

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>)

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

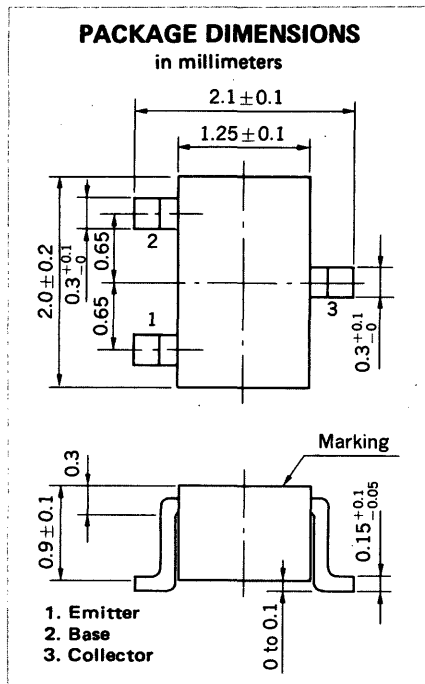
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AUDIO FREQUENCY HIGH GAIN AMPLIFIER
NPN SILICON EPITAXIAL TRANSISTOR



FEATURES

- Complementary to 2SA1612
- High DC Current Gain: $h_{FE} = 600$ TYP. ($V_{CE} = 6.0$ V, $I_C = 1.0$ mA)

ABSOLUTE MAXIMUM RATINGS

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

Collector to Base Voltage	V_{CBO}	120	V
Collector to Emitter Voltage	V_{CEO}	120	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current (DC)	I_C	50	mA

Maximum Power Dissipation

Total Power Dissipation at 25°C Ambient Temperature	P_T	150	mW
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Maximum Temperatures

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

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

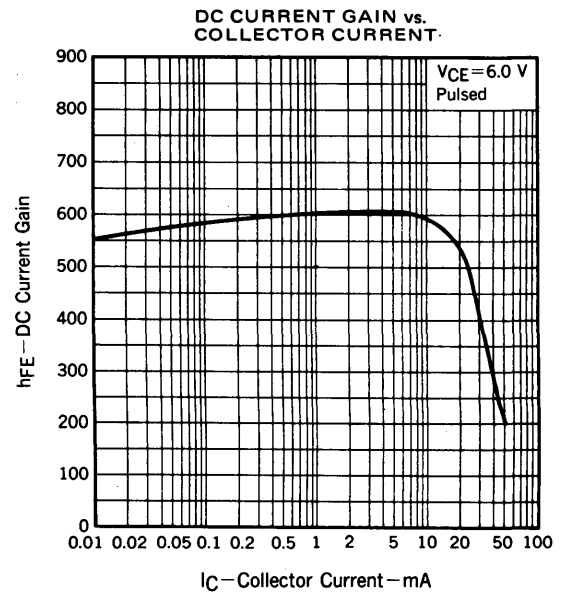
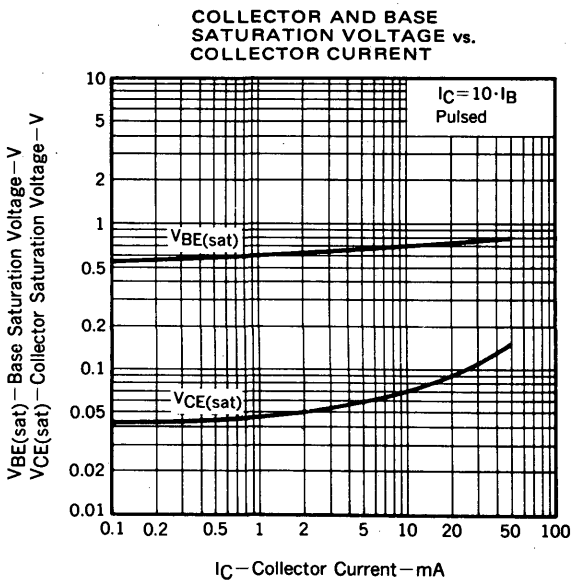
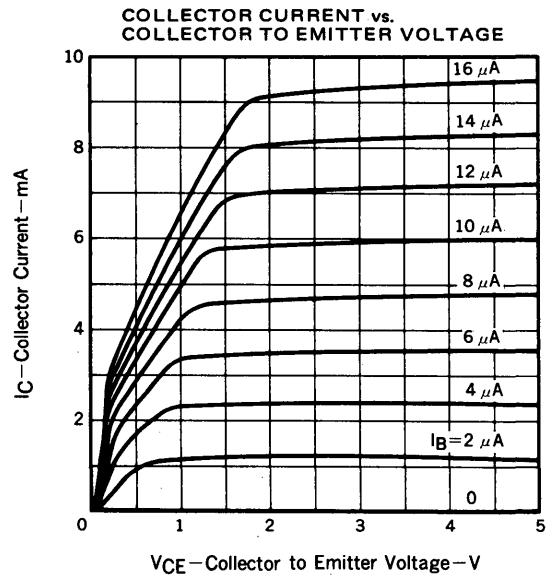
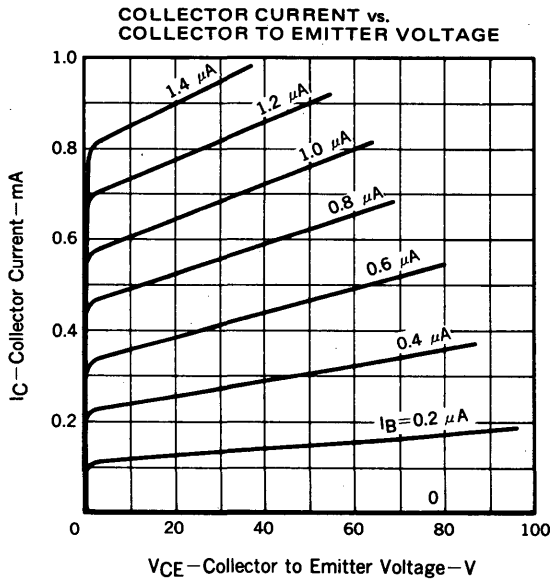
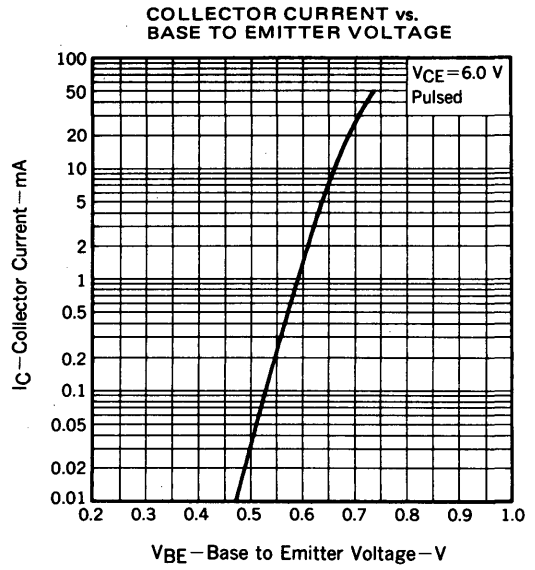
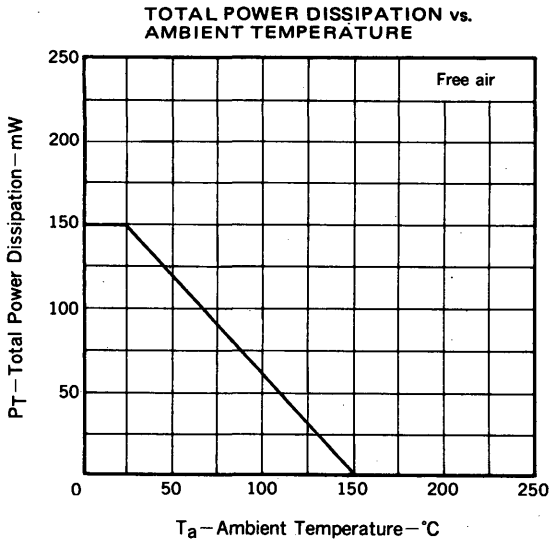
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			0.05	μA	$V_{CB} = 120$ V, $I_E = 0$
Emitter Cutoff Current	I_{EBO}			0.05	μA	$V_{EB} = 5.0$ V, $I_C = 0$
DC Current Gain	h_{FE1}	100	580			$V_{CE} = 6.0$ V, $I_C = 0.1$ mA
DC Current Gain	h_{FE2}	135	600	900		$V_{CE} = 6.0$ V, $I_C = 1.0$ mA*
Collector Saturation Voltage	$V_{CE(sat)}$		0.07	0.30	V	$I_C = 10$ mA, $I_B = 1.0$ mA
Base to Emitter Voltage	V_{BE}	0.55	0.59	0.65	V	$V_{CE} = 6.0$ V, $I_C = 1.0$ mA
Gain Bandwidth Product	f_T	50	110		MHz	$V_{CE} = 6.0$ V, $I_E = -1.0$ mA
Output Capacitance	C_{ob}		1.6	2.5	pF	$V_{CB} = 30$ V, $I_E = 0$, $f = 1.0$ MHz

* Pulsed: $PW \leq 350$ μs , Duty Cycle $\leq 2\%$

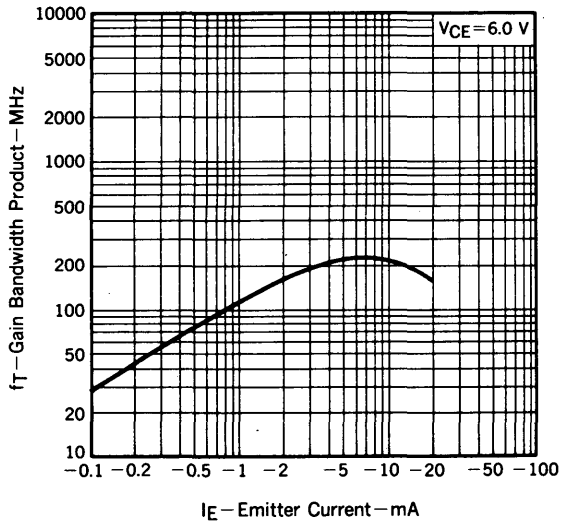
h_{FE} Classification

Marking	D15	D16	D17	D18
h_{FE2}	135 to 270	200 to 400	300 to 600	450 to 900

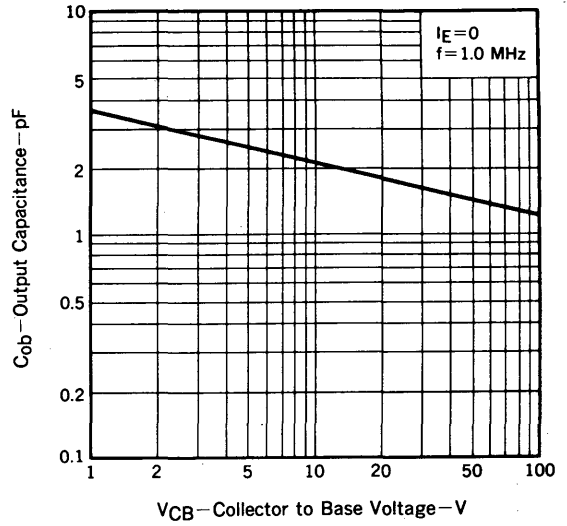
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



[MEMO]

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