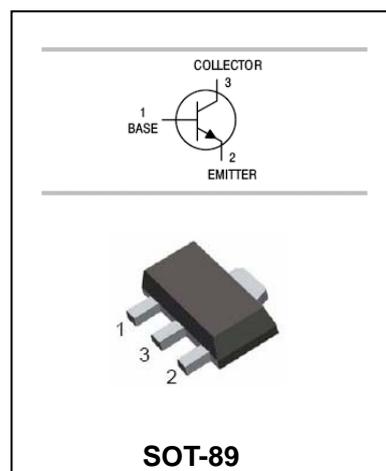


NPN SILICON EPITAXIAL TRANSISTOR

2SD1007

FEATURES

- World Standard Miniature Package
- High Collector to Emitter Voltage:
 $V_{CEO} > 120V$
- Complements to PNP type 2SB806 respectively.



ORDERING INFORMATION

Type No.	Marking	Package Code
2SD1007	HR/HQ/HP	SOT-89

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current (DC)	0.7	A
P_T	Total power dissipation	2.0	W
T_j	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55 to +150	°C



NPN SILICON EPITAXIAL TRANSISTOR

2SD1007

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector cut-off current	I_{CBO}	$V_{CB}=120V, I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C/I_B=500mA/50mA$		0.3	0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C/I_B=500mA/50mA$		0.9	1.5	V
Base-emitter voltage	V_{BE}	$V_{CE}=10V, I_C=10mA$	550	620	650	mV
DC current gain(note)	h_{FE}	$V_{CE}=1.0V, I_C=5.0mA$	45	200		
		$V_{CE}=1.0V, I_C=100mA$	90	200	400	
Current gain bandwidth product	f_T	$V_{CE}=10V, I_E=-10mA$		90		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz, I_E=0A$		10		pF

CLASSIFICATION OF h_{FE2}

RANGE	90-180	135-270	200-400
MARKING	HR	HQ	HP

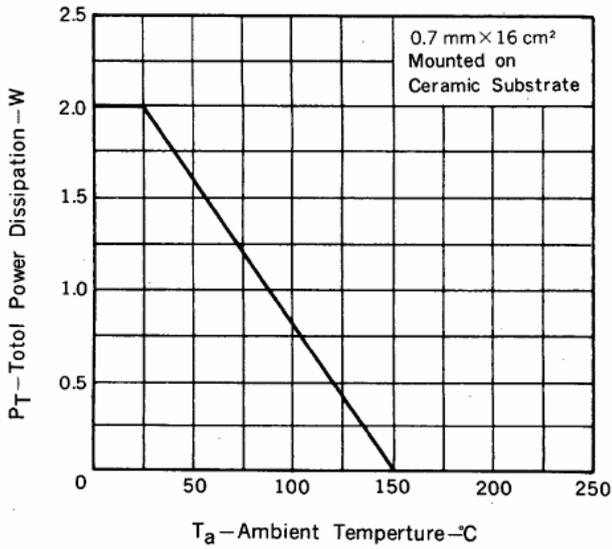


NPN SILICON EPITAXIAL TRANSISTOR

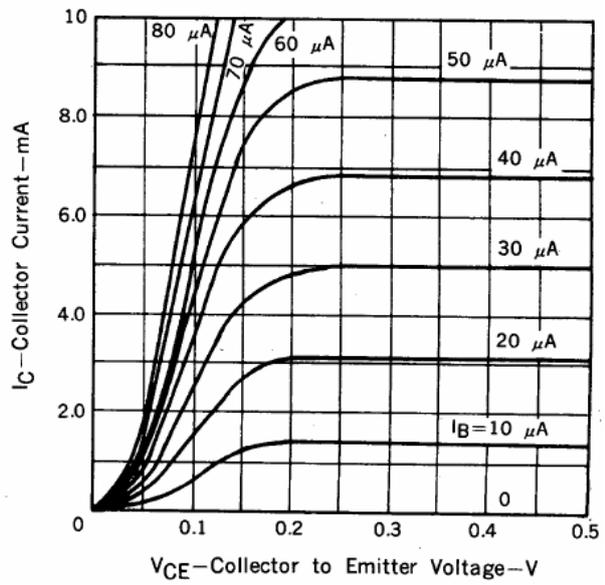
2SD1007

TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

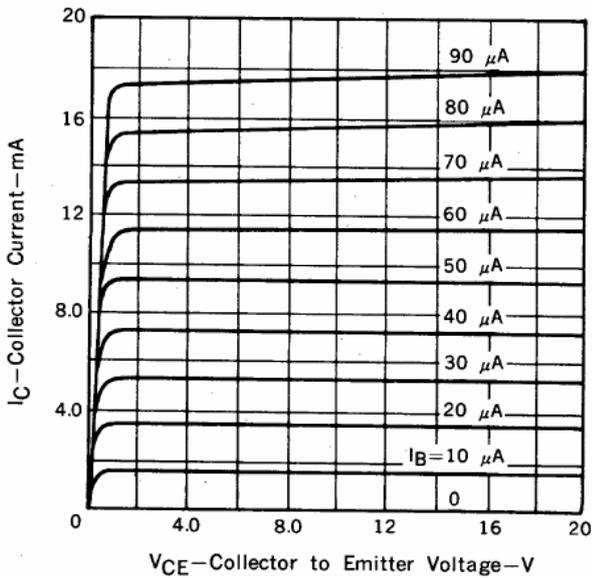
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



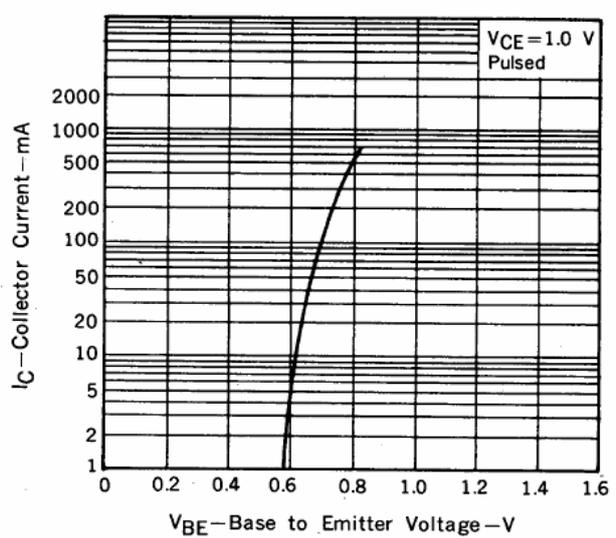
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE

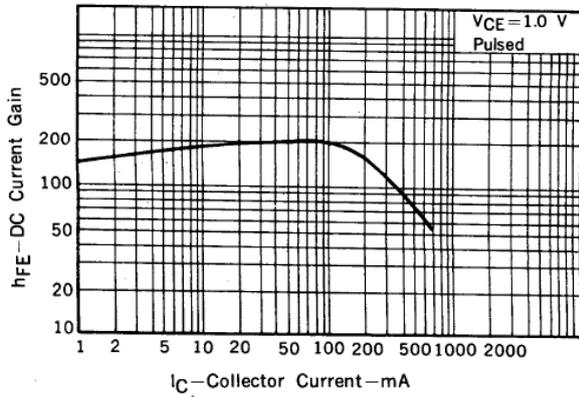




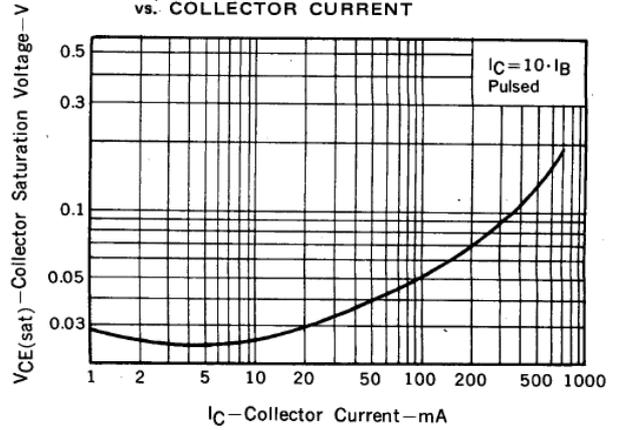
NPN SILICON EPITAXIAL TRANSISTOR

2SD1007

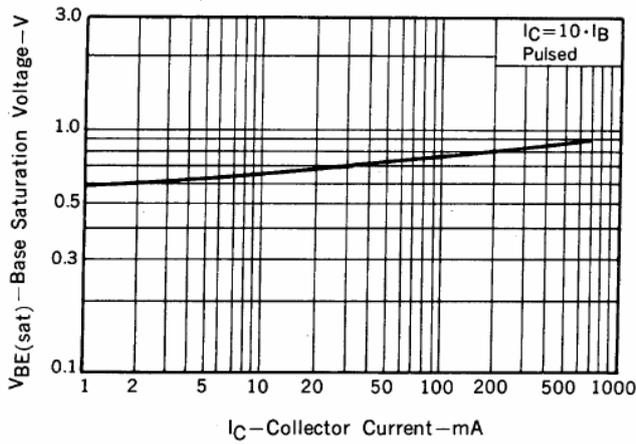
DC CURRENT GAIN vs.
COLLECTOR CURRENT



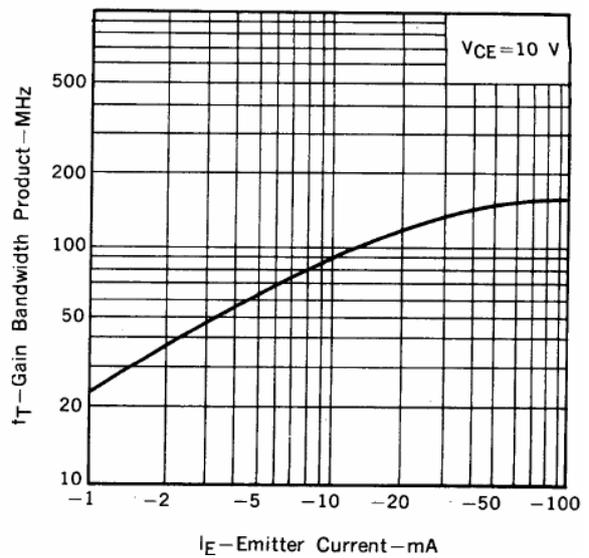
COLLECTOR SATURATION VOLTAGE
vs. COLLECTOR CURRENT



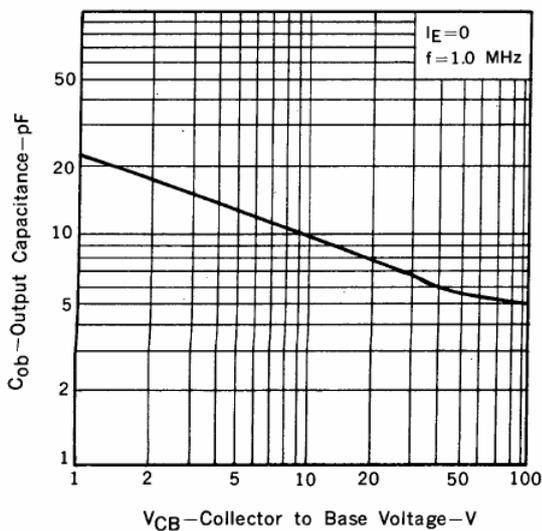
BASE SATURATION VOLTAGE vs.
COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
REVERSE VOLTAGE



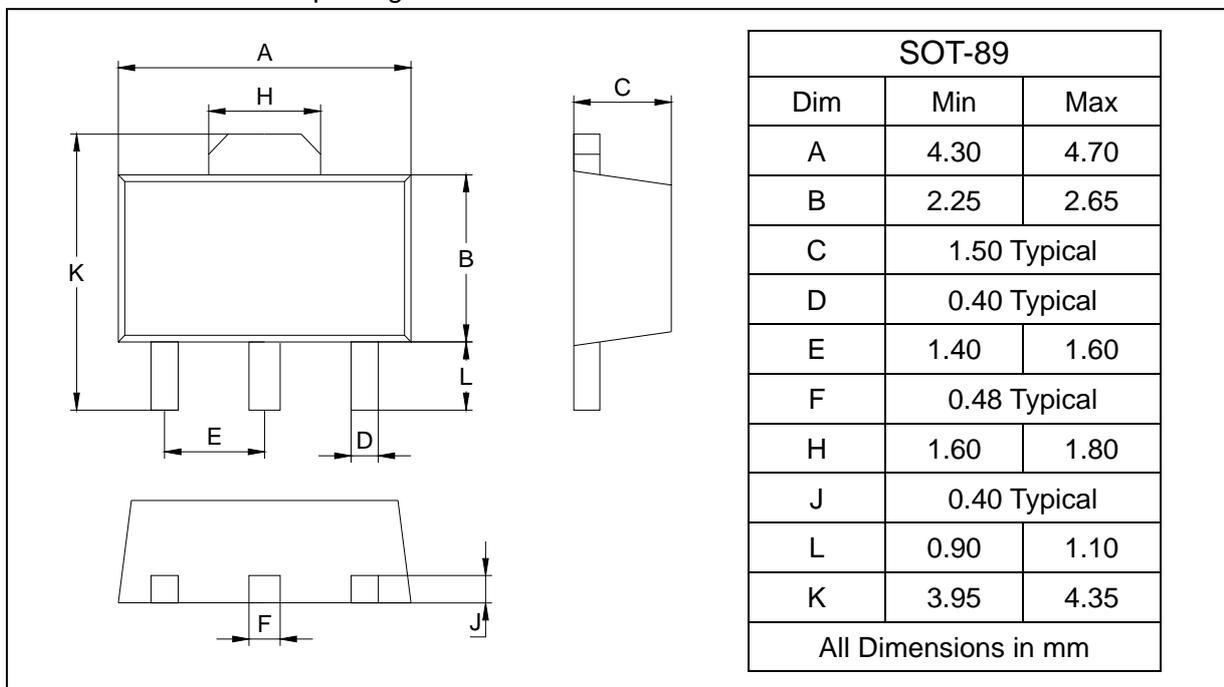
NPN SILICON EPITAXIAL TRANSISTOR

2SD1007

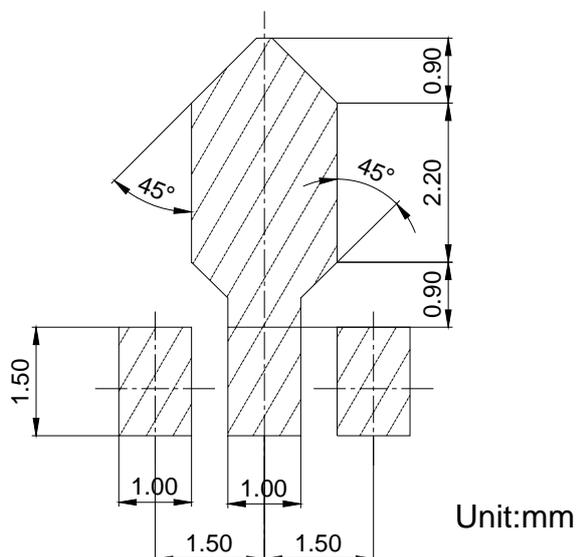
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2SD1007	SOT-89	1000/Tape&Reel