

Features

- High current surface mount PNP silicon switching transistor for load management in portable applications

1. BASE
2. EMITTER
3. COLLECTOR



Package: SOT-23

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

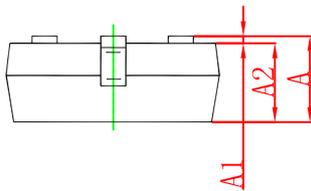
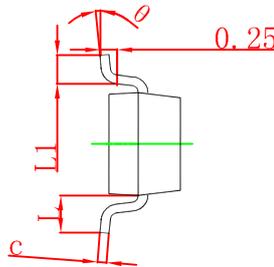
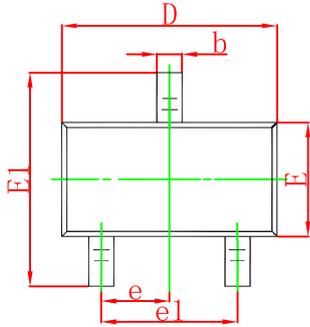
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-50	V
Collector-Emitter Voltage	V _{CEO}	-30	V
Emitter-Base Voltage	V _{EBO}	-5	V
Collector Current -Continuous	I _C	-1	A
Collector Power Dissipation	P _C	310	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	403	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55-150	°C

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	V _{(BR)CBO}	I _C =-100μA, I _E =0	-50			V
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =-10mA, I _B =0	-30			V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _E =-100μA, I _C =0	-5			V
Collector Cut-Off Current	I _{CB0}	V _{CB} =-30V, I _E =0			-0.1	μA
Collector-Emitter Cut-Off Current	I _{CES}	V _{CE} =-30V			-0.1	μA
Emitter Cut-Off Current	I _{EBO}	V _{EB} =-4V, I _C =0			-0.1	μA
DC Current Gain	h _{FE1}	V _{CE} =-2V, I _C =-1mA	100			
	h _{FE2}	V _{CE} =-2V, I _C =-500mA	100		300	
	h _{FE3}	V _{CE} =-2V, I _C =-1A	80			
	h _{FE4}	V _{CE} =-2V, I _C =-2A	40			
Collector-Emitter Saturation Voltage	V _{CE(sat)1}	I _C = -500mA, I _B =-50mA			-0.25	V
	V _{CE(sat)2}	I _C = -1A, I _B =-100mA			-0.3	V
	V _{CE(sat)3}	I _C = -2A, I _B =-200mA			-0.65	V
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C = -1A, I _B =-100mA			-1.2	V
Base-Emitter Turn-On Voltage	V _{BE(on)}	V _{CE} =-2V, I _C =-1A			-1.1	V
Transition Frequency	f _T	V _{CE} =-5V, I _C =-100mA, f=100MHz	100			MHz
Collector Output Capacitance	C _{ob}	f=1MHz			15	pF

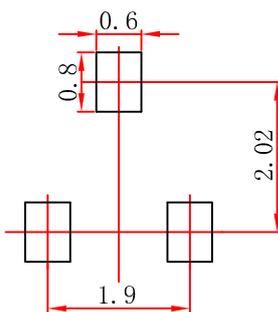
Package Outline Dimensions

SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	6°

Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: ± 0.05mm.
 3. The pad layout is for reference purposes only.

Product Information

Device	Package	Marking
MMBT589	SOT-23	HG3