

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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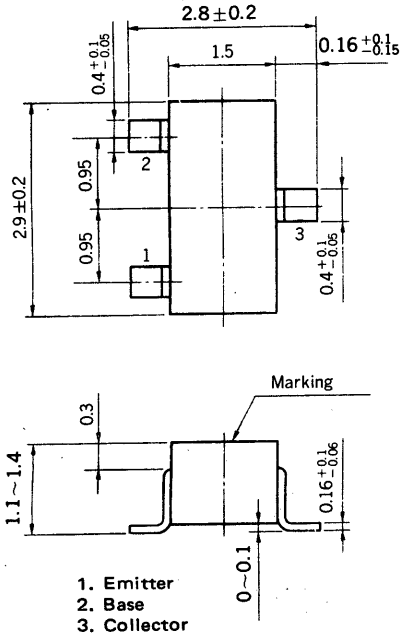
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2SD780, 2SD780A

AUDIO FREQUENCY POWER AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR MINI MOLD

PACKAGE DIMENSIONS

in millimeters



DESCRIPTION

The 2SD780, 2SD780A are designed for use in small type equipments especially recommended for hybrid integrated circuit and other applications.

FEATURES

- Micro package.
- High DC current gain. h_{FE} : 200 TYP. ($V_{CE} = 1.0$ V, $I_C = 50$ mA)
- Complimentary to NEC 2SB736, 2SB736A PNP Transistor.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Current ($T_a = 25$ °C)	2SD780	2SD780A	
Collector to Base Voltage	V_{CBO} 60	80	V
Collector to Emitter Voltage	V_{CEO} 60	80	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current (DC)	I_C	300	mA
Maximum Power Dissipation			
Total Power Dissipation			
at 25 °C Ambient Temperature	P_T	200	mW
Maximum Temperatures			
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Junction Temperature	T_j	150	°C

ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

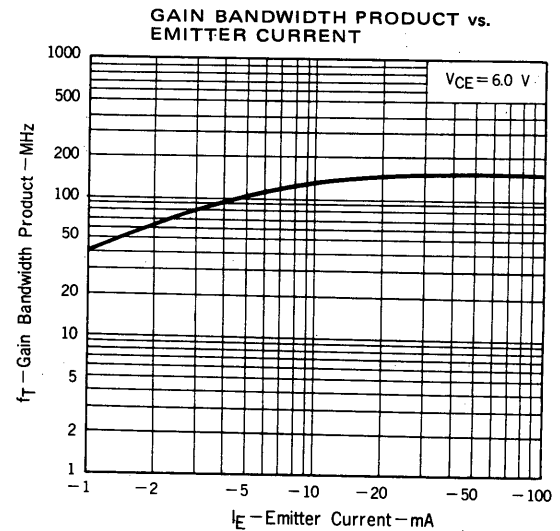
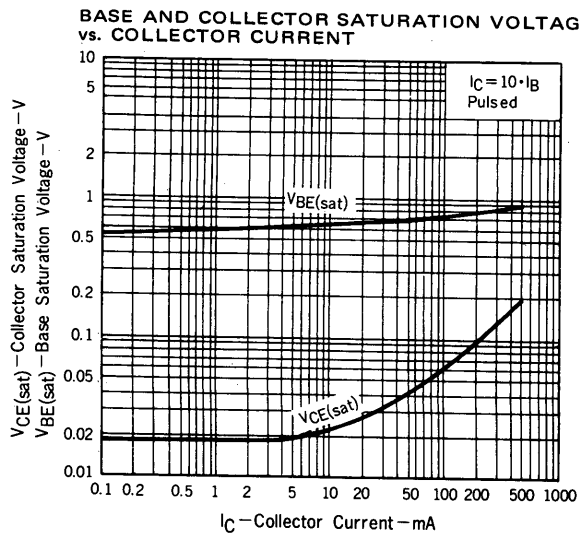
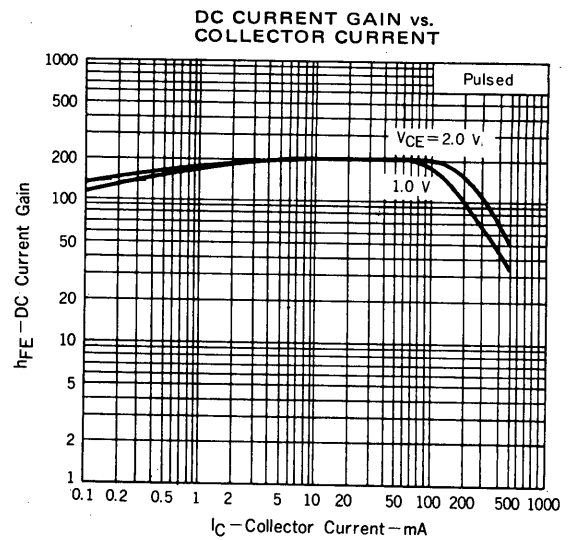
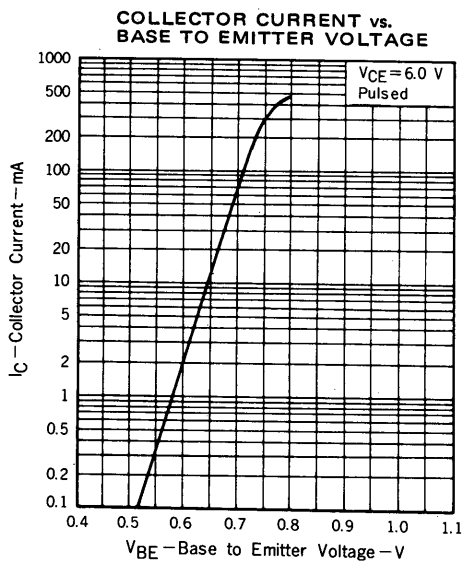
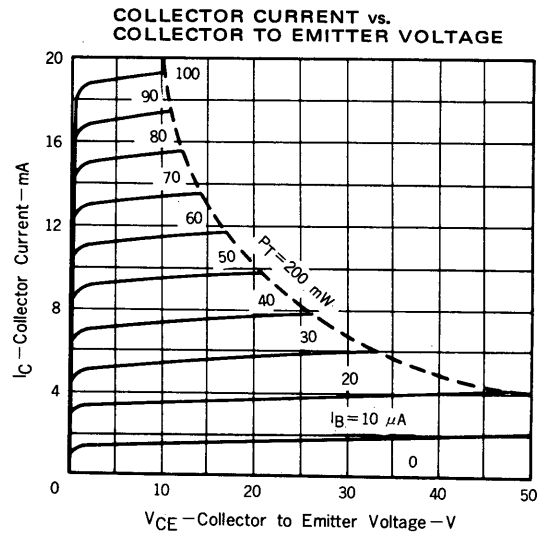
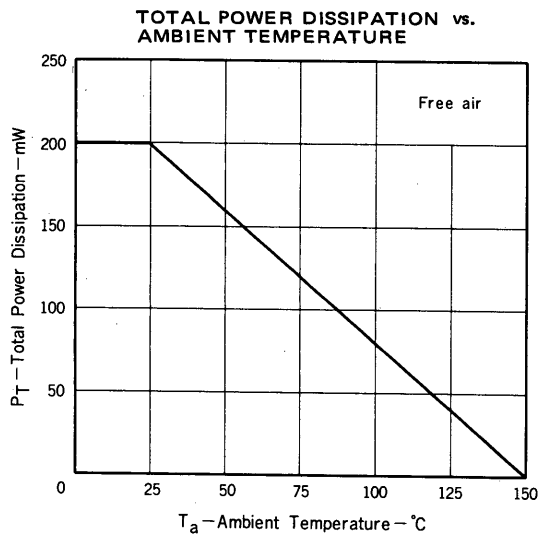
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			100	nA	$V_{CB} = 50$ V, $I_E = 0$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB} = 5.0$ V, $I_C = 0$
DC Current Gain	h_{FE1}	110	200	400		$V_{CE} = 1.0$ V, $I_C = 50$ mA *
DC Current Gain	h_{FE2}	30				$V_{CE} = 2.0$ V, $I_C = 300$ mA *
Base to Emitter Voltage	V_{BE}	600	645	700	mV	$V_{CE} = 6.0$ V, $I_C = 10$ mA *
Collector Saturation Voltage	$V_{CE(sat)}$		0.15	0.6	V	$I_C = 300$ mA, $I_B = 30$ mA *
Output Capacitance	C_{ob}		7.0		pF	$V_{CB} = 6.0$ V, $I_E = 0$, $f = 1.0$ MHz
Gain Bandwidth Product	f_T		140		MHz	$V_{CE} = 6.0$ V, $I_E = -10$ mA

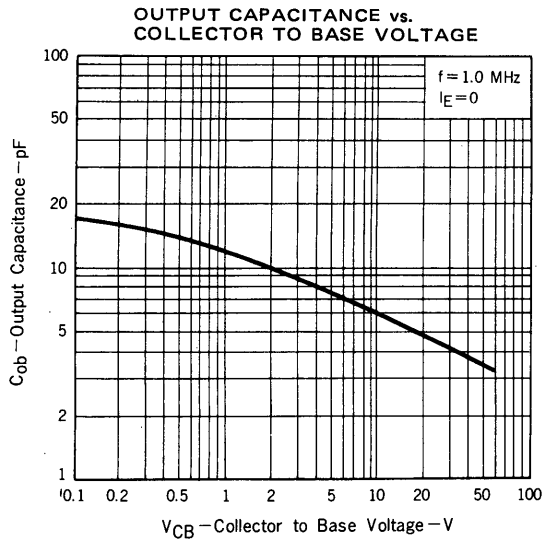
* Pulsed PW ≤ 350 μ s, Duty Cycle ≤ 2 %

h_{FE1} Classification

Marking.	2SD780	DW1	DW2	DW3	DW4	DW5
	2SD780A	D51	D52	D53	D54	D55
h_{FE}	110 to 180	135 to 220	170 to 270	200 to 320	250 to 400	

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





NEC Corporation

INTERNATIONAL ELECTRON DEVICES DIV.
SUMITOMO MITA Building, 37-8,
Shiba Gochome, Minato-ku, Tokyo 108, Japan
Tel: Tokyo 456-3111
Telex Address: NECTOK J22686
Cable Address: NEC TOKYO

TC-1264B
SEPT.-5-84M
Printed in Japan