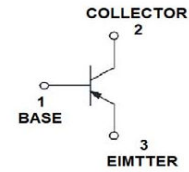


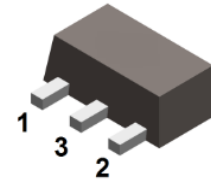
Features

- Surface mount package ideally suited for automatic insertion
- Compliant to Halogen-free



Application

- Signal amplification
- Switching circuit



Mechanical Data

- Package: SOT-89
- Terminals: Tin plated leads; solderable per J-STD-202 and JESD22-B102
- Marking Code: 5N

SOT-89

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-base voltage	V_{CBO}	V	$I_C = -100\mu\text{A}$, $I_E = 0$	-100
Collector-emitter voltage	V_{CEO}	V	$I_C = -1\text{mA}$, $I_B = 0$	-100
Emitter-base voltage	V_{EBO}	V	$I_E = -100\mu\text{A}$, $I_C = 0$	-5
Collector current	I_C	A		-3.7
Power dissipation	P_D	mW		500
Junction temperature	T_J	$^\circ\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^\circ\text{C}$		-55 to +150

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

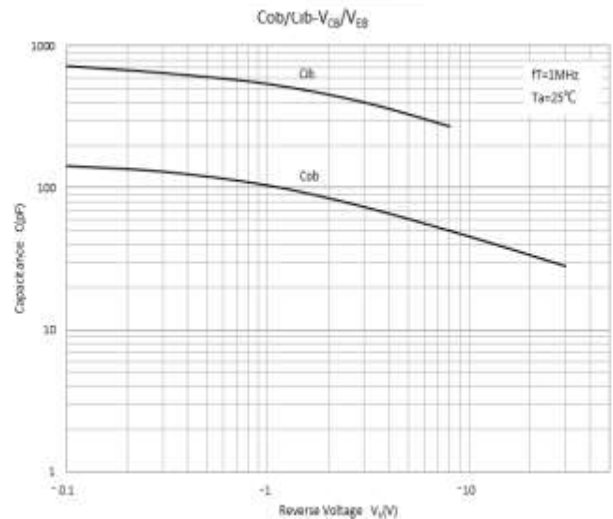
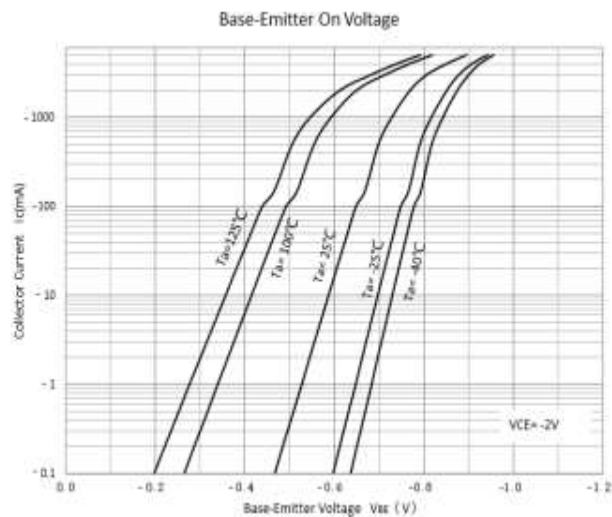
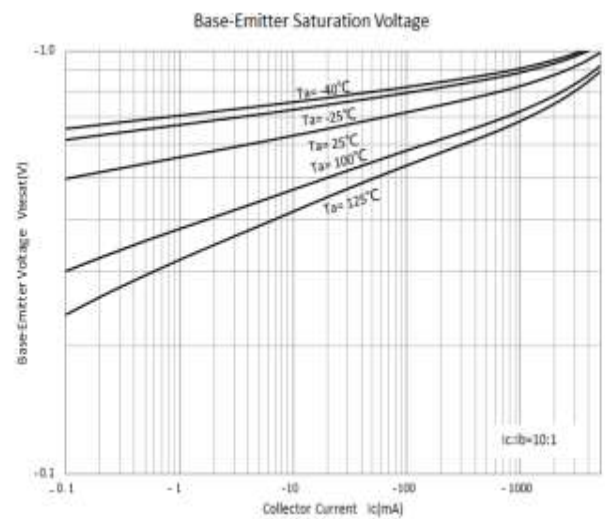
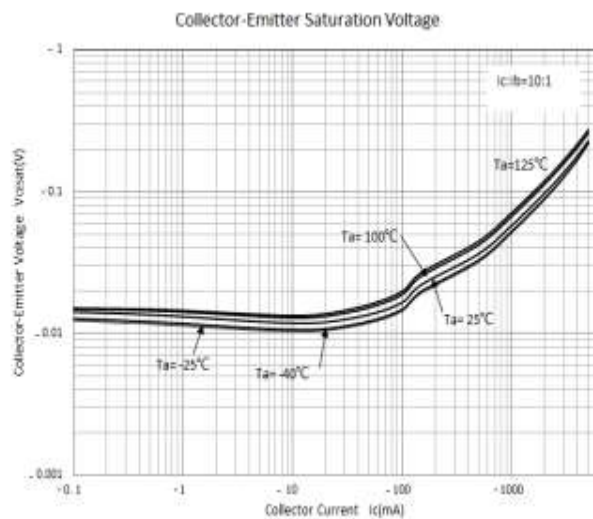
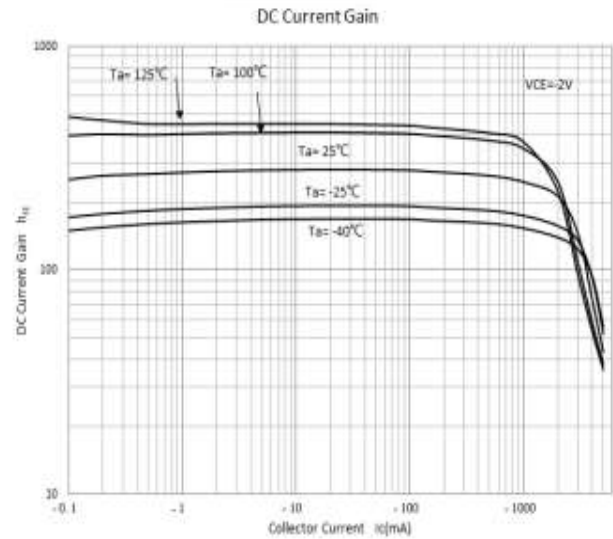
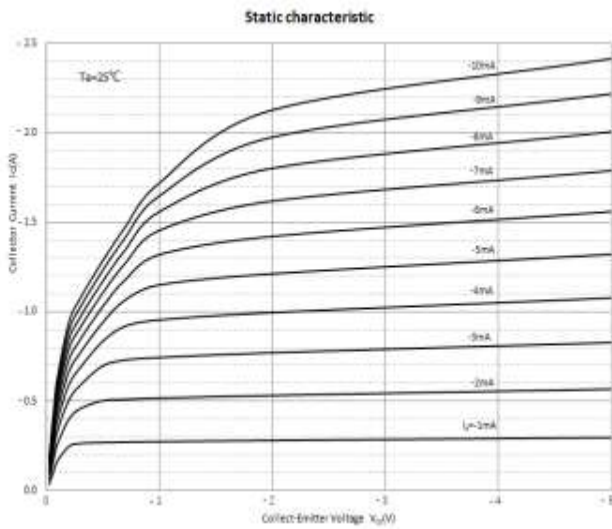
Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	$I_C = -100\mu\text{A}$, $I_E = 0$	-100		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	$I_C = -1\text{mA}$, $I_B = 0$	-100		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	$I_E = -100\mu\text{A}$, $I_C = 0$	-5		
Collector-base cut-off current	I_{CBO}	nA	$V_{CB} = -80\text{V}$, $I_E = 0$			-100
Emitter-base cut-off current	I_{EBO}	nA	$V_{EB} = -5\text{V}$, $I_C = 0$			-100
Collector Cutoff Current	I_{CES}	μA	$V_{CE} = -80\text{V}$, $V_{BE} = 0$			-5
DC current gain	h_{FE}		$V_{CE} = -2\text{V}$, $I_C = -0.5\text{A}$	200		
			$V_{CE} = -2\text{V}$, $I_C = -1\text{A}$	150		
			$V_{CE} = -2\text{V}$, $I_C = -2\text{A}$	100		
			$V_{CE} = -2\text{V}$, $I_C = -4\text{A}$	25		
Collector-emitter saturation voltage	$V_{CE(sat)}$	mV	$I_C = -0.5\text{A}$, $I_B = -50\text{mA}$			-60
			$I_C = -1\text{A}$, $I_B = -50\text{mA}$			-130
			$I_C = -4\text{A}$, $I_B = -400\text{mA}$			-300
Collector-emitter saturation resistance	$R_{CE(sat)}$	$\text{m}\Omega$	$I_C = -4\text{A}$, $I_B = -400\text{mA}$			75
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C = -1\text{A}$, $I_B = -100\text{mA}$			-0.9
			$I_C = -4\text{A}$, $I_B = -400\text{mA}$			-1.05
Base-emitter turn-on voltage	V_{BE}	V	$V_{CE} = -2\text{V}$, $I_C = -2\text{A}$			-0.85

Thermal Characteristics

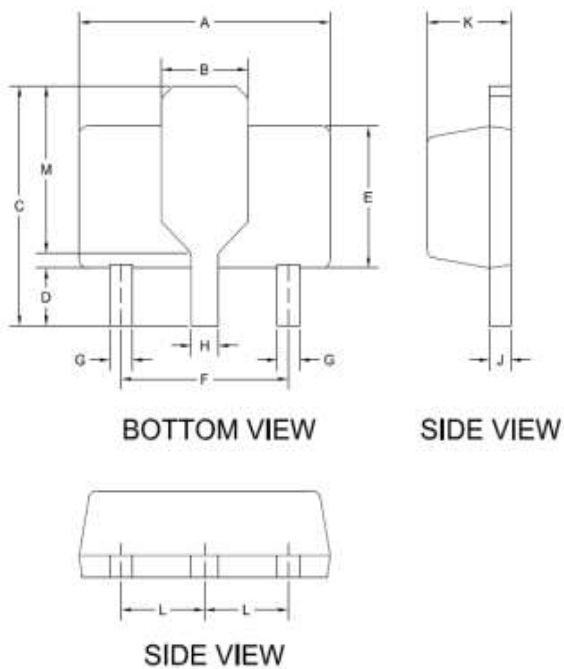
Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(1)}$	$^\circ\text{C/W}$	250
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(1)}$	$^\circ\text{C/W}$	50

Note: The device is installed and tested on 25.4 * 25.4 * 1.5mm P.C.B.

Ratings and Characteristic Curves



Package Outline Dimensions



DIM	DIMENSIONS			
	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.		3.000 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.	

Mounting Pad Layout (Unit: mm)

SOT-89

