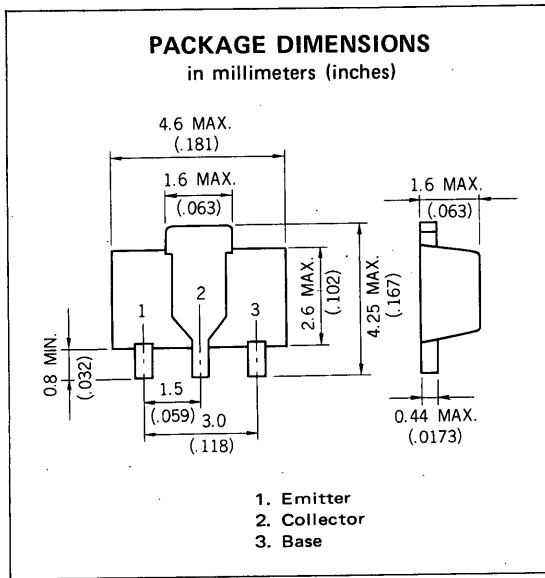


**PNP SILICON EPITAXIAL TRANSISTOR  
POWER MINI MOLD**

**DESCRIPTION**

The 2SB804 is designed for audio frequency power amplifier application, especially in Hybrid Integrated Circuits.



**FEATURES**

- World Standard Miniature Package : SOT-89
- High Collector to Base Voltage :  $V_{CBO} > -100$  V
- Excellent DC Current Gain Linearity :  $h_{FE} = 80$  TYP. ( $V_{CE} = -2.0$  V,  $I_C = -500$  mA)
- Complements to NPN type 2SD1005

**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

Maximum Voltages and Currents

Collector to Base Voltage	$V_{CBO}$	-100	V
Collector to Emitter Voltage	$V_{CEO}$	-80	V
Emitter to Base Voltage	$V_{EBO}$	-5.0	V
Collector Current (DC)	$I_C$	-1.0	A
Collector Current (Pulse)*	$I_C$	-1.5	A

Maximum Power Dissipation

Total Power Dissipation at $25^\circ\text{C}$ Ambient Temperature**	$P_T$	2.0	W
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Maximum Temperatures

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

\*PW  $\leq$  10 ms, duty cycle  $\leq$  50 %

\*\*When mounted on ceramic substrate of  $16\text{ cm}^2 \times 0.7\text{ mm}$

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

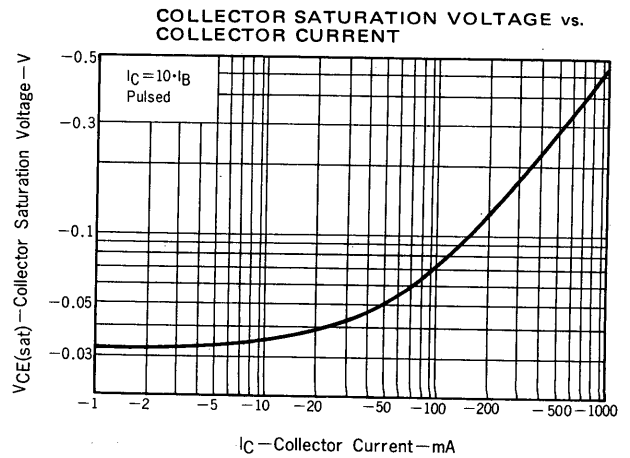
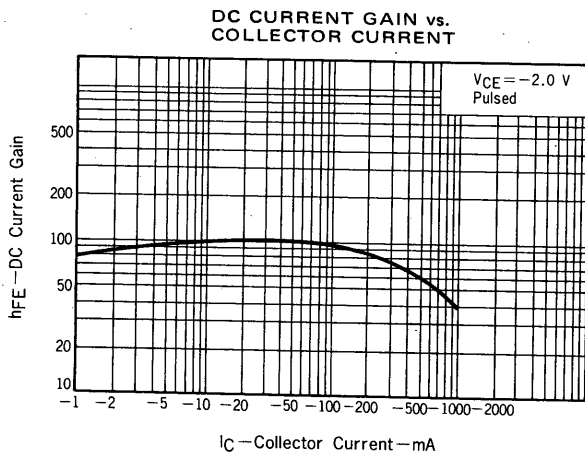
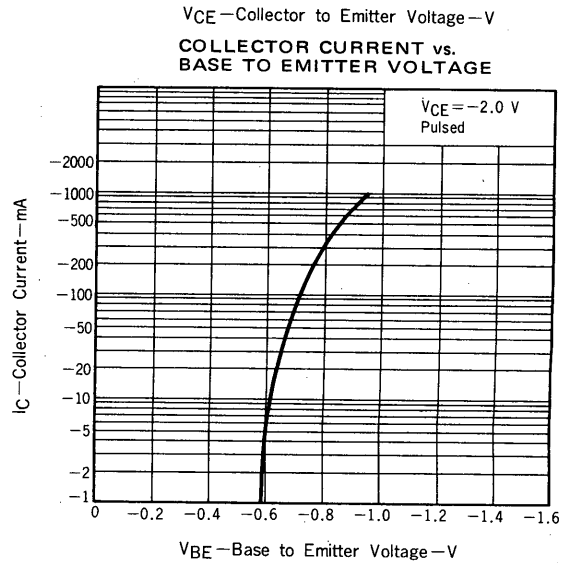
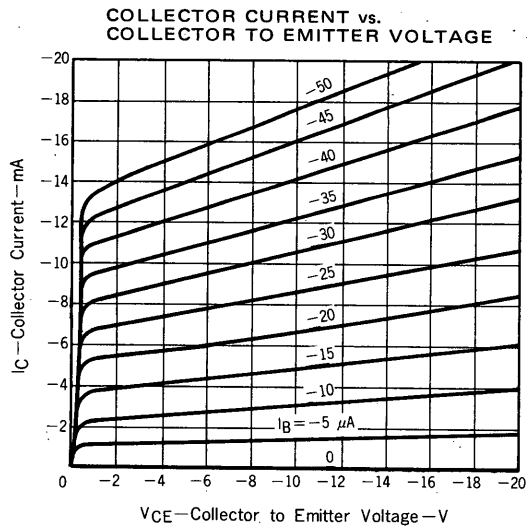
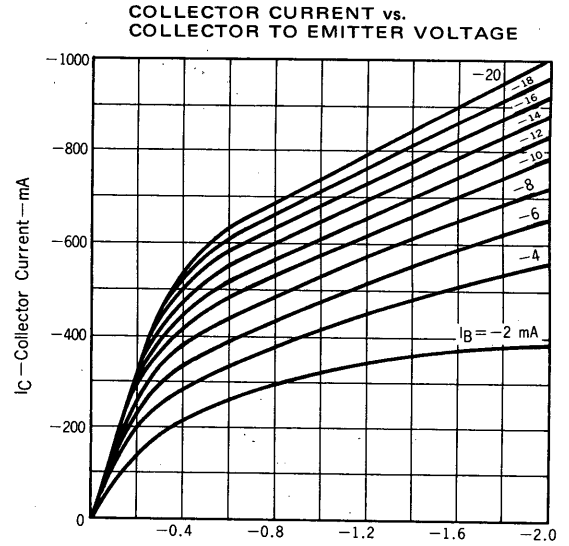
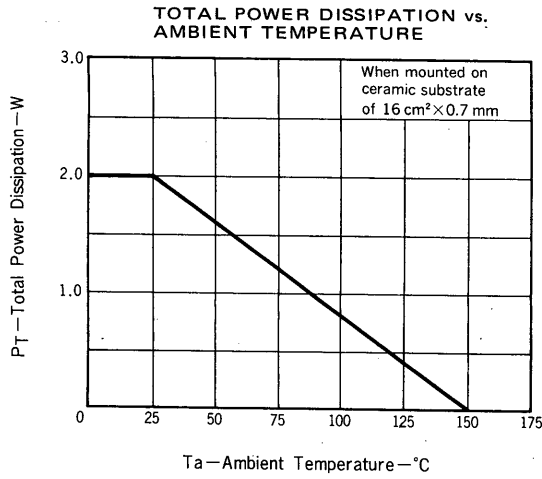
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			-100	nA	$V_{CB} = -100$ V, $I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			-100	nA	$V_{EB} = -5.0$ V, $I_C = 0$
DC Current Gain	$h_{FE1}$	90	200	400		$V_{CE} = -2.0$ V, $I_C = -100$ mA ***
DC Current Gain	$h_{FE2}$	25	80			$V_{CE} = -2.0$ V, $I_C = -500$ mA ***
Collector Saturation Voltage	$V_{CE(sat)}$		-0.29	-0.50	V	$I_C = -500$ mA, $I_B = -50$ mA ***
Base Saturation Voltage	$V_{BE(sat)}$		-0.9	-1.5	V	$I_C = -500$ mA, $I_B = -50$ mA ***
Base to Emitter Voltage	$V_{BE}$	-600	-640	-700	mV	$V_{CE} = -10$ V, $I_C = -10$ mA ***
Gain Bandwidth Product	$f_T$		80		MHz	$V_{CE} = -5.0$ V, $I_E = 10$ mA
Output Capacitance	$C_{ob}$		26		pF	$V_{CB} = -10$ V, $I_E = 0$ , $f = 1.0$ MHz

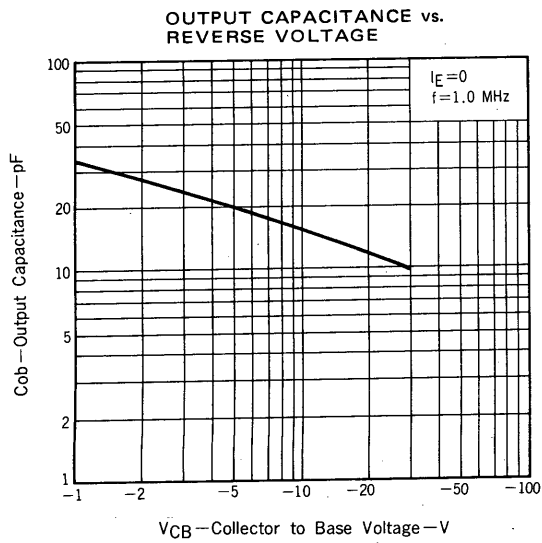
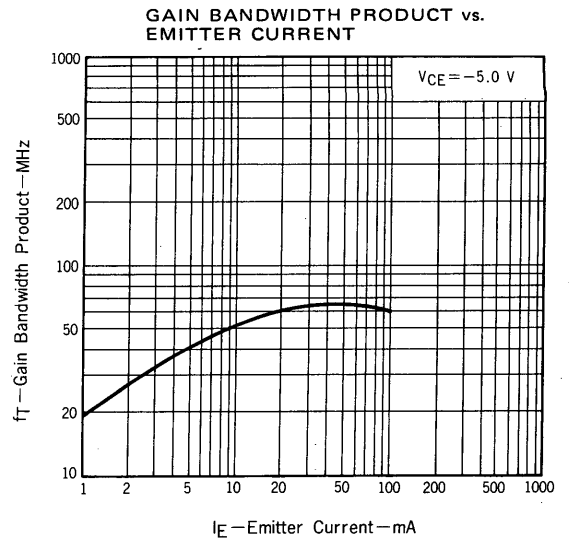
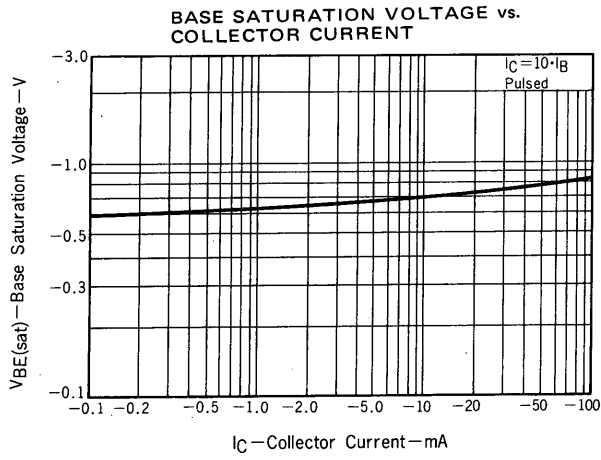
\*\*\*Pulsed: PW  $\leq$  350  $\mu\text{s}$ , duty cycle  $\leq$  2 %

**$h_{FE}$  Classification**

MARKING	AW	AV	AU
$h_{FE1}$	90 - 180	135 - 270	200 - 400

TYPICAL CHARACTERISTICS (Ta = 25 °C)





**REFERENCE**

Document Name	Document No.
NEC semiconductor device reliability/quality control system.	TEI-1202
Quality grade on NEC semiconductor devices.	IEI-1209
Semiconductor device mounting technology manual.	IEI-1207
Semiconductor device package manual.	IEI-1213
Guide to quality assurance for semiconductor devices.	MEI-1202
Semiconductor selection guide.	MF-1134

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