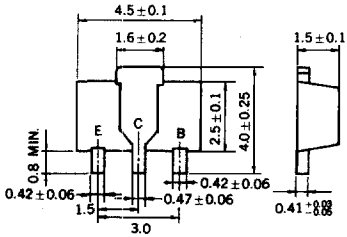
SILICON TRANSISTORS
2SB805,2SB806

PNP SILICON EPITAXIAL TRANSISTOR
POWER MINI MOLD

DESCRIPTION
The 2SB805 and 2SB806 are designed for audio frequency power amplifier application, especially in Hybrid Integrated Circuits.

PACKAGE DIMENSIONS
in millimeters



1. Emitter
2. Collector
3. Base

SOT-89

FEATURES
- World Standard Miniature Package : SOT−89
- High Collector to Emitter Voltage : $V_{CEO} > -120$ V (2SB806),
  : $V_{CEO} > -100$ V (2SB805)
- Complement to NPN type 2SD1006 and 2SD1007 respectively

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents (T_a = 25 °C)		2SB805	2SB806	
Collector to Base Voltage	V_{CBO}	−100	−120	V
Collector to Emitter Voltage	V_{CEO}	−100	−120	V
Emitter to Base Voltage	V_{EBO}	−5.0		V
Collector Current (DC)	I_C	−0.7		A
Collector Current (Pulse)*	I_C	−1.2		A
Maximum Power Dissipation				
Total Power Dissipation at 25 °C Ambient Temperature**	P_T	2.0		W
Maximum Temperatures				
Junction Temperature	T_j	150		°C
Storage Temperature Range	T_{stg}	−55 to +150		°C

*PW ≤ 10 ms, duty cycle ≤ 50 %
**When mounted on ceramic substrate of 2.5 cm^2 x 0.7 mm

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS	
Collector Cutoff Current	I_{CBO}			−100	nA	2SB805	V_{CB} = −100 V, I_E = 0
				−100	nA	2SB806	V_{CB} = −120 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			−100	nA	V_{EB} = −5.0 V, I_C = 0	
DC Current Gain	h_{FE1}	45	200			V_{CE} = −1.0 V, I_C = −5.0 mA	***
DC Current Gain	h_{FE2}	90	200	400		V_{CE} = −1.0 V, I_C = −100 mA	***
Collector Saturation Voltage	$V_{CE(sat)}$		−0.4	−0.6	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}	−550	−620	−650	mV	V_{CE} = −10 V, I_C = −10 mA	***
Gain Bandwidth Product	f_T		75		MHz	V_{CE} = −10 V, I_E = 10 mA	
Output Capacitance	C_{ob}		14		pF	V_{CB} = −10 V, I_E = 0, f = 1.0 MHz	

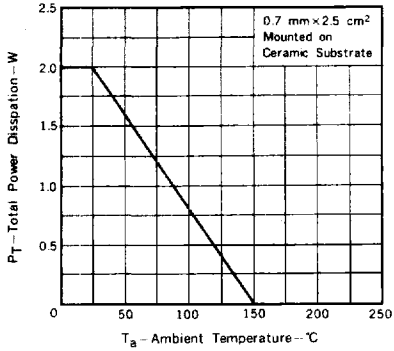
***Pulsed : PW ≤ 350 μs, duty cycle ≤ 2 %

h_{FE} Classification

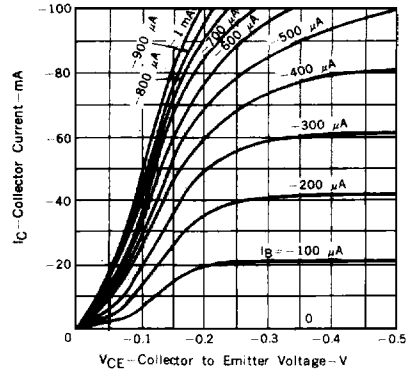
MARKING	2SB805	KM	KL	KK
	2SB806	KR	KQ	KP
h_{FE}		90 − 180	135 − 270	200 − 400

TYPICAL CHARACTERISTICS (T_a = 25 °C)

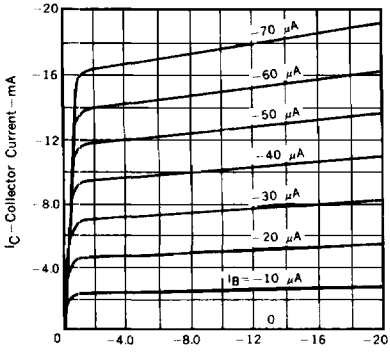
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



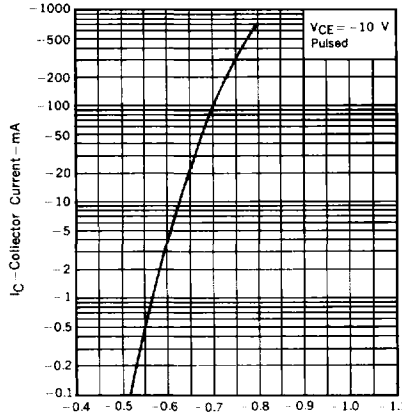
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



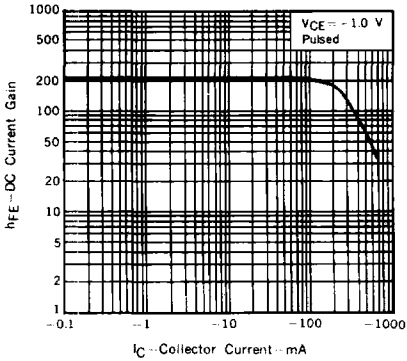
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



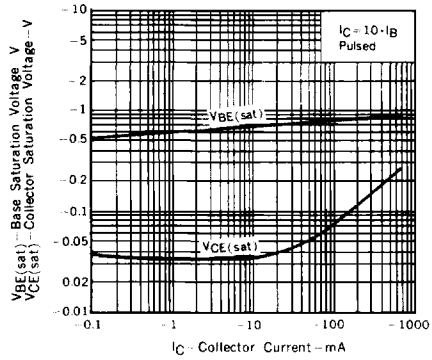
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



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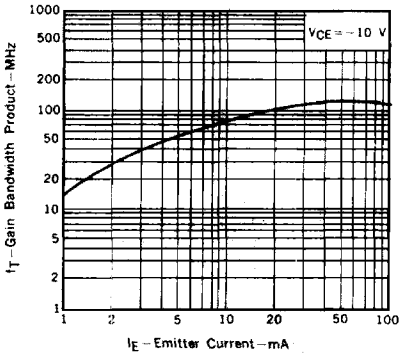
GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
REVERSE VOLTAGE