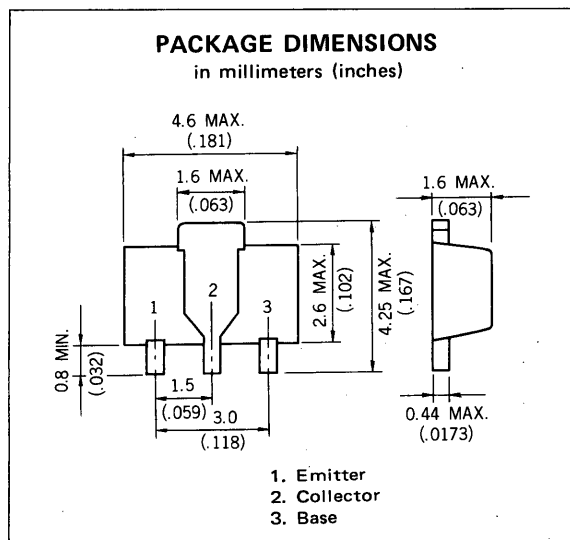


**PNP SILICON EPITAXIAL TRANSISTOR  
POWER MINI MOLD**

**DESCRIPTION**

The 2SB800 is designed for audio frequency power amplifier application, especially in Hybrid Integrated Circuits.



**FEATURES**

- World Standard Miniature Package : SOT-89
- High Collector to Emitter Voltage :  $V_{CEO} > -80$  V
- Complements to NPN type 2SD1001

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

Maximum Voltages and Currents

Collector to Base Voltage	$V_{CBO}$	-80	V
Collector to Emitter Voltage	$V_{CEO}$	-80	V
Emitter to Base Voltage	$V_{EBO}$	-5.0	V
Collector Current (DC)	$I_C$	-300	mA
Collector Current (Pulse)*	$I_C$	-500	mA

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  $16\text{ cm}^2 \times 0.7$  mm

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

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			-100	nA	$V_{CB} = -80$ 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		$V_{CE} = -1.0$ V, $I_C = -50$ mA ***
DC Current Gain	$h_{FE2}$	30	80			$V_{CE} = -2.0$ V, $I_C = -300$ mA ***
Collector Saturation Voltage	$V_{CE(sat)}$		-0.3	-0.60	V	$I_C = -300$ mA, $I_B = -30$ mA ***
Base Saturation Voltage	$V_{BE(sat)}$		-0.9	-1.2	V	$I_C = -300$ mA, $I_B = -30$ mA ***
Base to Emitter Voltage	$V_{BE}$	-600	-660	-700	mV	$V_{CE} = -6.0$ V, $I_C = -10$ mA ***
Gain Bandwidth Product	$f_T$		100		MHz	$V_{CE} = -6.0$ V, $I_E = 10$ mA
Output Capacitance	$C_{ob}$		13		pF	$V_{CB} = -6.0$ V, $I_E = 0$ , $f = 1.0$ MHz

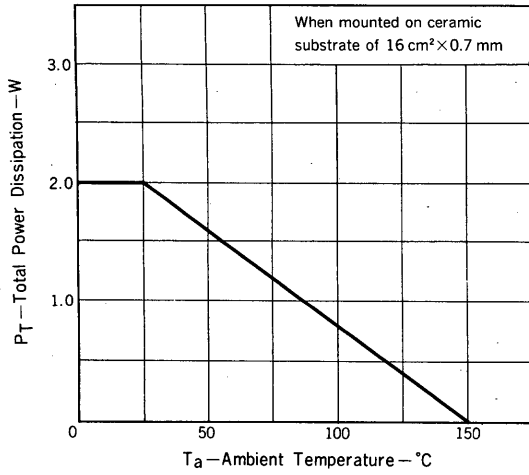
\*\*\*Pulsed:  $PW \leq 350$   $\mu\text{s}$ , duty cycle  $\leq 2$  %

**$h_{FE}$  Classification**

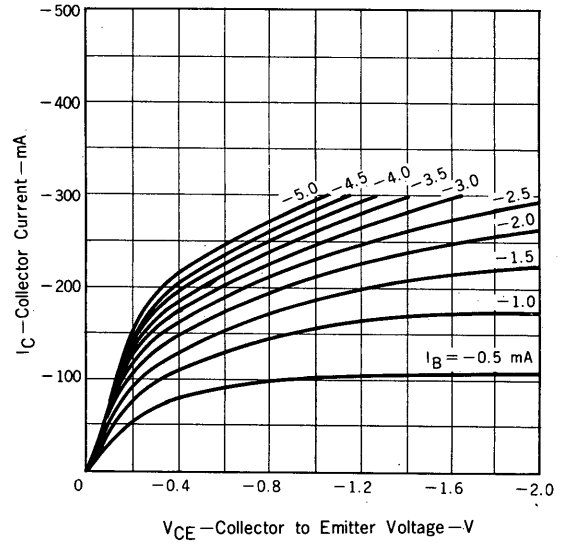
MARKING	FM	FL	FK
$h_{FE1}$	90 - 180	135 - 270	200 - 400

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

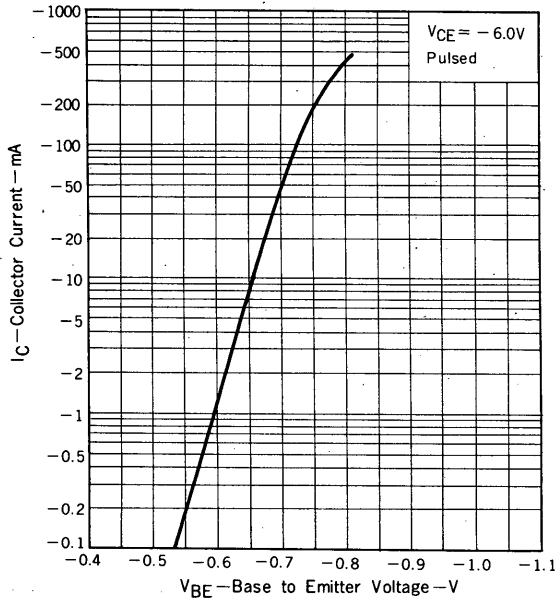
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



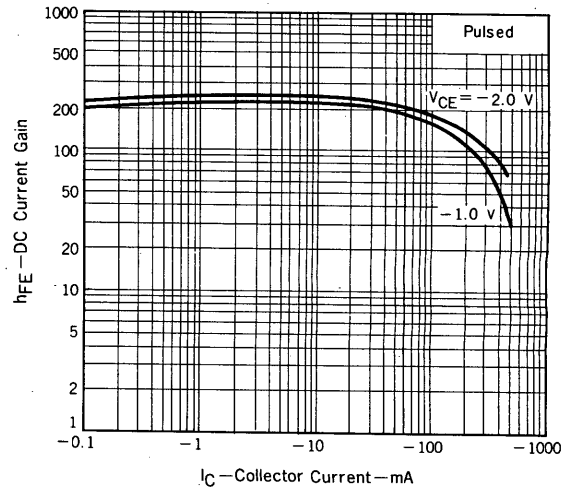
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



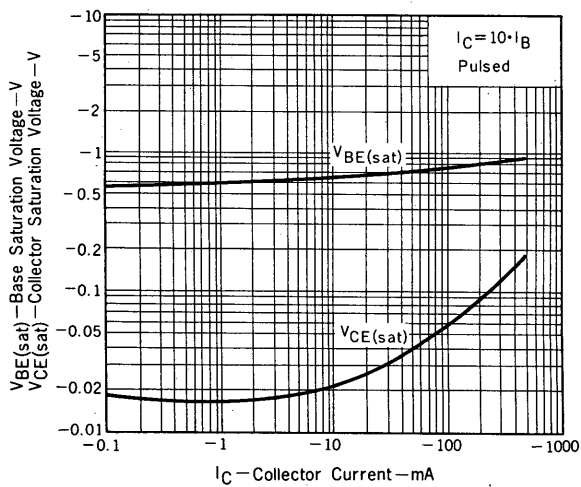
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



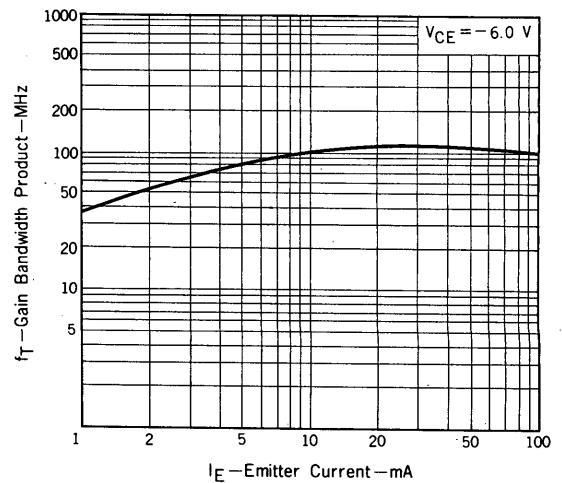
DC CURRENT GAIN vs. COLLECTOR CURRENT



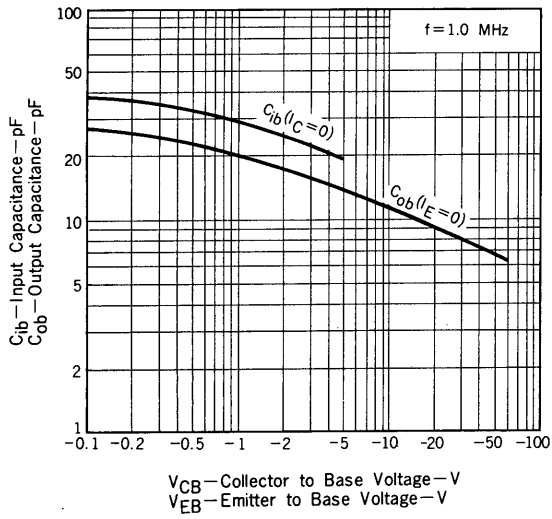
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



INPUT AND OUTPUT CAPACITANCE  
vs. REVERSE VOLTAGE



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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