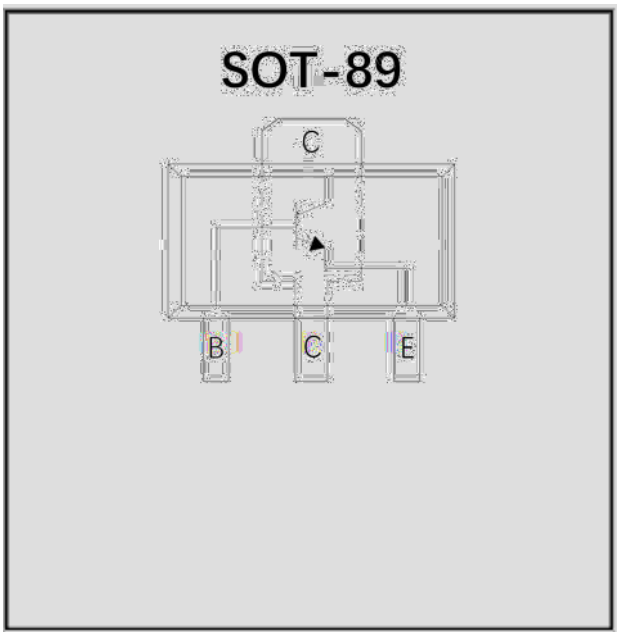
NPN General Purpose Amplifier



Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix ”HF”
- Moitsure Sensitivity Level 1
- High-speed switching

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: 1A

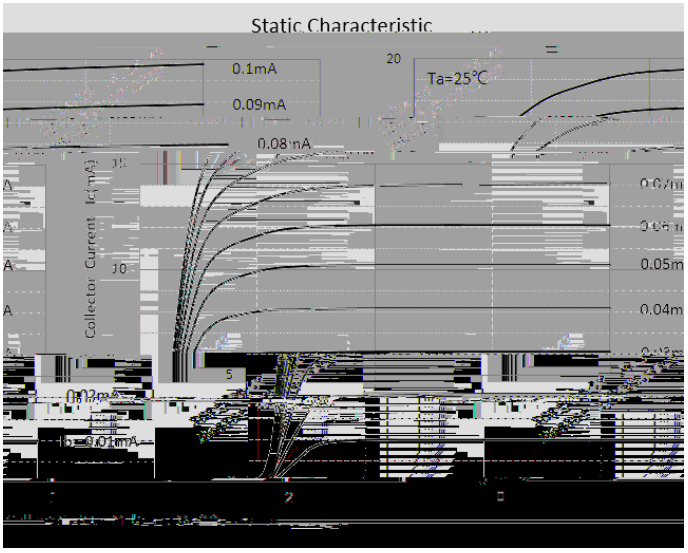
■Maximum Ratings (Ta=25 unless otherwise noted)

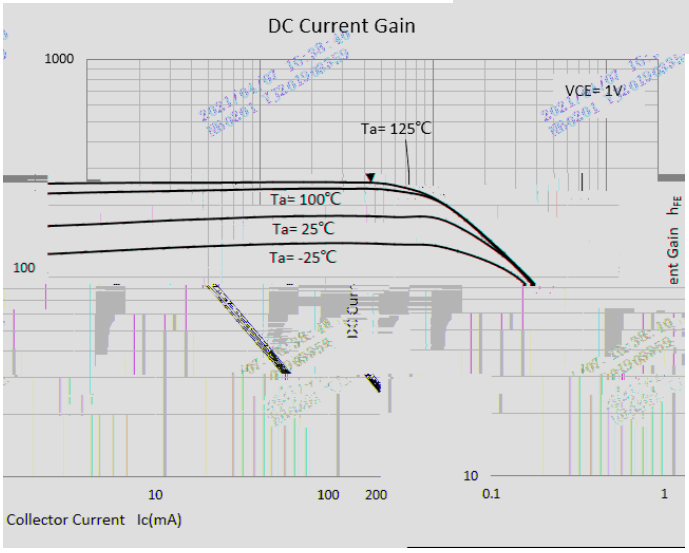
Item	Symbol	Unit	Conditions	Value
Minimum Collector-Emitter Voltage	V_{CEO}	V	I_C=1mA, I_B=0	40
Minimum Collector-Base Voltage	V_{CBO}	V	I_C=10uA, I_E=0	60
Minimum Emitter-Base Voltage	V_{EBO}	V	I_E=10uA, I_C=0	6
Collector Current	I_C	mA		200
Collector Power Dissipation	P_C	mW		500
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	/W		250
Operation Junction Temperature	T_j			-55 to +150
Storage Temperature	T_{stg}			-55 to +150

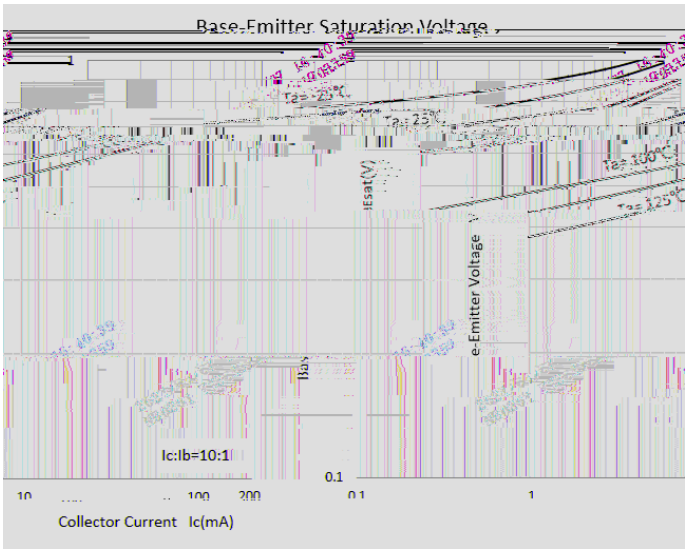
■**Electrical Characteristics** (Ta=25 unless otherwise noted)

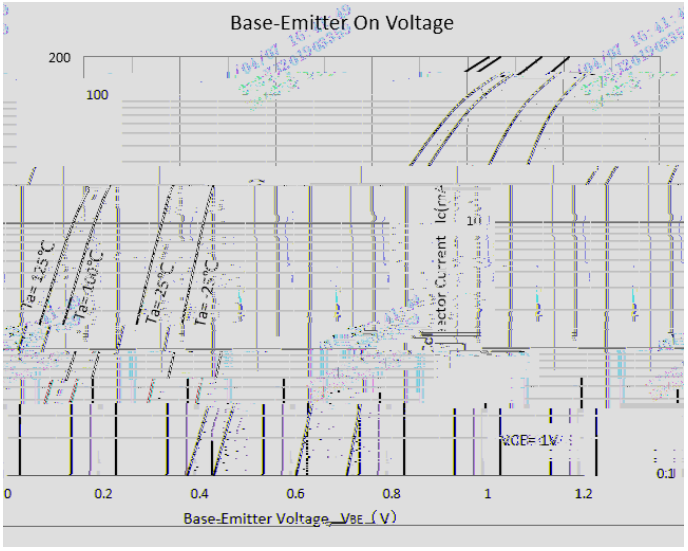
Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-Emitter Voltage	V_{CEO}	V	I_C=1mA, I_B=0	40		
Collector-Base Voltage	V_{CBO}	V	I_C=10uA, I_E=0	60		
Emitter-Base Voltage	V_{EBO}	V	I_E=10uA, I_C=0	6		
Collector-Base cut-off current	I_{CBO}	nA	V_{CB}=30V			50
Emitter-Base cut-off current	I_{EBO}	nA	V_{EB}=6V			50
DC Current Gain	$h_{FE}1$		I_C=0.1mA, V_{CE}=1V	60		
	$h_{FE}2$		I_C=1 mA, V_{CE}=1V	80		
	$h_{FE}3$		I_C=10mA, V_{CE}=1V	100		300
	$h_{FE}4$		I_C=50mA, V_{CE}=1V	60		
	$h_{FE}5$		I_C=100mA, V_{CE}=1V	30		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	I_C=10mA, I_B=1mA			0.2
			I_C=50mA, I_B=5mA			0.3
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	I_C=10mA, I_B=1mA	0.65		0.85
			I_C=50mA, I_B=5mA			0.95
Transition Frequency	f_T	MHz	I_C=10mA, V_{CE}=20V,f=100MHz	300		
Output Capacitance	Cobo	pF	V_{CB}=5.0V, f=1MHz, I_E=0			4
Input Capacitance	Cibo	pF	V_{EB}=0.5V, f=1MHz, I_C=0			8
Noise Figure	NF	dB				

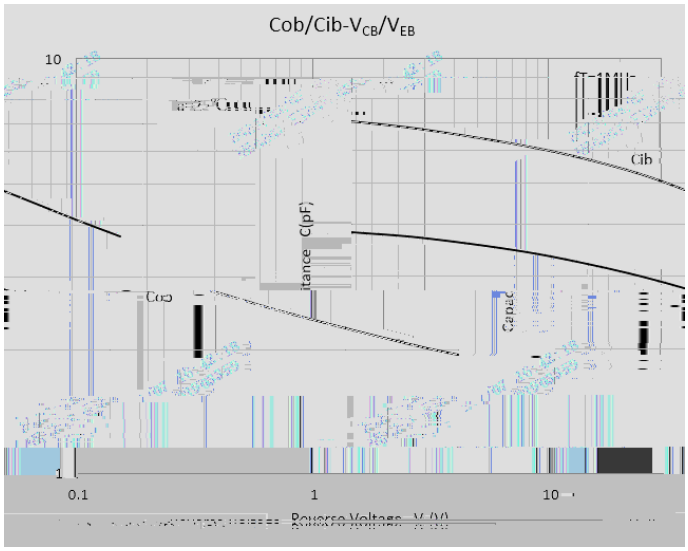
■**Characteristics** (Typical)

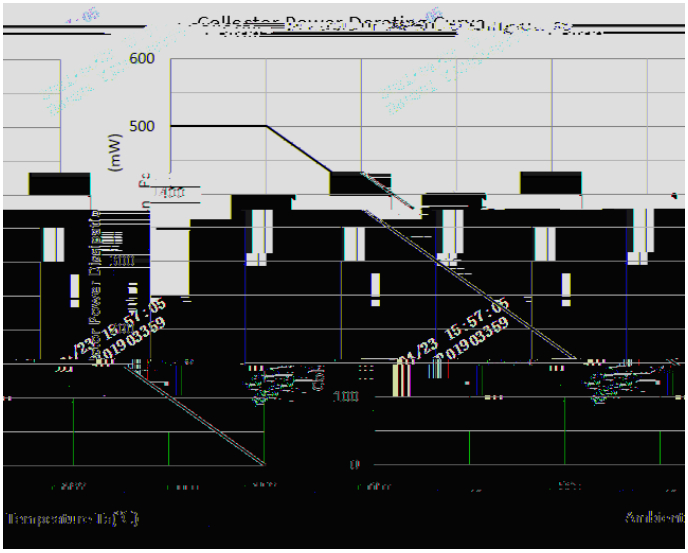




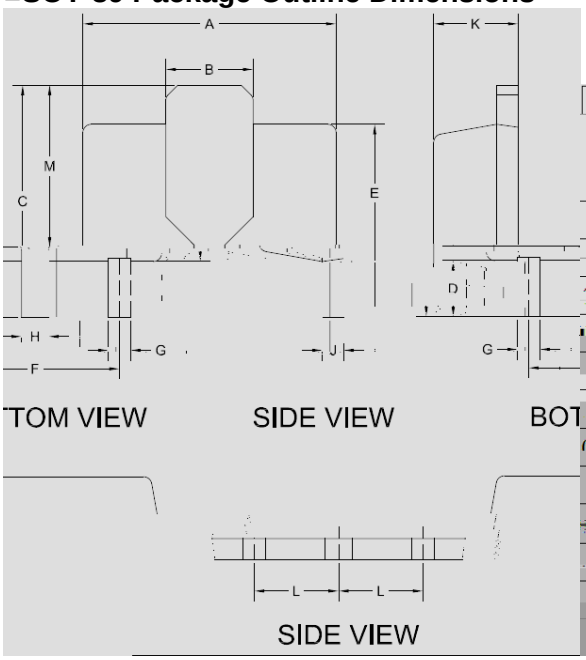








■SOT-89 Package Outline Dimensions



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	0.094	0.102	2.400	2.600
E	0.118 TYP		3.00 TYP	
F	0.014	0.019	0.360	0.480
G	0.017	0.022	0.440	0.560
H	0.055	0.063	1.400	1.600
J	0.059 TYP		1.500 TYP	
K	0.108 TYP		2.750 TYP.	
L	0.050 TYP		1.270 TYP.	
M	0.108 TYP.		2.750 TYP.	

■SOT-89 Suggested Pad Layout

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