

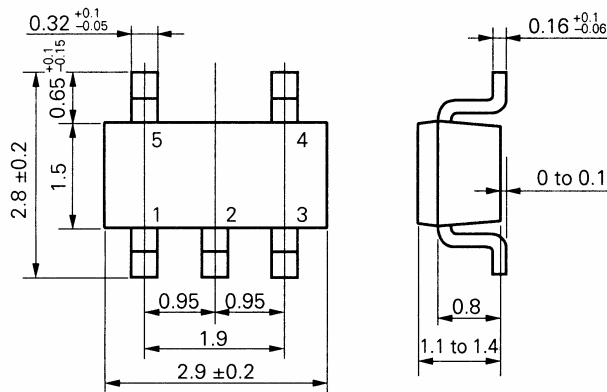
### NPN/PNP SILICON EPITAXIAL TRANSISTOR

### AUDIO FREQUENCY GENERAL PURPOSE AMPLIFIER

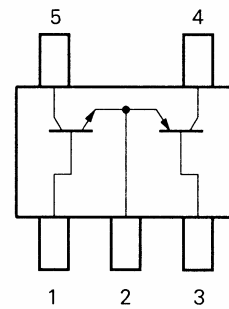
#### FEATURES

- High DC Current Gain
- High Breakdown Voltage

#### PACKAGE DIMENSIONS (Unit: mm)



#### PIN CONNECTION (TOP VIEW)



MARKING: EB

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

Item	Symbol	Ratings	Unit
Collector to Base Voltage	$V_{CB0}$	60/-60**	V
Collector to Emitter Voltage	$V_{CE0}$	50/-50	V
Emitter to Base Voltage	$V_{EB0}$	5.0/-5.0	V
Collector Current (DC)	$I_{C(DC)}$	100/-100	mA
Collector Current (Pulse)	$I_{C(pulse)}^*$	200/-200	mA
Total Power Dissipation	$P_T$	300 (TOTAL)	mW
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  $\leq 50\%$

\*\* The Numbers show the ratings of NPN/PNP transistor.

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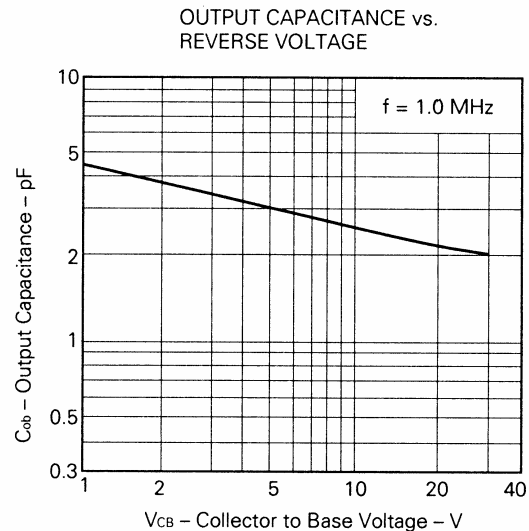
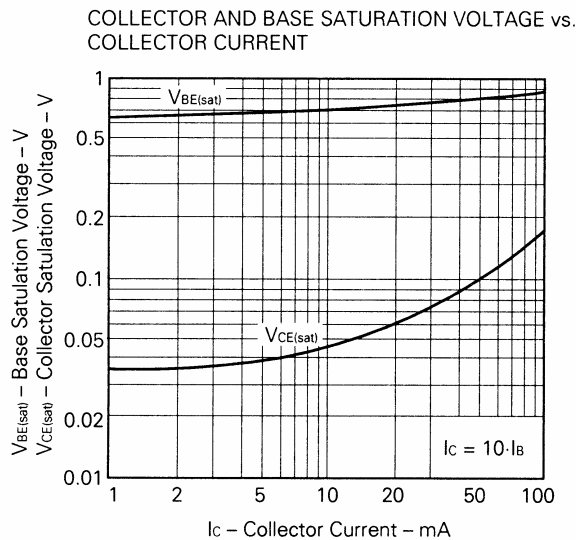
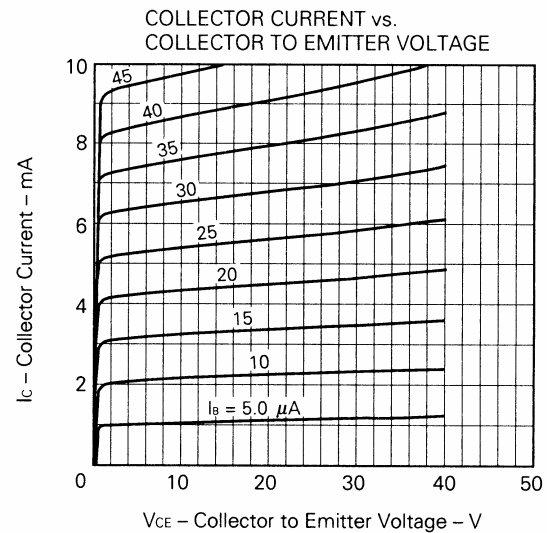
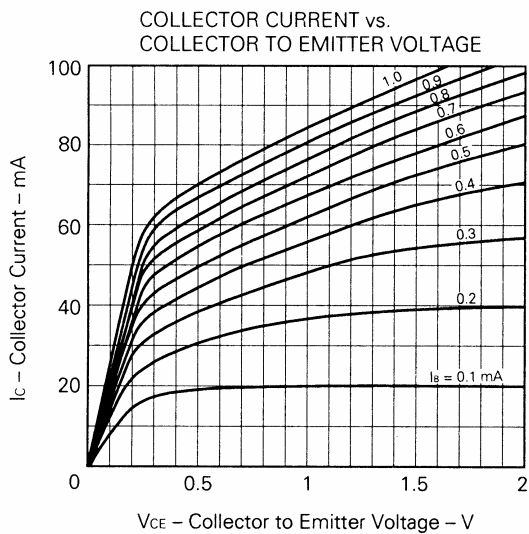
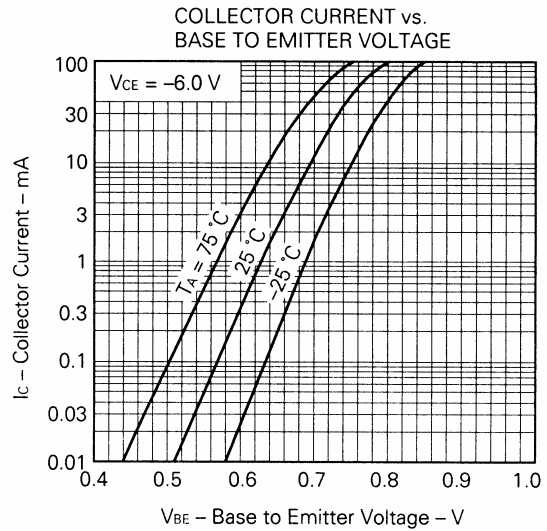
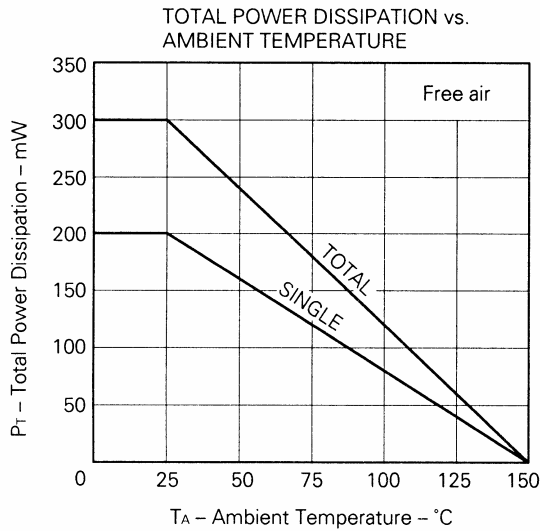
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**

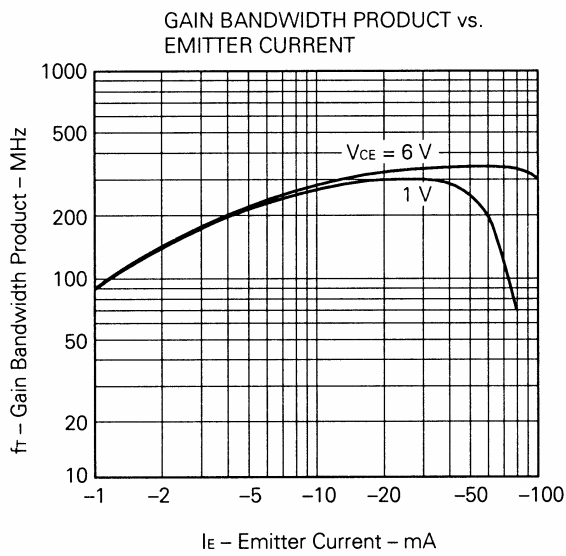
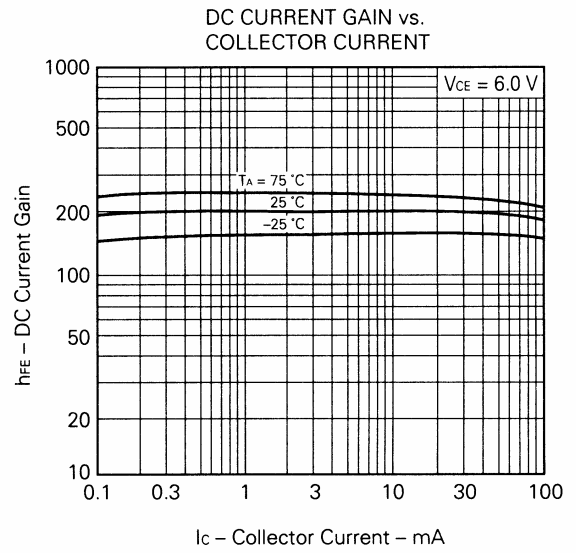
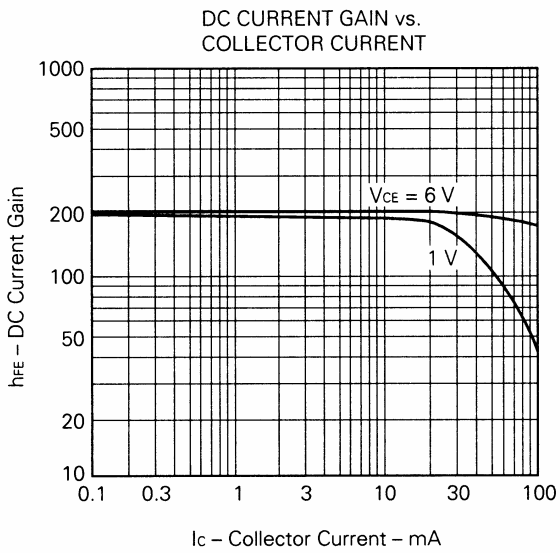
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I <sub>CB0</sub>	—	—	100 -100	nA	V <sub>CB</sub> = 60/-60V, I <sub>E</sub> = 0
Emitter Cutoff Current	I <sub>EB0</sub>	—	—	100 -100	nA	V <sub>EB</sub> = 5.0/-5.0 V, I <sub>C</sub> = 0
DC Current Gain	h <sub>FE1</sub>	50	—	—	—	V <sub>CE</sub> = 6.0/-6.0 V, I <sub>C</sub> = 0.1/-0.1 mA
CD Current Gain	h <sub>FE2</sub>	90	—	600	—	V <sub>CE</sub> = 6.0/-6.0 V, I <sub>C</sub> = 1.0/-1.0 mA
Base to Emitter Voltage	V <sub>BE</sub>	—	0.62 -0.62	—	V	V <sub>CE</sub> = 6.0/-6.0 V, I <sub>C</sub> = 1.0/-1.0 mA
Collector Saturation Voltage	V <sub>CE(sat)</sub>	—	0.15 -0.18	0.3 -0.3	V	I <sub>C</sub> = 100/-100 mA, I <sub>B</sub> = 10/-10 mA
Base Saturation Voltage	V <sub>BE(sat)</sub>	—	0.86 -0.86	1.0 -1.0	V	I <sub>C</sub> = 100/-100 mA, I <sub>B</sub> = 10/-10 mA
Gain Bandwidth Product	f <sub>r</sub>	150 50	250 180	—	MHz	V <sub>CE</sub> = 6.0/-6.0 V, I <sub>E</sub> = -10/10 mA
Output Capacitance	C <sub>ob</sub>	—	3.0 4.5	4.0 6.0	pF	V <sub>CB</sub> = 6.0/-6.0 V, I <sub>E</sub> = 0, f = 1.0 MHz

**Note** The Numbers show the characteristics of NPN/PNP transistors.

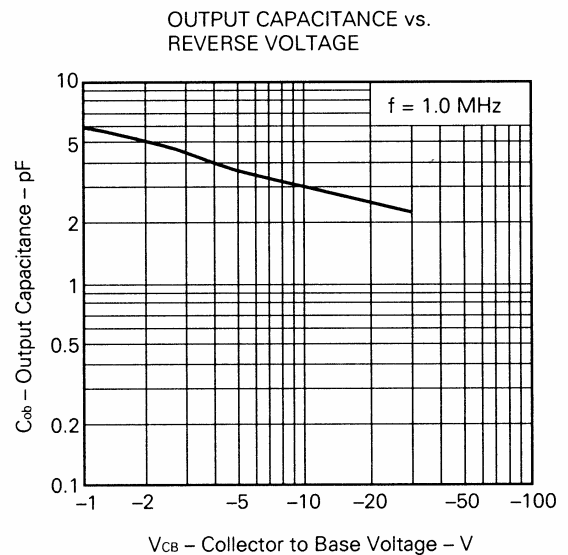
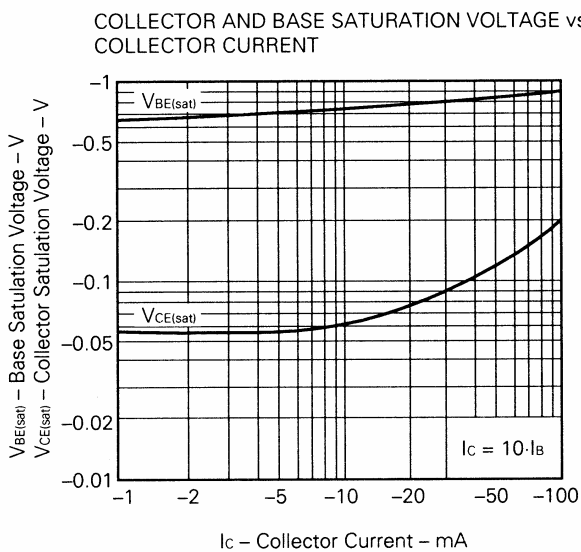
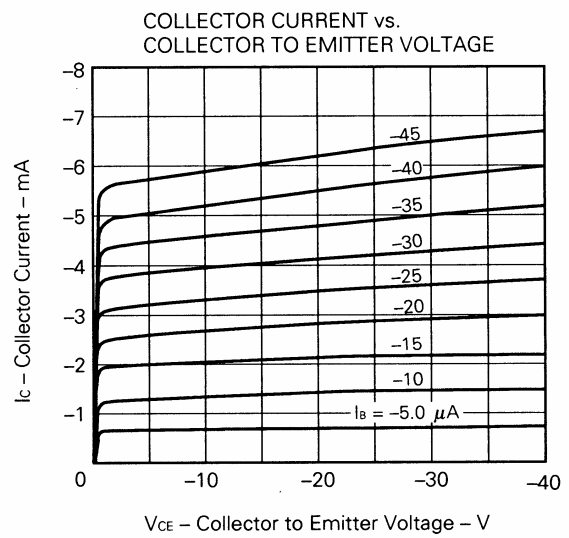
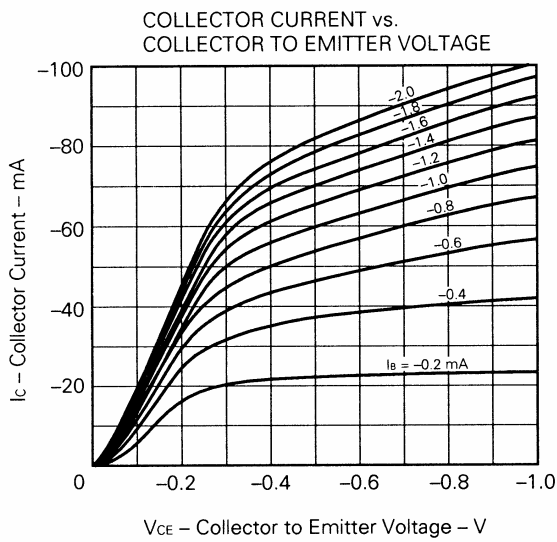
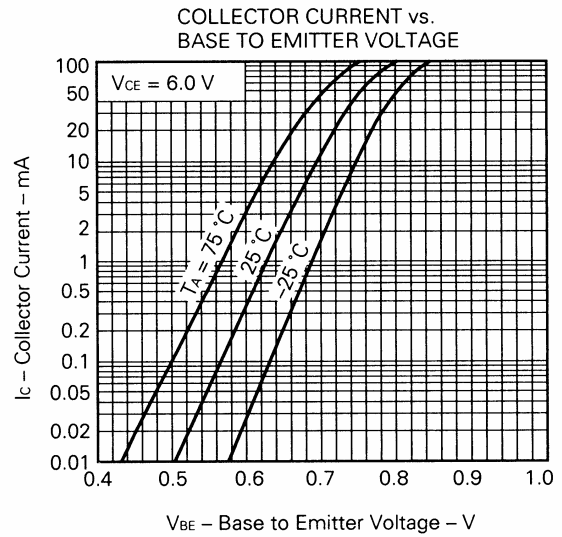
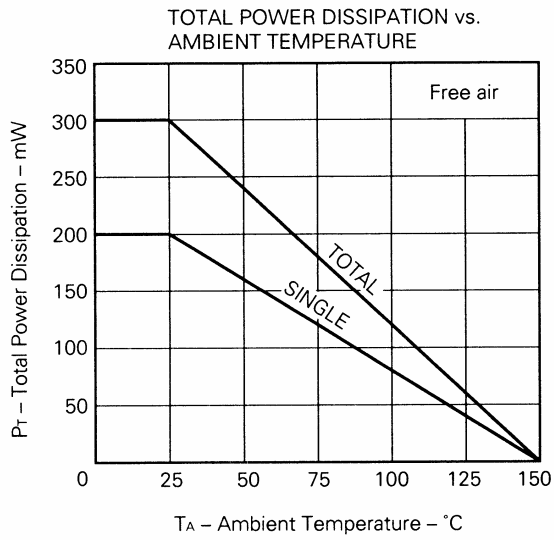
TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

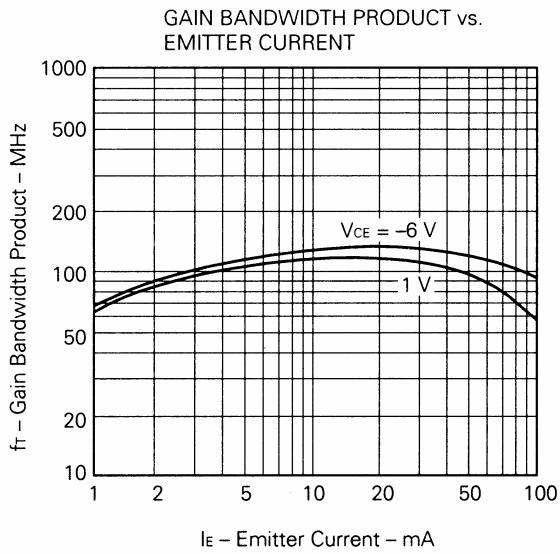
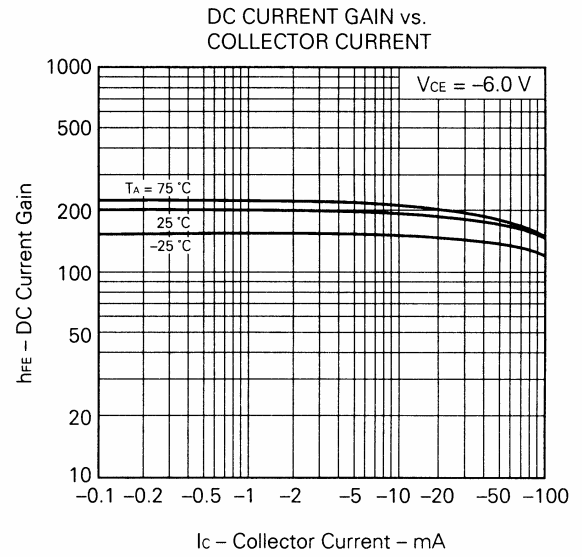
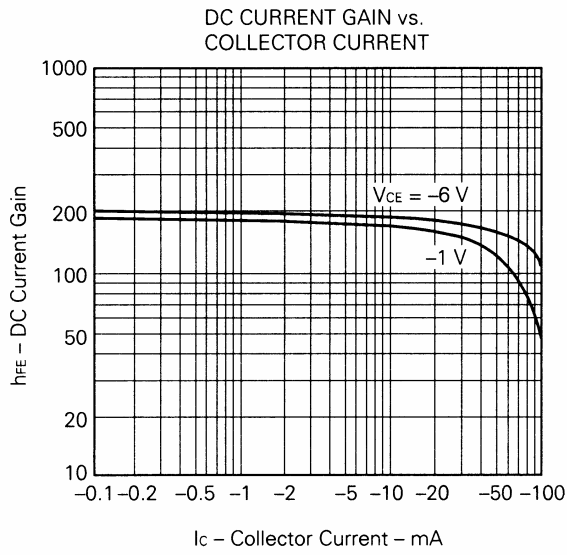
• NPN Transistor





• PNP Transistor





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