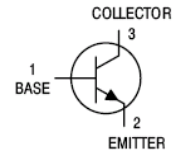


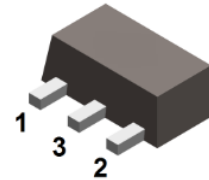
Features

- Surface mount package ideally suited for automatic insertion
- Compliant to Halogen-free
- Suffix “-Q1” for AEC-Q101



Application

- Signal amplification
- Switching circuit



Mechanical Data

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

SOT-89

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-base voltage	V _{CB0}	V	I _C =100uA, I _E =0	100
Collector-emitter voltage	V _{CEO}	V	I _C =1mA, I _B =0	100
Emitter-base voltage	V _{EBO}	V	I _E =100uA, I _C =0	5
Collector current	I _C	A		4.5
Peak Collector current	I _{CM}	A	single pulse, tp ≤ 1ms	9
Base current	I _B	A		0.4
Power dissipation	P _D	mW		500
Junction temperature	T _J	°C		-55 to +150
Storage temperature	T _{STG}	°C		-55 to +150

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

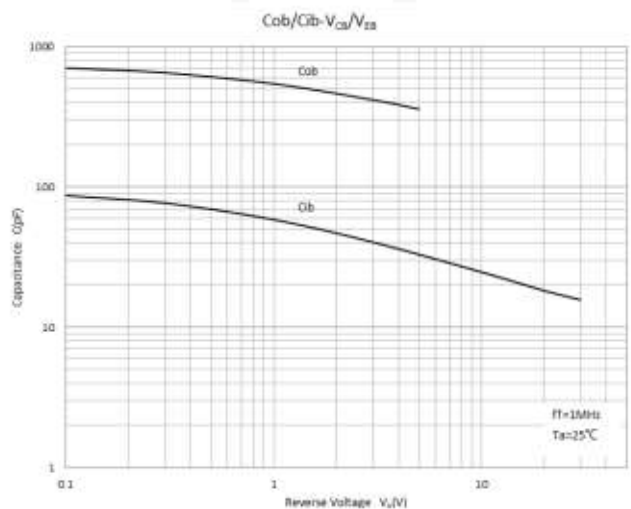
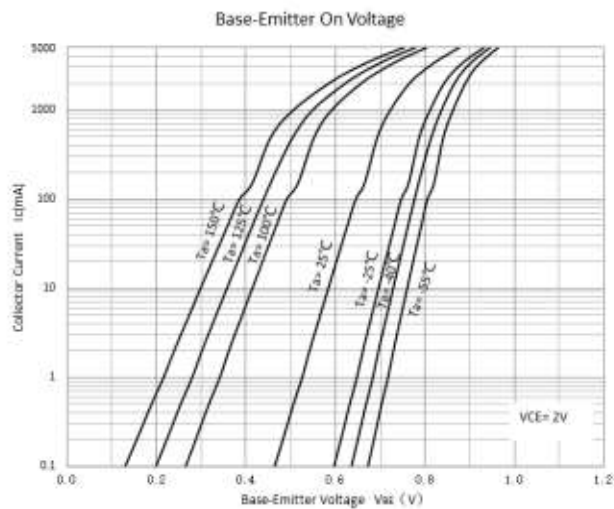
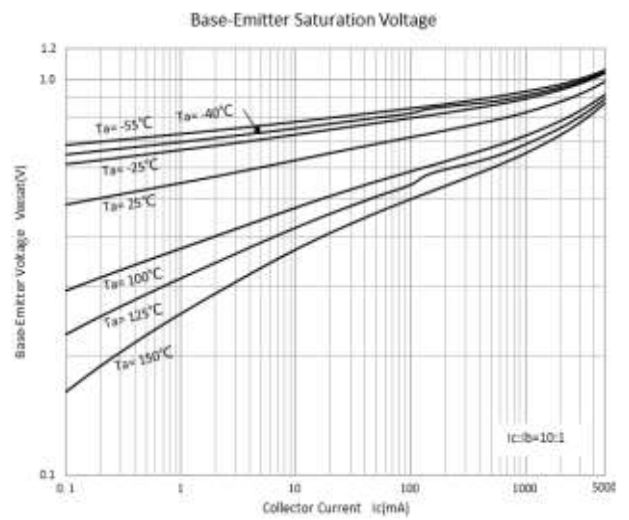
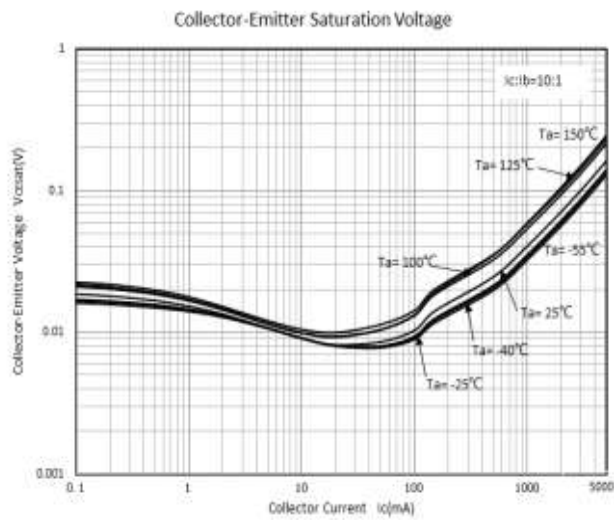
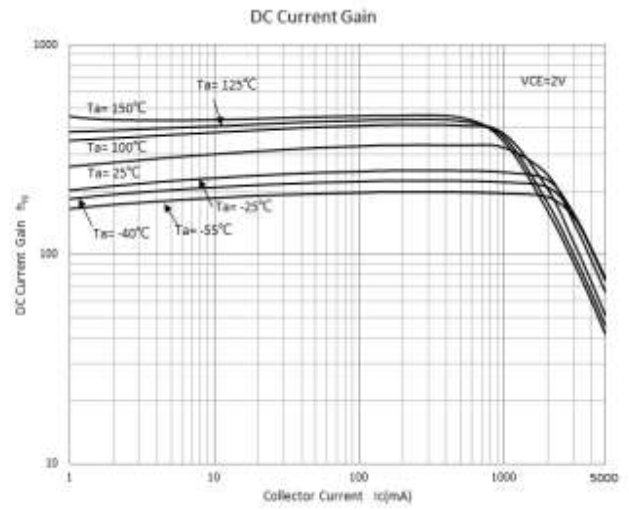
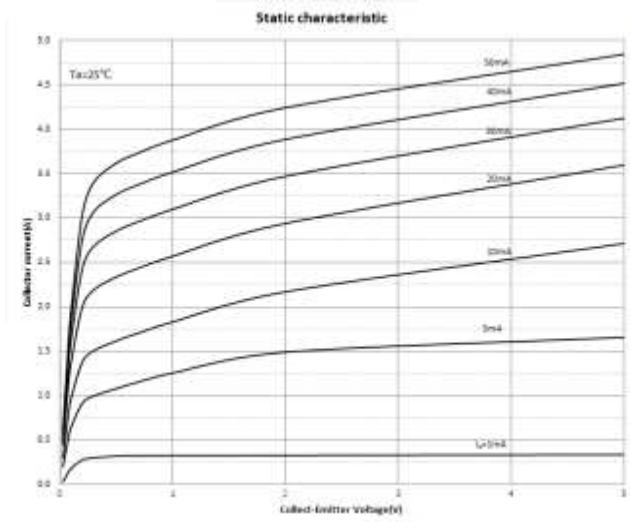
Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =100uA, I _E =0	100		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =1mA, I _B =0	100		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =100uA, I _C =0	5		
Collector-base cut-off current	I _{CBO}	nA	V _{CB} =80V I _E =0			100
Emitter-base cut-off current	I _{EBO}	nA	V _{EB} =5V I _C =0			100
Collector Cutoff Current	I _{CES}	uA	V _{CE} =80V V _{BE} =0			10
DC current gain	h _{FE}		V _{CE} =2V I _C =0.5A	200		
			V _{CE} =2V I _C =1A	150		
			V _{CE} =2V I _C =2A	100		
			V _{CE} =2V I _C =4A	50		
			V _{CE} =2V I _C =5A	40		
Collector-emitter saturation voltage	V _{CE(sat)}	mV	I _C =0.5A I _B =50mA			40
			I _C =1A I _B =50mA			75
			I _C =1A I _B =10mA			150
			I _C =2A I _B =40mA			160
			I _C =4A I _B =200mA			225
			I _C =4A I _B =400mA			200
			I _C =4.5A I _B =225mA			245
Collector-emitter saturation resistance	R _{CE(sat)}	mΩ	I _C =4A I _B =200mA			56
Base-emitter saturation voltage	V _{BE(sat)}	V	I _C =1A I _B =100mA			0.9
			I _C =4A I _B =400mA			1.05
Base-emitter turn-on voltage	V _{BE}	V	V _{CE} =2V I _C =2A			0.85

Thermal Characteristics

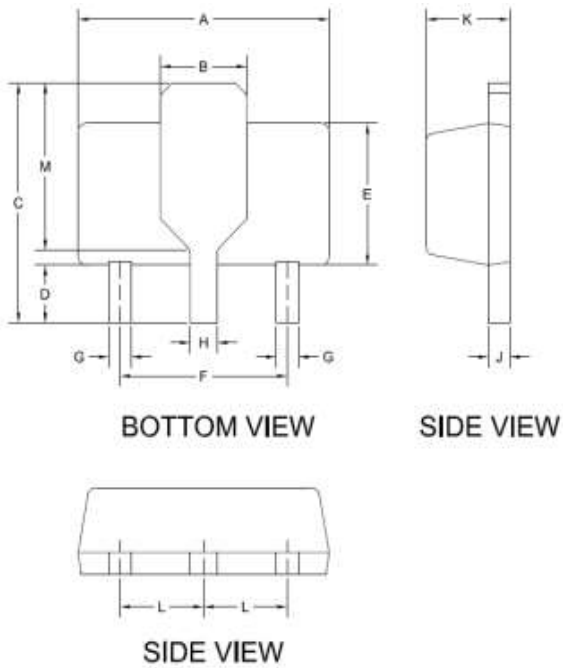
Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	250
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	50

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

Ratings and Characteristic Curves



Package Outline Dimensions



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.		3.000 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

