

SOT-89 Plastic-Encapsulate Transistors

SILICON TRANSISTORS 2SD1006 2SD1007

DESCRIPTION

The 2SD1006 and 2SD1007 are designed for audio frequency power amplifier application, especially in Hybrid Integrated Circuits.

FEATURES

- World Standard Miniature Package : SOT-89
- High Collector to Emitter Voltage : $V_{CE0} > 120\text{ V}$ (2SD1007)
: $V_{CE0} > 100\text{ V}$ (2SD1006)
- Complement to PNP type 2SB805 and 2SB806 respectively.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)				
	2SD1006	2SD1007		
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		$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150		$^\circ\text{C}$

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

**When mounted on ceramic substrate of $16\text{ cm}^3 \times 0.7\text{ mm}$



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

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS	
Collector Cutoff Current	I_{CBO}			100	nA	2SD1006	$V_{CB}=100\text{ V}, I_E=0$
				100	nA	2SD1007	$V_{CB}=120\text{ V}, I_E=0$
Emitter Cutoff Current	I_{EBO}			100	nA	$V_{EB}=5.0\text{ V}, I_C=0$	
DC Current Gain	h_{FE1}	45	200			$V_{CE}=1.0\text{ V}, I_C=5.0\text{ mA}$	
DC Current Gain	h_{FE2}	90	200	400		$V_{CE}=1.0\text{ V}, I_C=100\text{ mA}$	
Collector Saturation Voltage	$V_{CE(sat)}$		0.3	0.6	V	$I_C=500\text{ mA}, I_B=50\text{ mA}$	
Base Saturation Voltage	$V_{BE(sat)}$		0.9	1.5	V	$I_C=500\text{ mA}, I_B=50\text{ mA}$	
Base to Emitter Voltage	V_{BE}	550	620	650	mV	$V_{CE}=10\text{ V}, I_C=10\text{ mA}$	
Gain Bandwidth Product	f_T		90		MHz	$V_{CE}=10\text{ V}, I_E=-10\text{ mA}$	
Output Capacitance	C_{ob}		10		pF	$V_{CB}=10\text{ V}, I_E=0, f=1.0\text{ MHz}$	

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

h_{FE} Classification

MARKING	2SD1006	HM	HL	HK
	2SD1007	HR	HQ	HP
h_{FE}		90-180	135-270	200-400



CHINA BASE
INTERNATIONAL

SOT-89

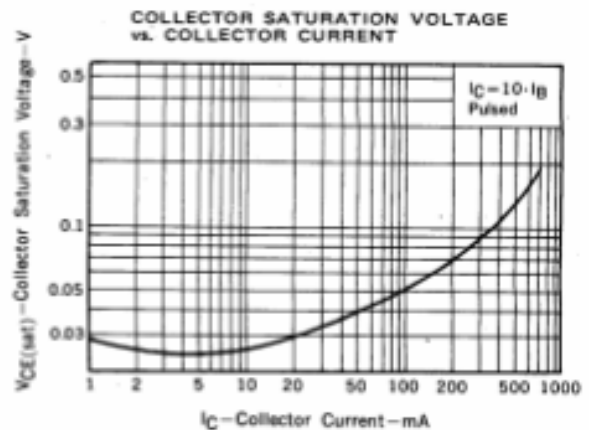
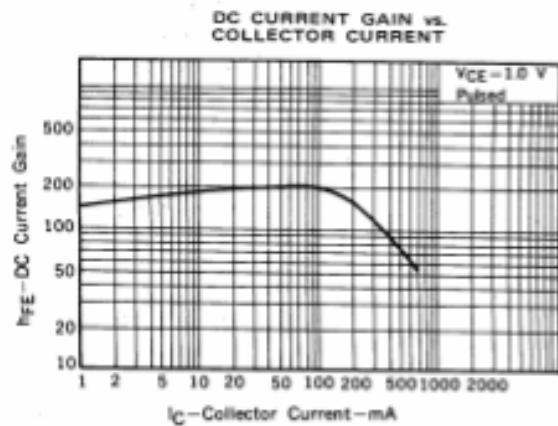
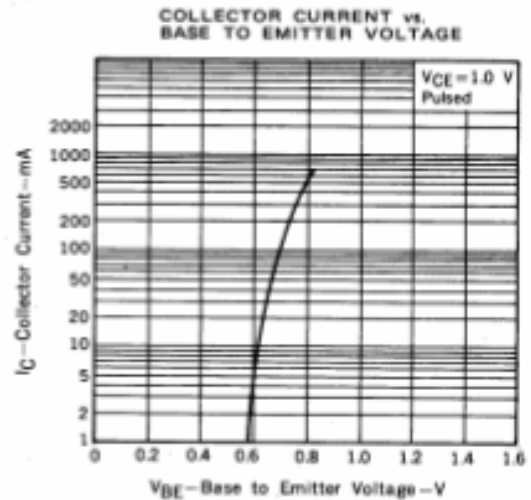
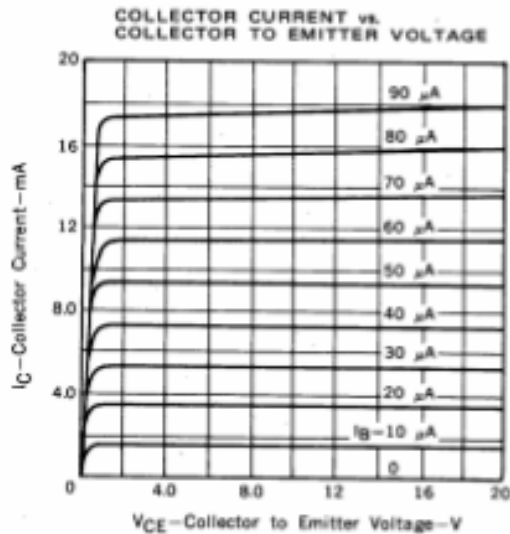
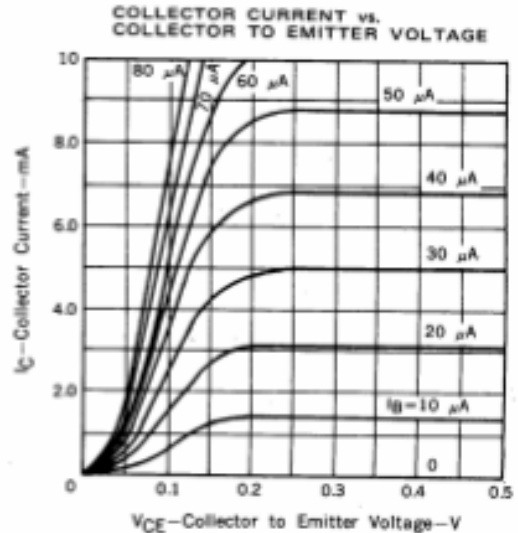
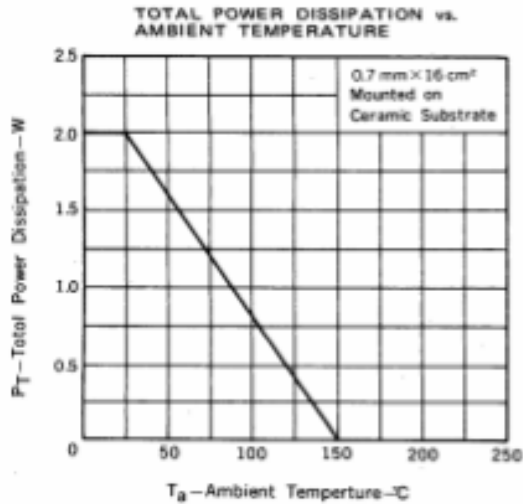
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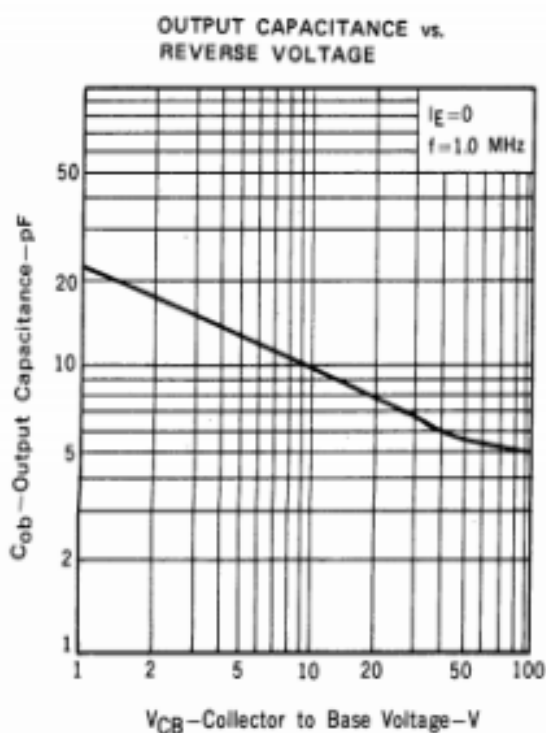
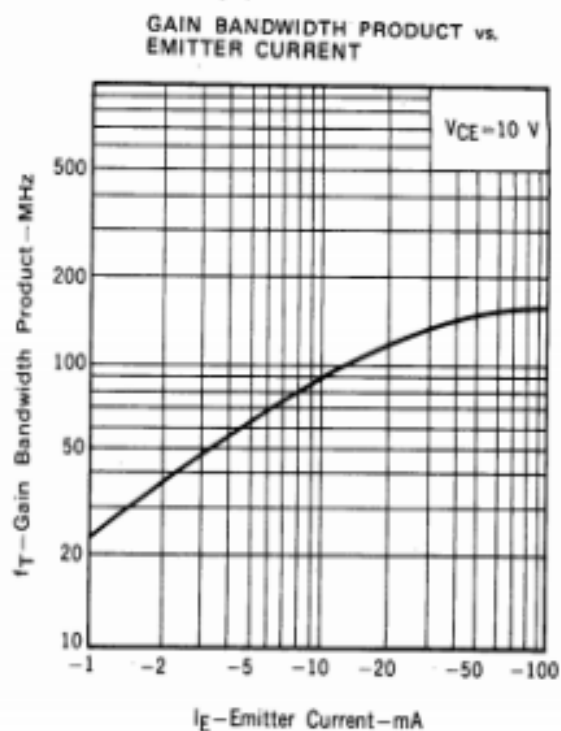
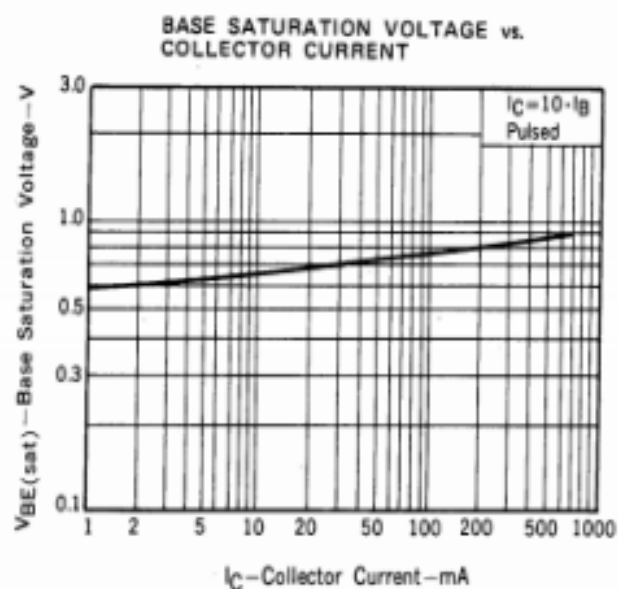
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TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

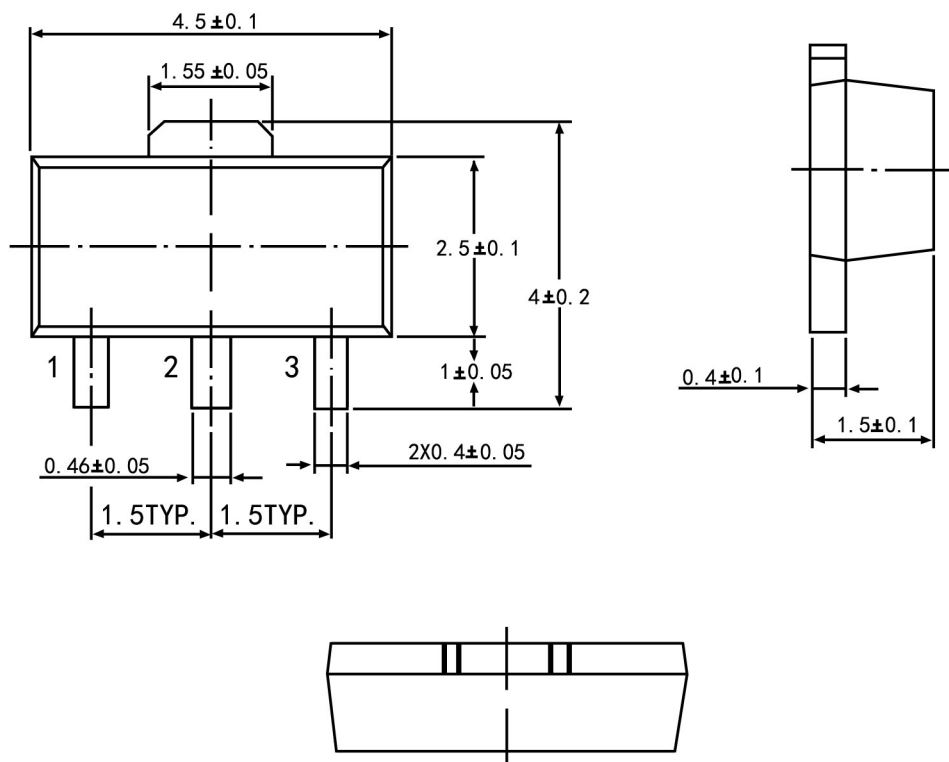
2SD1006 2SD1007



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SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20

All Dimensions In mm