

PNP Silicon Epitaxial Planar Transistor

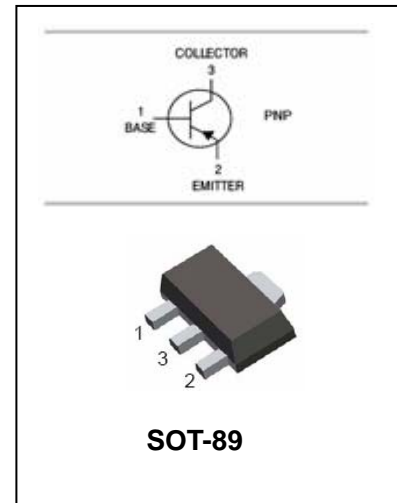
2SB1386

FEATURES

- Low $V_{CE(sat)} = -0.35V$ (Typ.)
($I_C/I_B = -4A/-0.1A$).
- Excellent DC current gain characteristics.
- Complementary: 2SD2098.



Lead-free



APPLICATIONS

- Low frequency transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
2SB1386	BHP/BHQ/BHR	SOT-89

MAXIMUM RATING @ $T_a = 25^\circ C$ unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-30	V
V_{CEO}	Collector-Emitter Voltage	-20	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current	DC Pulse -5 -10	A
P_C	Collector Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	300	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance, Junction-to-Case	80	$^\circ C/W$
T_j, T_{stg}	Junction and Storage Temperature	-55 to +150	$^\circ C$



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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-50\mu A, I_E=0$	-30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1.0mA, I_B=0$	-20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-50\mu A, I_C=0$	-6			V
Collector cut-off current	I_{CBO}	$V_{CB}=-20V, I_B=0$			-0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5V, I_C=0$			-0.5	μA
DC current gain	h_{FE}	$V_{CE}=-2V, I_C=-500mA$	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-4A, I_B=-0.1A$		-0.35	-1.0	V
Transition frequency	f_T	$V_{CE}=-6V, I_C=-50mA$ $f=100MHz$		120		MHz
Collector output capacitance	C_{ob}	$V_{CB}=-20V, I_E=0, f=1MHz$		60		pF

CLASSIFICATION OF h_{FE}

Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	BHP	BHQ	BHR

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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

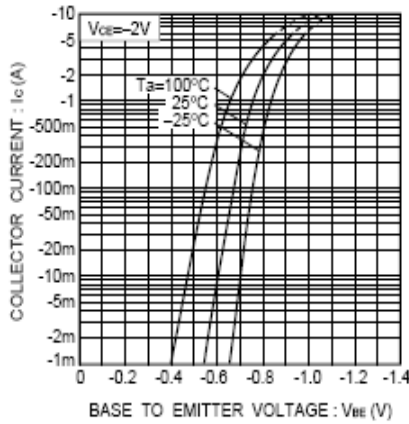


Fig.1 Grounded emitter propagation characteristics

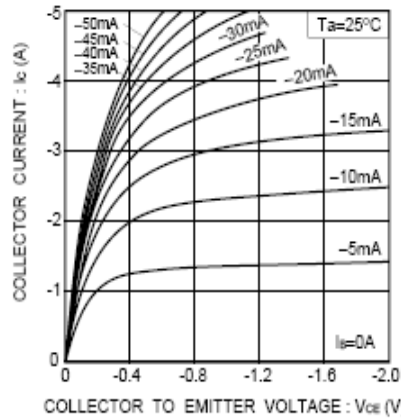


Fig.2 Grounded emitter output characteristics

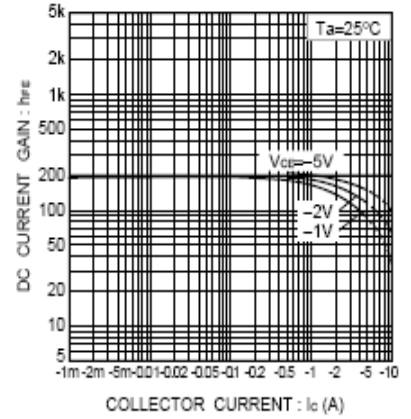


Fig.3 DC current gain vs. collector current (I)

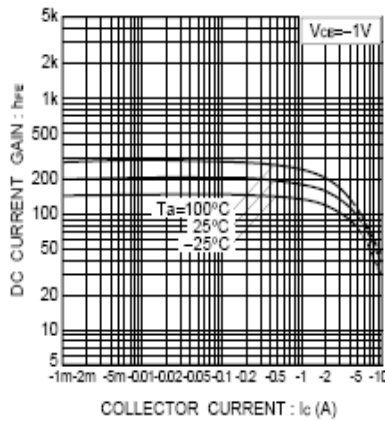


Fig.4 DC current gain vs. collector current (II)

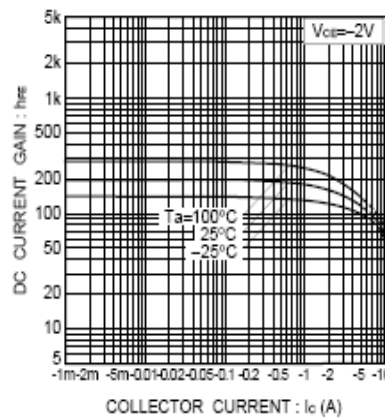


Fig.5 DC current gain vs. collector current (III)

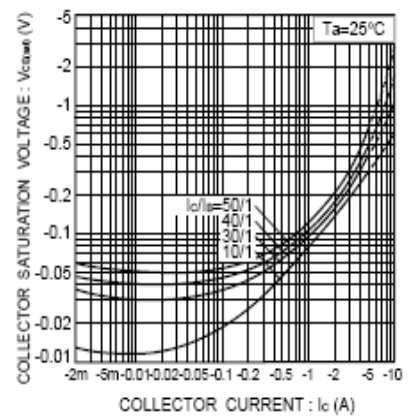


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

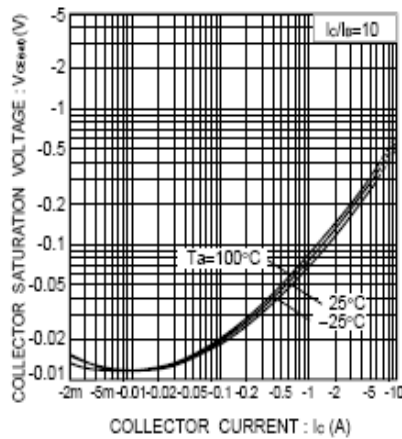


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

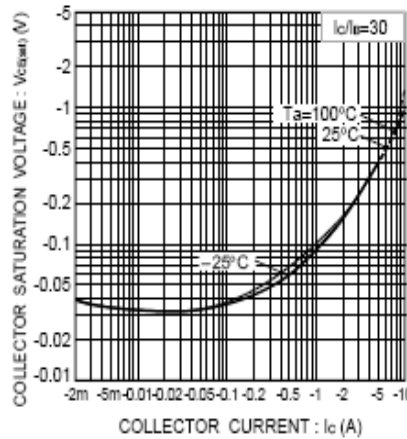


Fig.8 Collector-emitter saturation voltage vs. collector current (III)

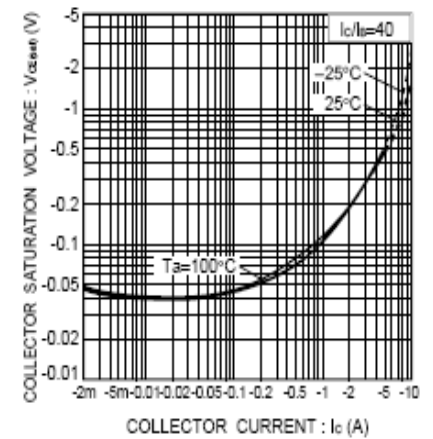


Fig.9 Collector-emitter saturation voltage vs. collector current (IV)



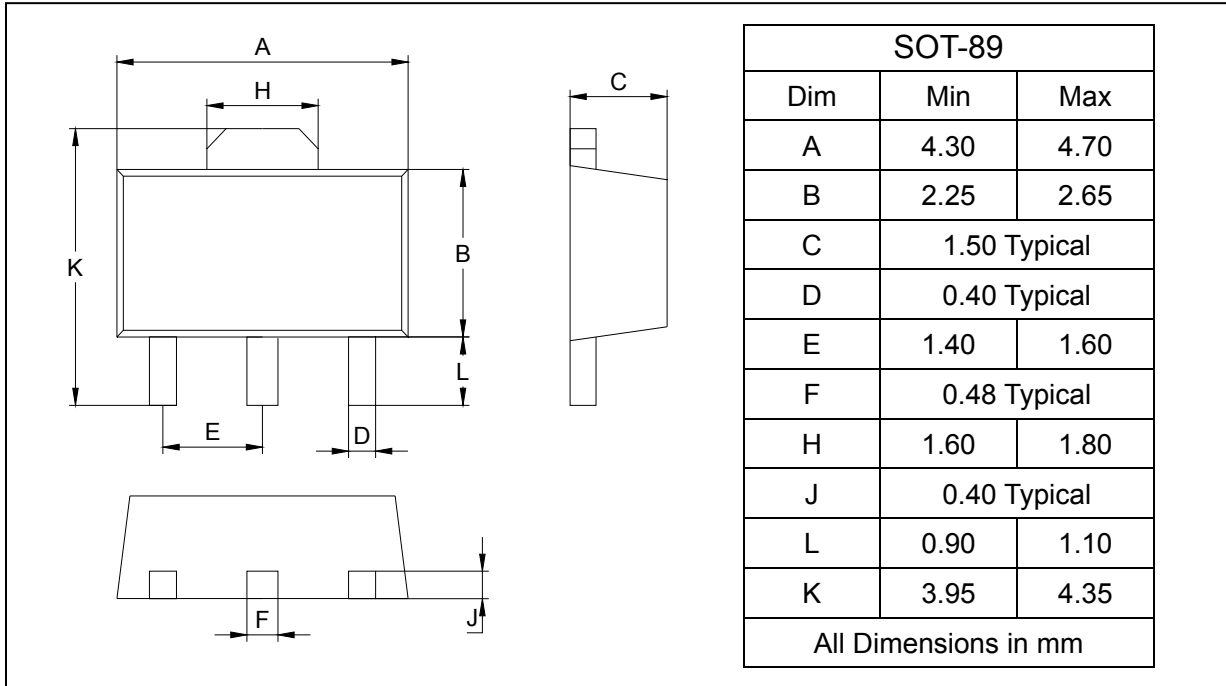
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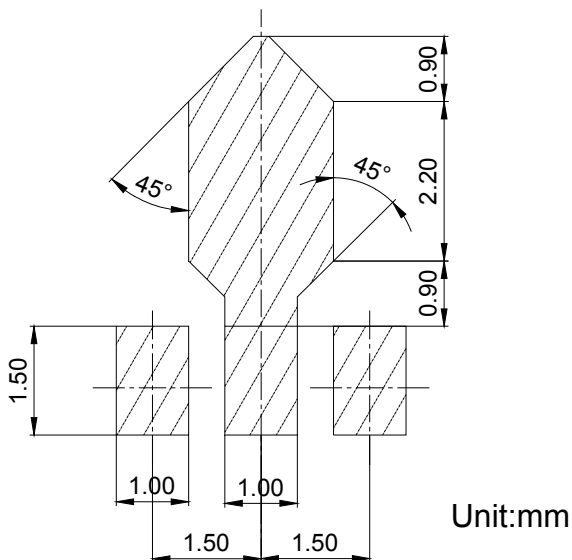
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2SB1386	SOT-89	1000/Tape&Reel