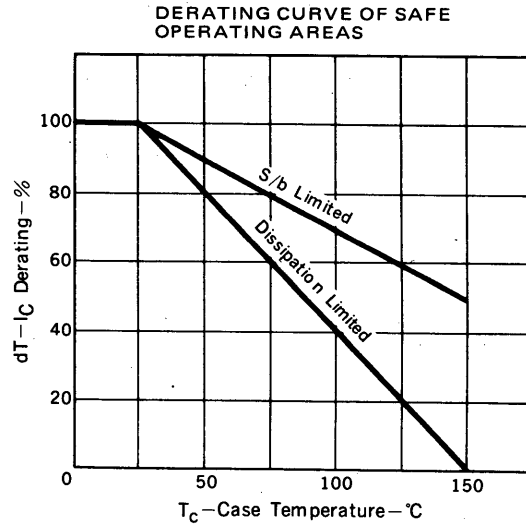
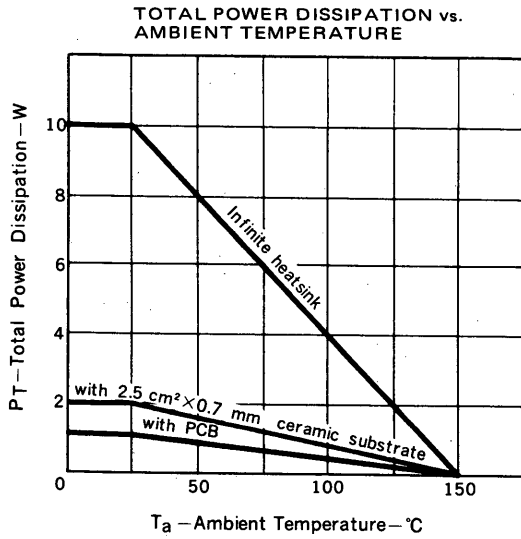
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			10	μA	$V_{CB} = 20 \text{ V}$, $I_E = 0$
DC Current Gain	h_{FE1}^{***}	35		200		$V_{CE} = 0.5 \text{ V}$, $I_C = 0.1 \text{ A}$
DC Current Gain	h_{FE2}^{***}	50				$V_{CE} = 0.5 \text{ V}$, $I_C = 2.0 \text{ A}$
Collector Saturation Voltage	$V_{CE(sat)}^{***}$		0.3	0.5	V	$I_C = 2.0 \text{ A}$, $I_B = 40 \text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}^{***}$		0.95	1.5	V	$I_C = 2.0 \text{ A}$, $I_B = 40 \text{ mA}$

***Pulsed: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

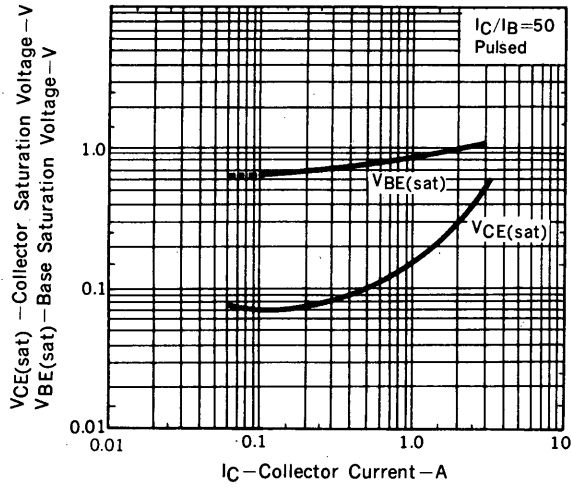
h_{FE} Classification

MARKING	N	M	L	K
h_{FE1}	35 to 80	60 to 120	80 to 120	100 to 200

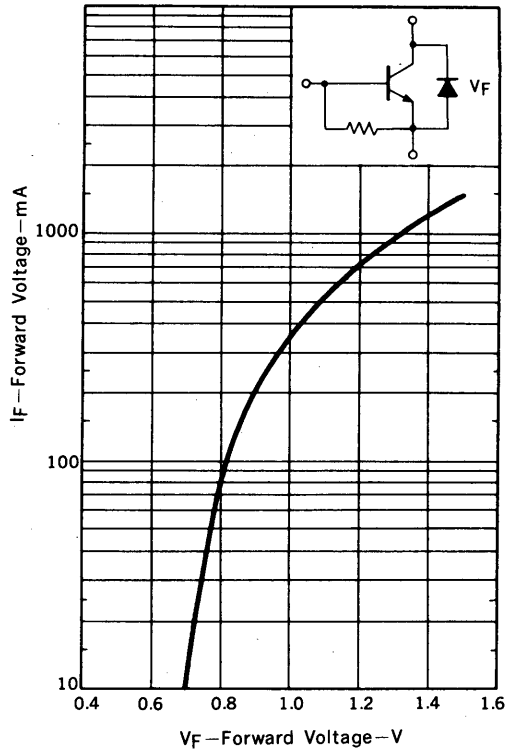
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



FORWARD CURRENT vs. FORWARD VOLTAGE



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