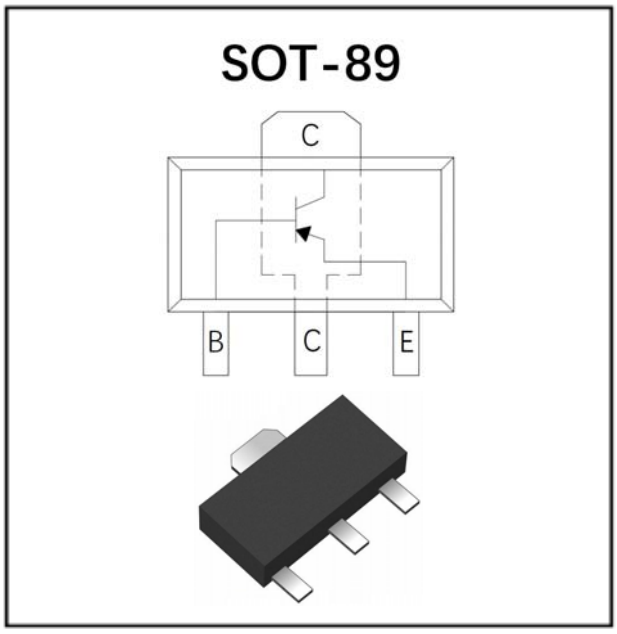
PNP General Purpose Amplifier



Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix ”HF”
- Moisture sensitivity level 1
- Low collector-emitter saturation voltage

Mechanical Data

- **Package**: SOT-89

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free

- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking:A1013

■Maximum Ratings (Ta=25℃ unless otherwise noted)

Item	Symbol	Unit	Conditions	Value
Minimum Collector-Emitter Voltage	V_{CEO}	V	I_C=-10mA, I_B=0	-160
Minimum Collector-Base Voltage	V_{CBO}	V	I_C=-100uA, I_E=0	-160
Minimum Emitter-Base Voltage	V_{EBO}	V	I_E=-100uA, I_C=0	-6
Collector Current	I_C	A		-1
Collector Power Dissipation	P_C	mW		500
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	℃/W		250
Operation Junction Temperature	T_j	℃		-55 to +150
Storage Temperature	T_{stg}	℃		-55 to +150

■Electrical Characteristics (Ta=25℃ unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Voltage	V_{CEO}	V	I_C=-10mA, I_B=0	-160	
Collector-Base Voltage	V_{CBO}	V	I_C=-100uA, I_E=0	-160	
Emitter-Base Voltage	V_{EBO}	V	I_E=-100uA, I_C=0	-6	
Collector-base Cut-off Current	I_{CBO}	uA	V_{CB}=-150V		-1
Base-emitter Cut-off Current	I_{EBO}	uA	V_{EB}=-6V		-1
DC Current Gain	h_{FE}		I_C=-200mA V_{CE}=-5V	60	320
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	I_C=-500mA I_B=-50mA		-1.5
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	V	I_C=-5mA V_{CE}=-5V	-0.45	-0.75
Transition frequency	f_T	MHz	I_C=-200mA,V_{CE}=-5V	15	
Collector Capacitance	Cob	pF	VCB=-10V,IE=0, f=1MHz		35

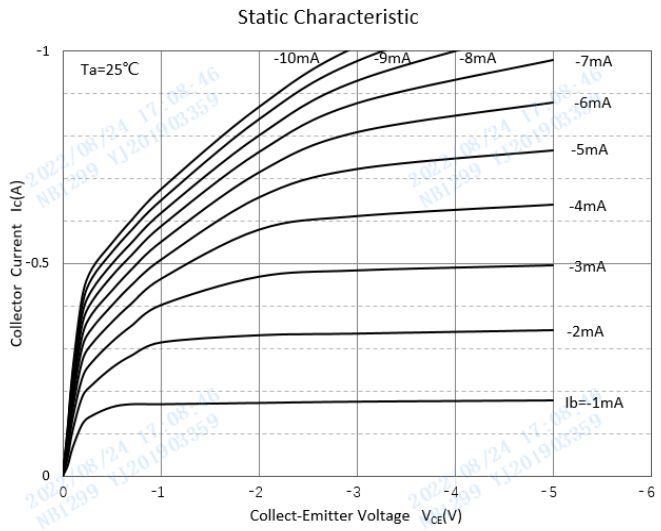
■Ordering Information (Example)

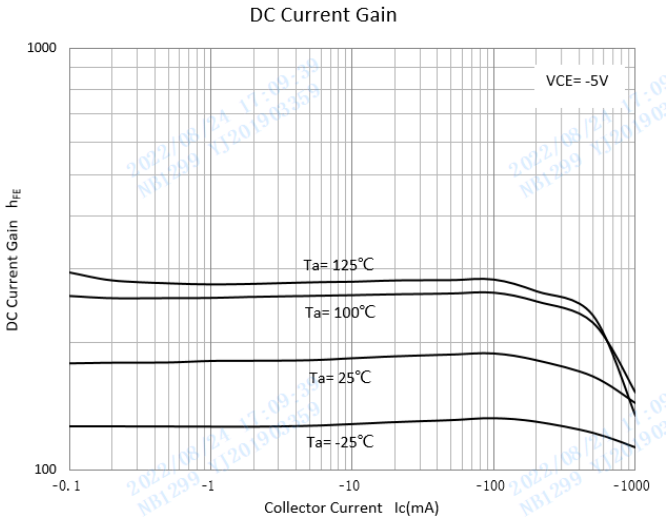
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
2SA1013	F2	Approximate 0.055	1000	8000	32000	7” reel

■CLASSIFICATION OF HFE

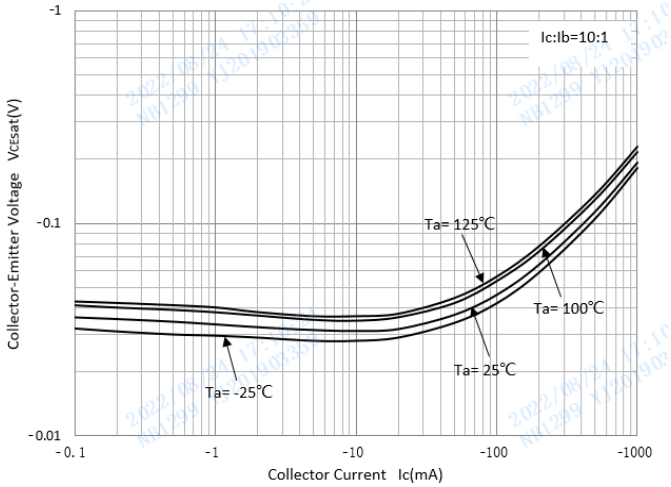
Rank	O	P
Range	100-200	160-320

■Characteristics (Typical)

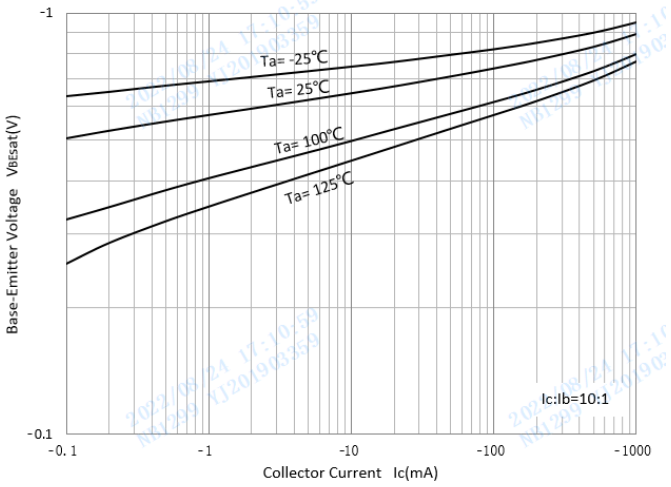




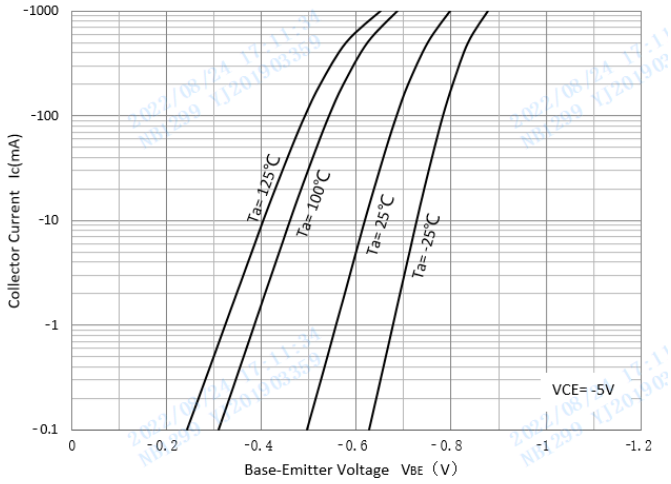
Collector-Emitter Saturation Voltage



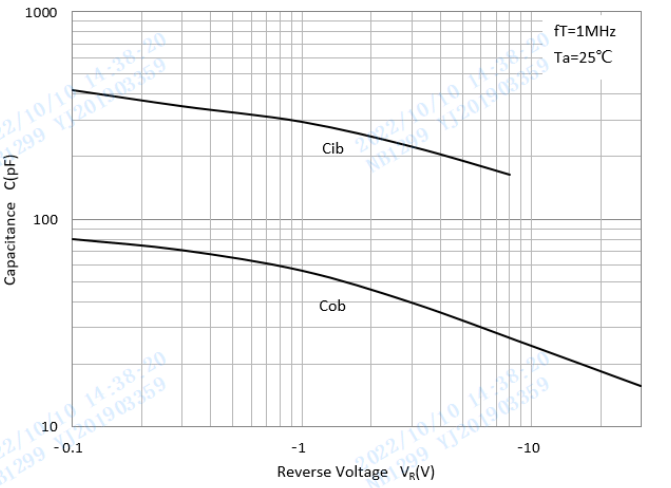
Base-Emitter Saturation Voltage



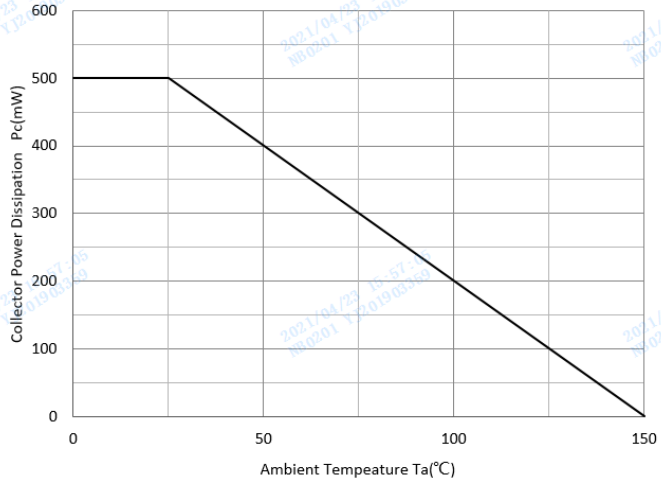
Base-Emitter On Voltage



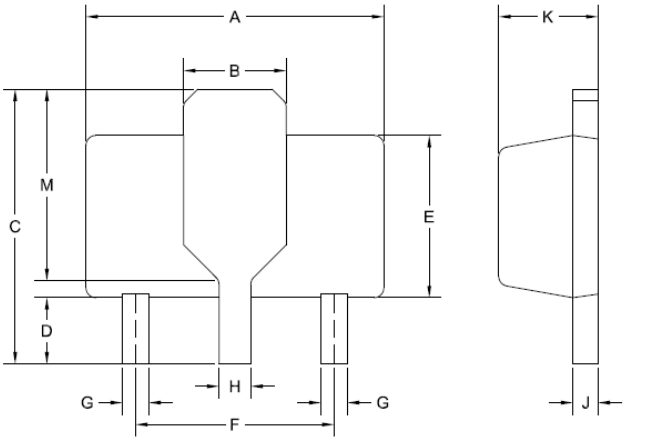
Cob/Cib-V_{CB}/V_{EB}



Collector Power Derating Curve

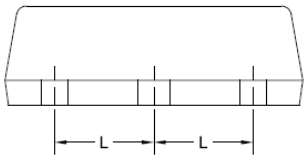


■SOT-89 Package Outline Dimensions



BOTTOM VIEW

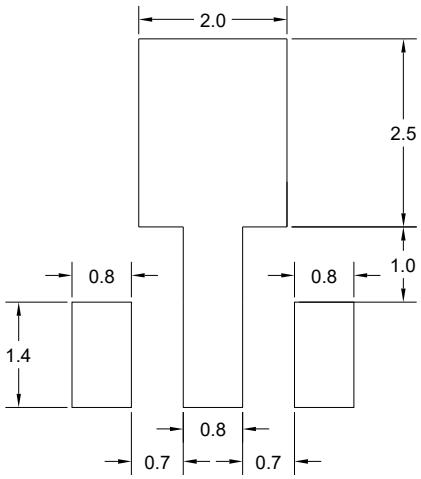
SIDE VIEW



SIDE VIEW

DIMENSIONS				
DIM	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	0.173	0.181	4.400	4.600
B	0.061 TYP.		1.550 TYP.	
C	0.155	0.167	3.940	4.250
D	0.031	0.047	0.800	1.200
E	0.094	0.102	2.400	2.600
F	0.118 TYP.		3.00 TYP.	
G	0.014	0.019	0.360	0.480
H	0.017	0.022	0.440	0.560
J	0.014	0.017	0.350	0.440
K	0.055	0.063	1.400	1.600
L	0.059 TYP.		1.500 TYP.	
M	0.108 TYP.		2.750 TYP.	

■SOT-89 Suggested Pad Layout



UNIT:MM

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