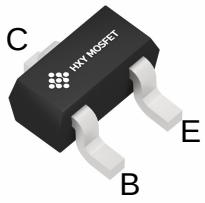
SMMBT3904TT1G

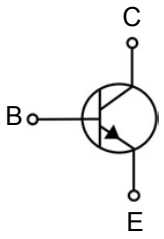
NPN Plastic-Encapsulate Transistors

Feartures

- Collector Current: I_C=0.2A
- Power Dissipation of 150mW



SOT-523



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
SMMBT3904TT1G	SOT-523	1N	3000

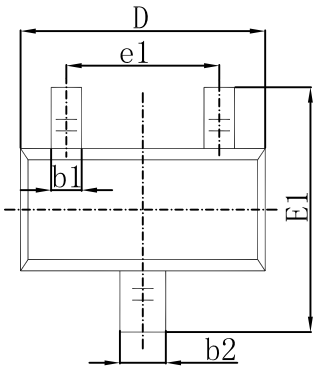
Maximum Ratings (Ta=25°C unless otherwise noted)

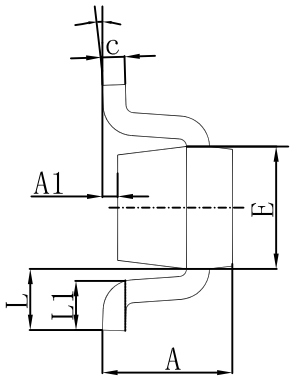
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA
Collector Power Dissipation	P_C	150	mW
Thermal Resistance From Junction To Ambient	$R_{\Theta JA}$	833	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55～+150	°C

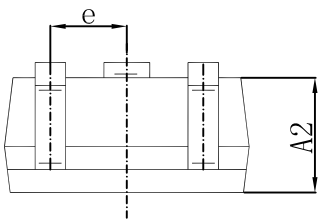
Electrcal Charcteristics (Ta=25°Cunless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6		V
Collector cut-off current	I_{CEX}	V_{CE}=30V, $V_{EB(off)}$=3V		50	nA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0		100	nA
DC current gain	$h_{FE(1)}$	V_{CE}=1V, I_C=0.1mA	40		
	$h_{FE(2)}$	V_{CE}=1V, I_C=1mA	70		
	$h_{FE(3)}$	V_{CE}=1V, I_C=10mA	100	300	
	$h_{FE(4)}$	V_{CE}=1V, I_C=50mA	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=1mA		0.2	V
		I_C=50mA, I_B=5mA		0.3	V
Collector-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA, I_B=1mA	0.65	0.85	V
		I_C=50mA, I_B=5mA		0.95	V
Transition frequency	f_T	V_{CE}=20V,I_C=10mA, f=100MHz	300		MHz
Collector output capacitance	C_{ob}	V_{CB}=5V, I_E=0, f=1MHz		4	pF
Base input capacitance	C_{ib}	V_{EB}=0.5V, I_C=0, f=1MHz		8	pF
Delay time	t_d	V_{CC}=3V, $V_{BE(off)}$=-0.5V I_C=10mA, I_{B1}=1mA		35	ns
Rise time	t_r	V_{CC}=3V, $V_{BE(off)}$=-0.5V I_C=10mA, I_{B1}=1mA		35	ns
Storage time	t_s	V_{CC}=3V, I_C=10mA, I_{B1}= I_{B2}=1mA		200	ns
Fall time	t_f	V_{CC}=3V, I_C=10mA, I_{B1}= I_{B2}=1mA		50	ns

SOT-523 Package Information

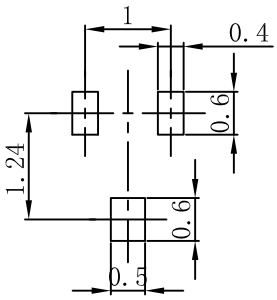






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 Suggested Pad Layout



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

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