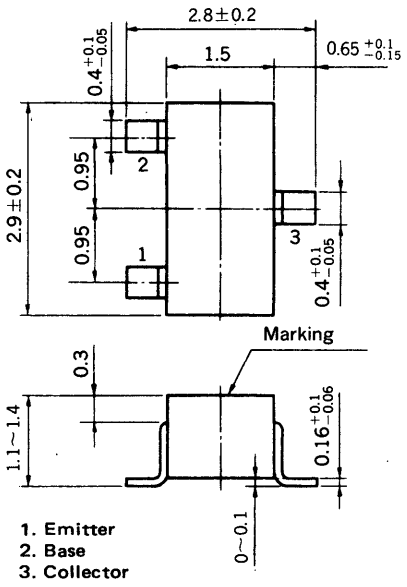
NEC
ELECTRON DEVICE

SILICON TRANSISTOR
2SA811A

AUDIO FREQUENCY HIGH GAIN AMPLIFIER
PNP SILICON EPITAXIAL TRANSISTOR
MINI MOLD

PACKAGE DIMENSIONS
in millimeters



1. Emitter
2. Base
3. Collector

FEATURE

- High DC Current Gain: h_{FE} 500 TYP. (V_{CE} = −6.0 V, I_C = −1.0 mA)

ABSOLUTE MAXIMUM RATINGS

Muximum Voltages and Current (T_a = 25 °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	200	mW
Maximum Temperatures			
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 Cutoff Current	I_{CBO}			−50	nA	V_{CB} = −120 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			−50	nA	V_{EB} = −5.0 V, I_C = 0
DC Current Gain	h_{FE1}	100	500			V_{CE} = −6.0 V, I_C = −0.1 mA*
DC Current Gain	h_{FE2}	135	500	900		V_{CE} = −6.0 V, I_C = −1.0 mA
Collector Saturation Voltage	$V_{CE(sat)}$		−0.09	−0.30	V	I_C = −10 mA, I_B = −1.0 mA
Base to Emitter Voltage	V_{BE}	−0.55	−0.61	−0.65	V	V_{CE} = −6.0 V, I_C = −1.0 mA
Gain Bandwidth Product	f_T	50	90		MHz	V_{CE} = −6.0 V, I_E = 1.0 mA
Output Capacitance	C_{ob}		2.0	3.0	pF	V_{CB} = −30 V, I_E = 0, f = 1.0 MHz

* Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

h_{FE2} Classification

Marking	C15	C16	C17	C18
h_{FE2}	135 to 270	200 to 400	300 to 600	450 to 900

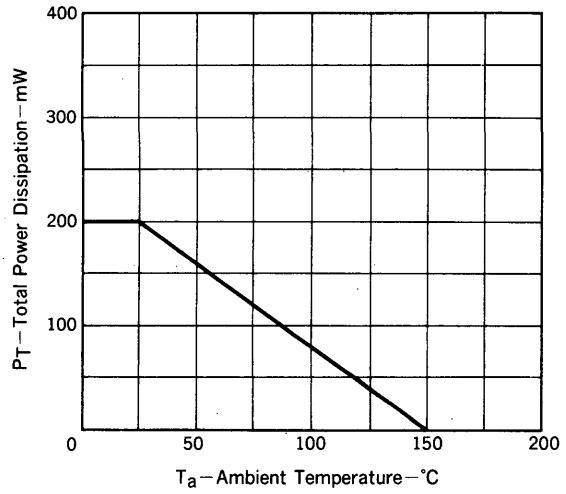
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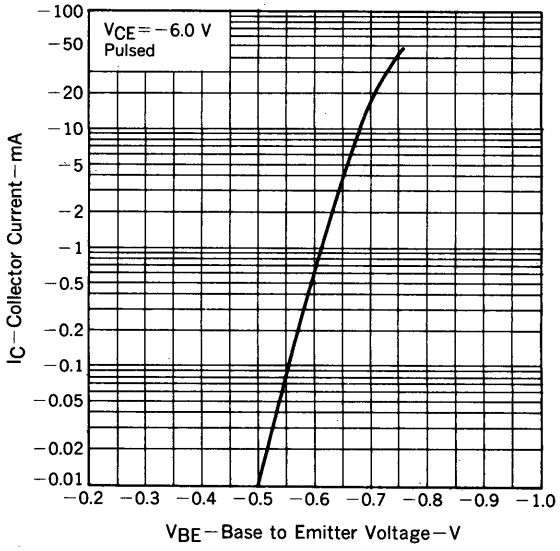
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TYPICAL CHARACTERISTICS (T_a = 25 °C)

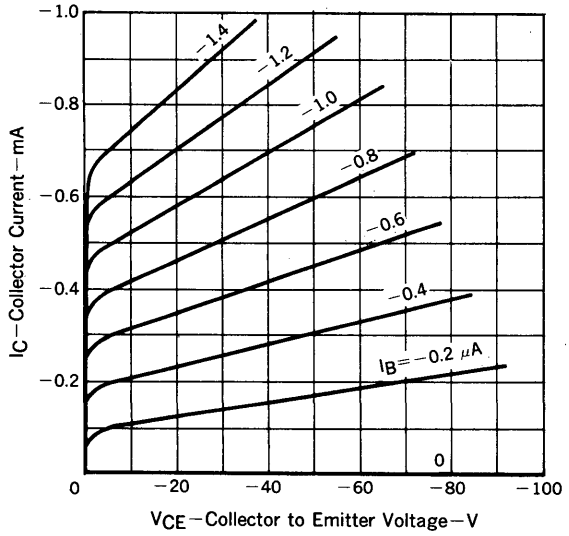
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



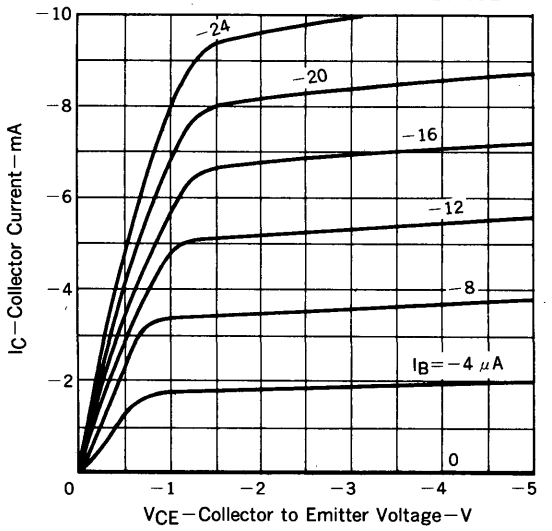
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



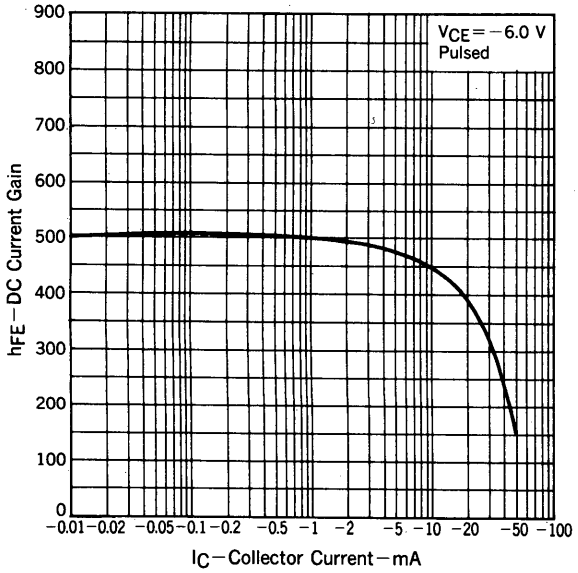
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



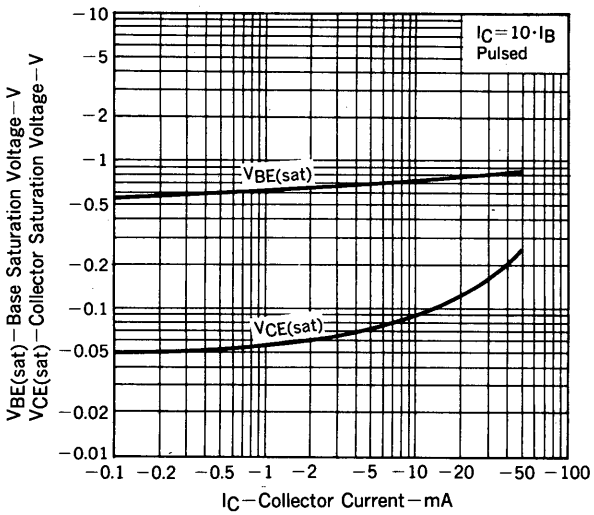
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



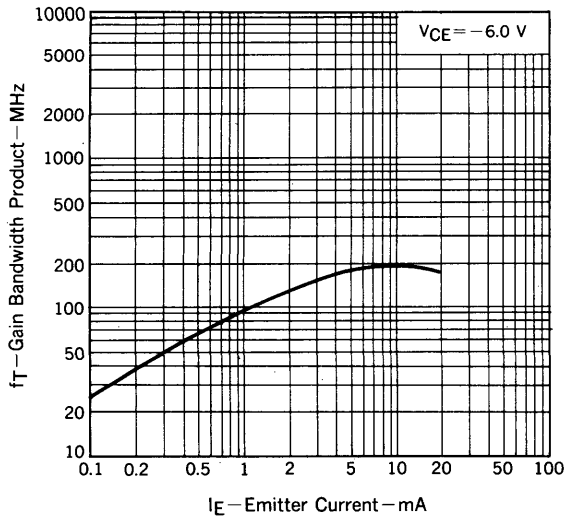
DC CURRENT GAIN vs. COLLECTOR CURRENT



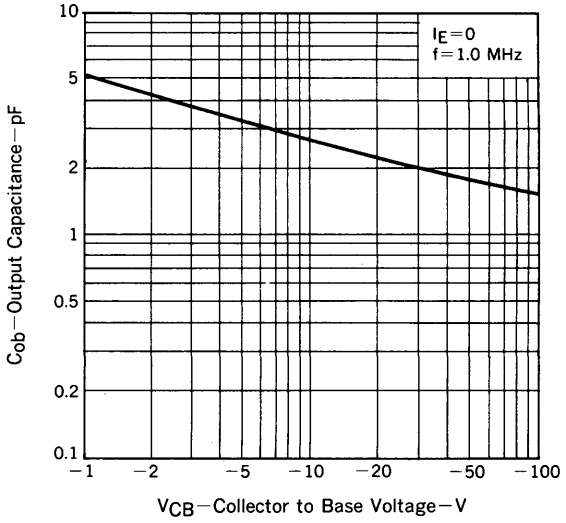
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



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