

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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DATA SHEET

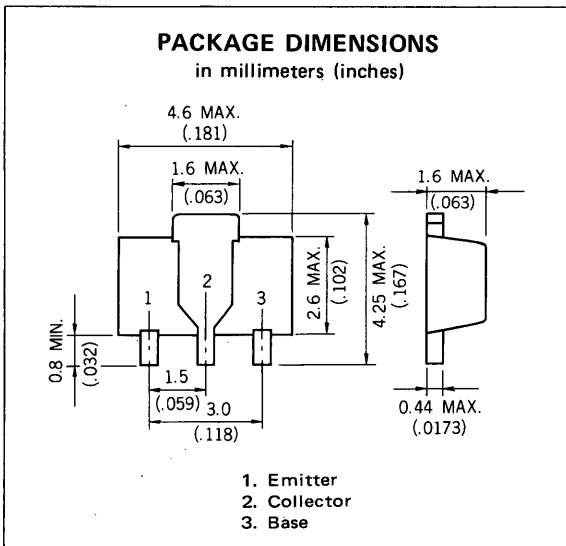
RENESAS

SILICON TRANSISTOR 2SB799

PNP SILICON EPITAXIAL TRANSISTOR POWER MINI MOLD

DESCRIPTION

The 2SB799 is designed for audio frequency power amplifier application, especially in Hybrid Integrated Circuits.



FEATURES

- World Standard Miniature Package
: SOT-89
- Low Collector Saturation Voltage
: $V_{CE(sat)} < -0.4 \text{ V}$ ($I_C = -500 \text{ mA}$, $I_B = -50 \text{ mA}$)
- Complements to NPN type 2SD1000

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ \text{C}$)

Maximum Voltages and Currents

Collector to Base Voltage	V_{CBO}	-60	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current (DC)	I_C	-0.7	A
Collector Current (Pulse)*	I_C	-1.0	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 $16 \text{ cm}^2 \times 0.7 \text{ mm}$

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

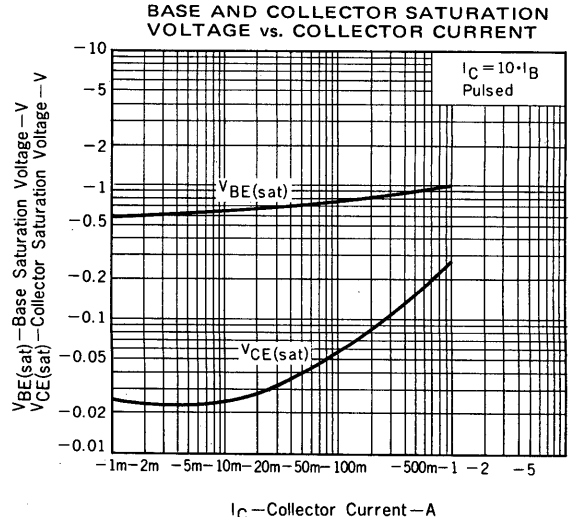
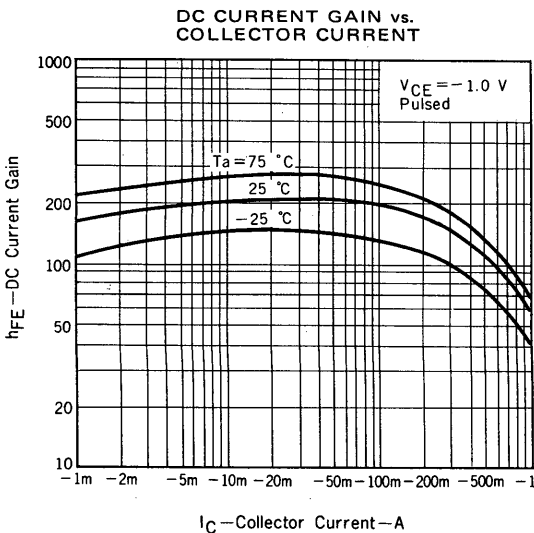
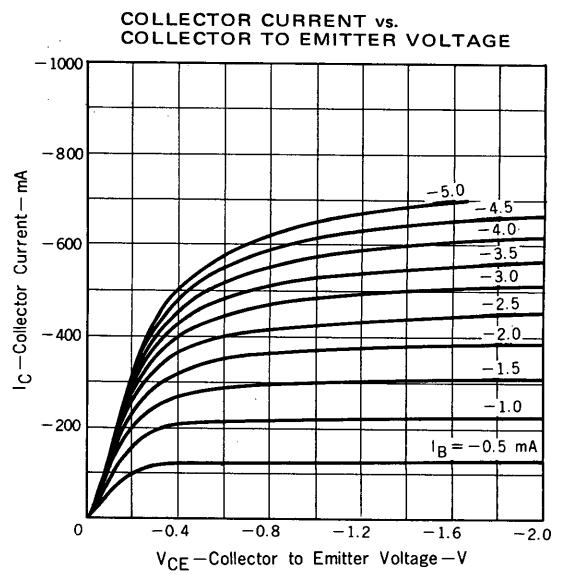
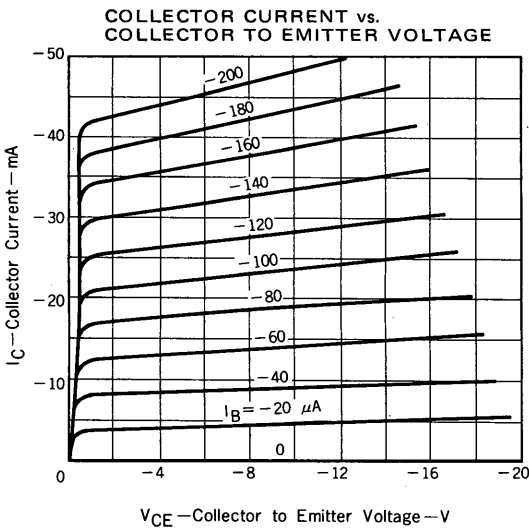
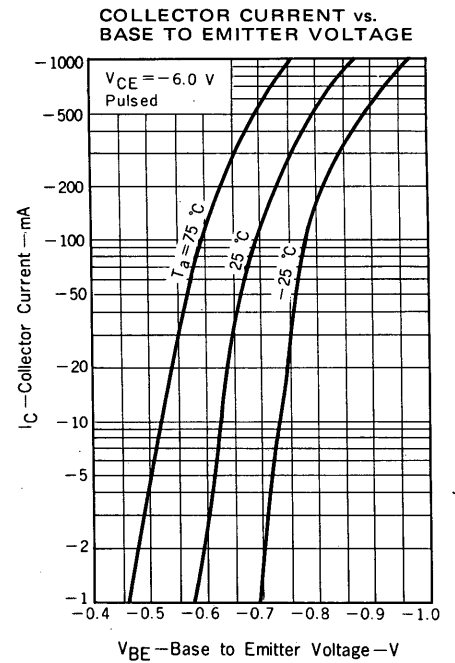
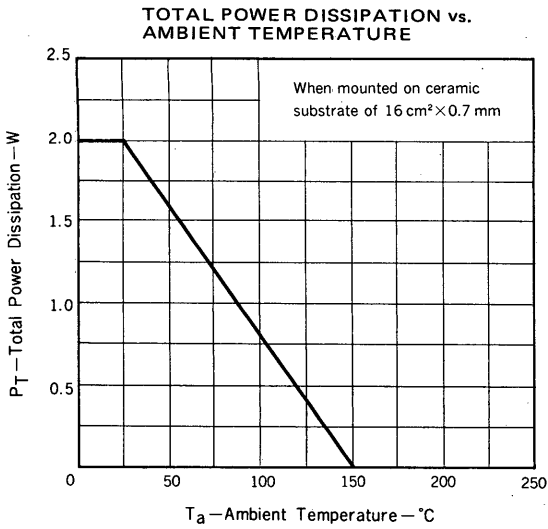
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-100	nA	$V_{CB} = -60 \text{ V}$, $I_E = 0$
Emitter Cutoff Current	I_{EBO}			-100	nA	$V_{EB} = -5.0 \text{ V}$, $I_C = 0$
DC Current Gain	h_{FE1}	90	200	400		$V_{CE} = -1.0 \text{ V}$, $I_C = -100 \text{ mA}$ ***
DC Current Gain	h_{FE2}	50	120			$V_{CE} = -1.0 \text{ V}$, $I_C = -500 \text{ mA}$ ***
Collector Saturation Voltage	$V_{CE(sat)}$		-0.16	-0.40	V	$I_C = -500 \text{ mA}$, $I_B = -50 \text{ mA}$ ***
Base Saturation Voltage	$V_{BE(sat)}$		-0.9	-1.2	V	$I_C = -500 \text{ mA}$, $I_B = -50 \text{ mA}$ ***
Base to Emitter Voltage	V_{BE}	-600	-630	-700	mV	$V_{CE} = -6.0 \text{ V}$, $I_C = -10 \text{ mA}$ ***
Gain Bandwidth Product	f_T		120		MHz	$V_{CE} = -6.0 \text{ V}$, $I_E = 10 \text{ mA}$
Output Capacitance	C_{ob}		25		pF	$V_{CB} = -6.0 \text{ V}$, $I_E = 0$, $f = 1.0 \text{ MHz}$

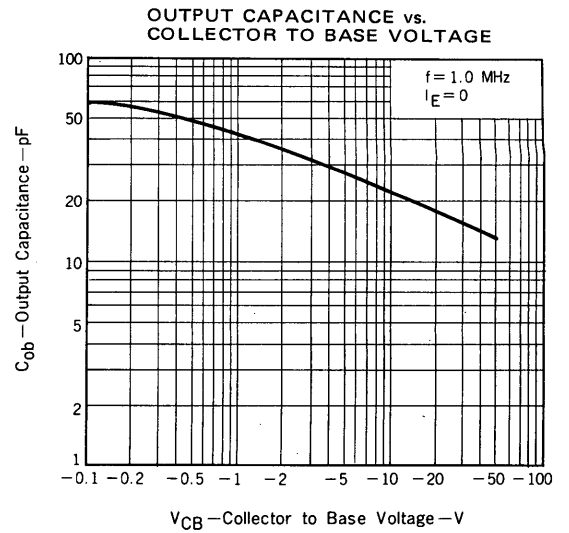
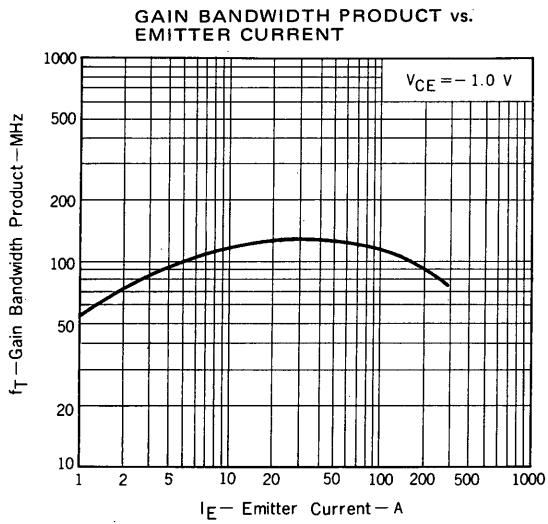
***Pulsed: $PW \leq 350 \mu\text{s}$, duty cycle $\leq 2 \%$

h_{FE} Classification

MARKING	MM	ML	MK
h_{FE1}	90 - 180	135 - 270	200 - 400

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





REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system.	TEI-1202
Quality grade on NEC semiconductor devices.	IEI-1209
Semiconductor device mounting technology manual.	IEI-1207
Semiconductor device package manual.	IEI-1213
Guide to quality assurance for semiconductor devices.	MEI-1202
Semiconductor selection guide.	MF-1134

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