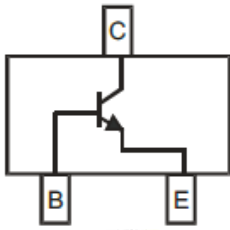


NPN General Purpose Amplifier transistors



SOT-323

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Ultra-Small Surface Mount Package
- Part no. with suffix “Q” means AEC-Q101 qualified

Applications

- Ideal for Amplification and Switching

Mechanical Data

- Case: SOT-323
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking: 1GM

■Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	500	mA
Collector Power Dissipation (*)	P_C	200	mW
Thermal Resistance From Junction to Ambient (*)	$R_{\theta JA}$	625	K/W
Operation Junction Temperature	T_j	-55 to +150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

(*) Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch



■Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Max
Collector-base breakdown voltage	V _{CBO}	V	I _C =100μA, I _E =0	80	
Collector-emitter breakdown voltage	V _{CEO}	V	I _C =1mA, I _B =0	80	
Emitter-base breakdown voltage	V _{EBO}	V	I _E =100μA, I _C =0	4	
Collector-base cut-off current	I _{CBO}	nA	V _{CB} =80V, I _E =0		100
Collector-emitter cut-off current	I _{CEO}	nA	V _{CE} =60V, I _B =0		100
Emitter-base cut-off current	I _{EBO}	nA	V _{EB} =3V, I _C =0		100
DC current gain	h _{FE}		V _{CE} =1V, I _C =10mA	100	400
	h _{FE}		V _{CE} =1V, I _C =100mA	100	
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =100mA, I _B =10mA		0.25
Base-emitter saturation voltage	V _{BE(sat)}	V	I _C =100mA, I _B =10mA		1.2

■Other Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Max
Transition frequency	f _T	MHz	V _{CE} =2V, I _C =10mA, f=100MHz	100	

■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMSTA06Q	F2	Approximate 0.006	3000	30000	120000	7" reel



■ Characteristics(Typical)

Fig.1 - Static Characteristic

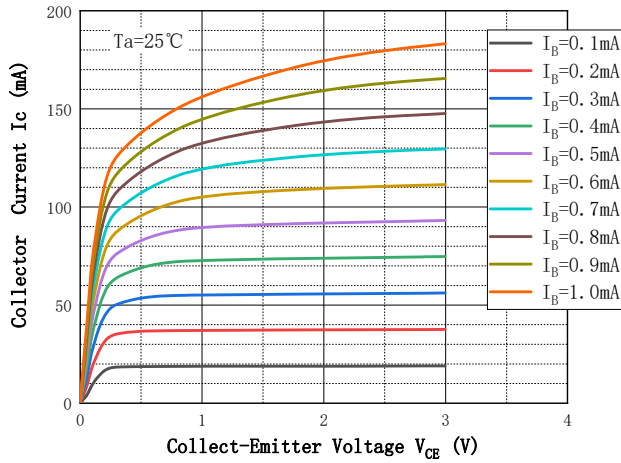


Fig.2 - DC Current Gain

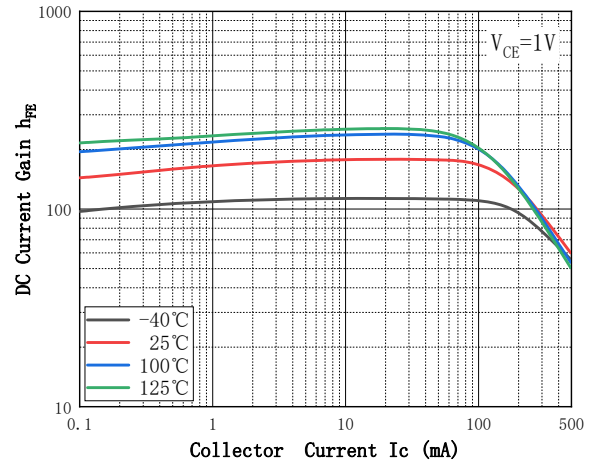


Fig.3 - Collect-Emitter Saturation Voltage

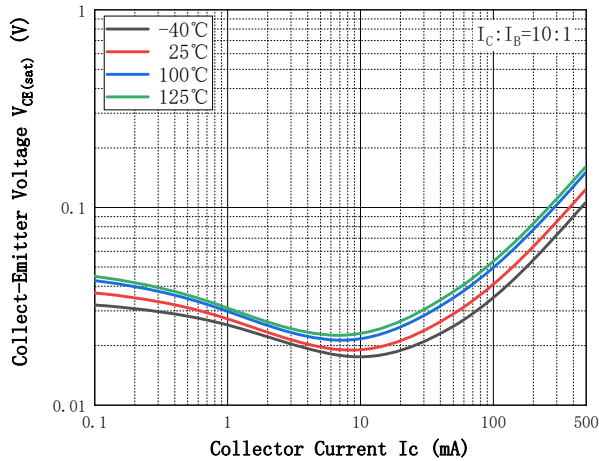


Fig.4 - Base-Emitter Voltage

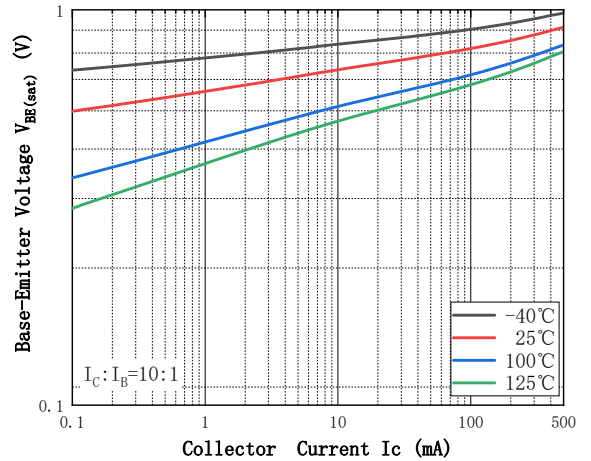


Fig.5 - Base-Emitter On Voltage

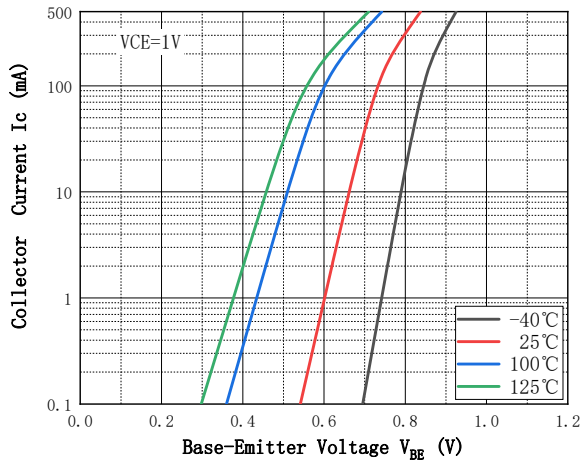
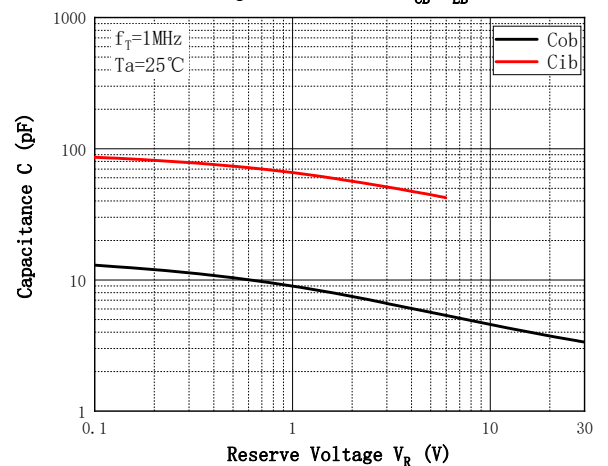
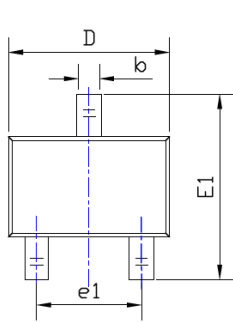


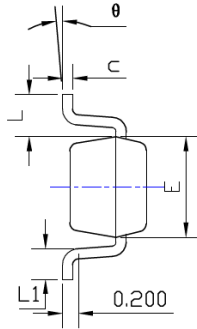
Fig.6 - Cob/Cib— V_{CE}/V_{BE}



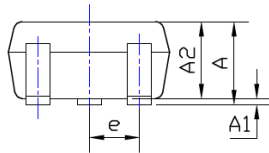
■ SOT-323 Package Outline Dimensions & Suggested Pad Layout



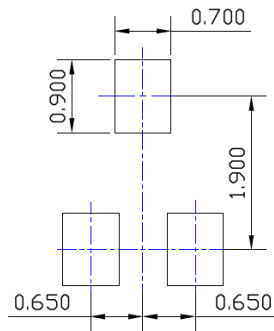
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

NOTE:

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



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