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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RENESAS

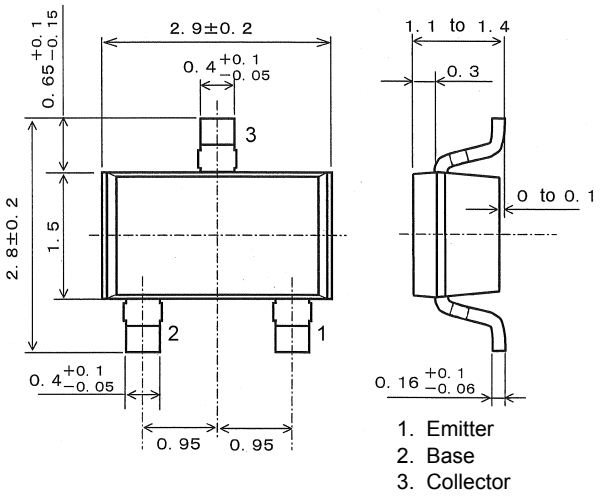
SILICON TRANSISTOR
2SD596A

AUDIO FREQUENCY POWER AMPLIFIER
NPN SILICON EPITAXIAL TRANSISTOR
MINI MOLD

FEATURES

- Complementary to NEC 2SB624 PNP Transistor.
- High DC Current Gain: h_{FE} = 200 TYP. (V_{CE} = 1.0 V, I_C = 100 mA)

PACKAGE DRAWING (Unit: mm)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	25	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current (DC)	I_C	700	mA
Total Power Dissipation	P_T	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	–55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cut-off Current	I_{CBO}			100	nA	V_{CB} = 30 V, I_E = 0 A
Emitter Cut-off Current	I_{EBO}			100	nA	V_{EB} = 5.0 V, I_C = 0 A
DC Current Gain	h_{FE1}	110	200	400		V_{CE} = 1.0 V, I_C = 100 mA Note
	h_{FE2}	50				V_{CE} = 1.0 V, I_C = 700 mA Note
Collector Saturation Voltage	$V_{CE(sat)}$		0.22	0.6	V	I_C = 700 mA, I_B = 70 mA Note
Base to Emitter Voltage	V_{BE}	600	640	700	mV	V_{CE} = 6.0 V, I_C = 10 mA Note
Gain Bandwidth Product	f_T		170		MHz	V_{CE} = 6.0 V, I_E = –10 mA
Output Capacitance	C_{ob}		12		pF	V_{CB} = 6.0 V, I_E = 0 A, f = 1.0 MHz

Note Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2%

h_{FE1} CLASSIFICATION

Marking	DV1	DV2	DV3	DV4	DV5
h_{FE}	110 to 180	135 to 220	170 to 270	200 to 320	250 to 400

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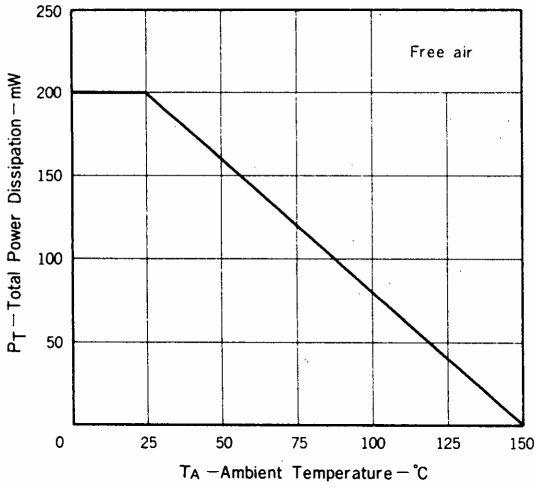
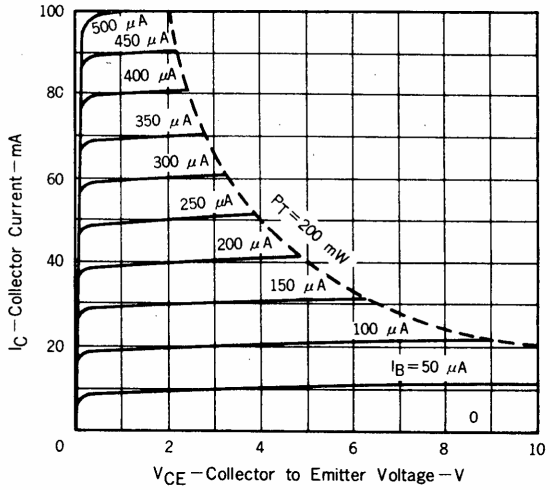
TYPICAL CHARACTERISTICS (T_A = 25°C)

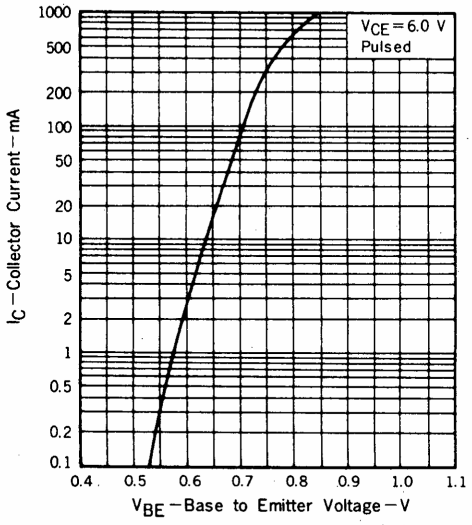
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



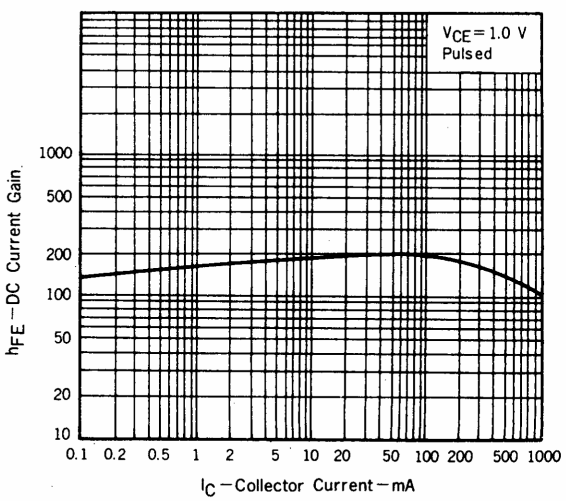
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



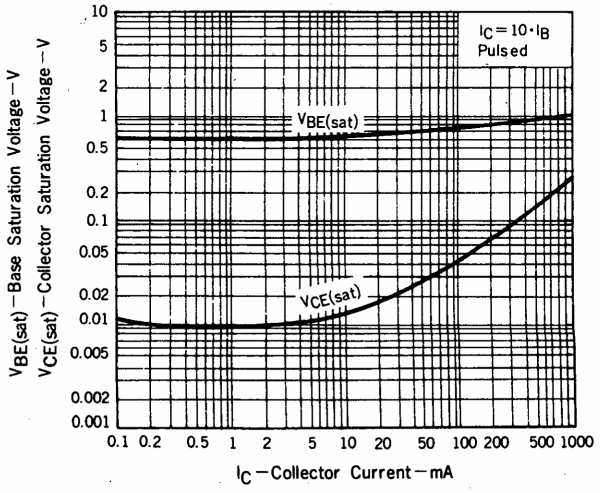
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



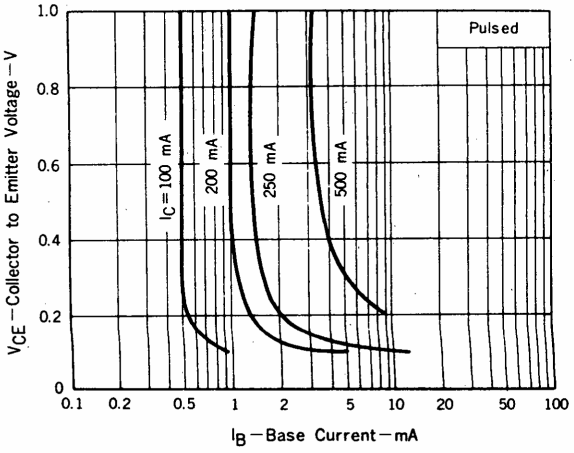
DC CURRENT GAIN vs. COLLECTOR CURRENT



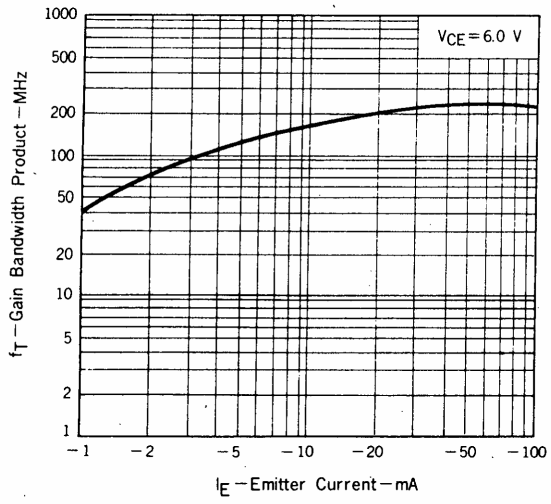
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



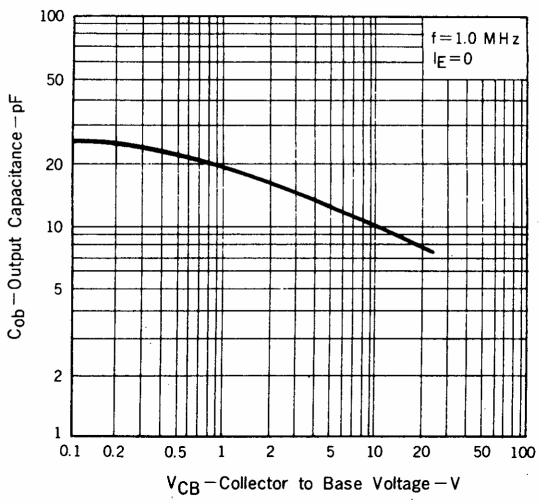
COLLECTOR TO EMITTER VOLTAGE vs. BASE CURRENT



GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



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