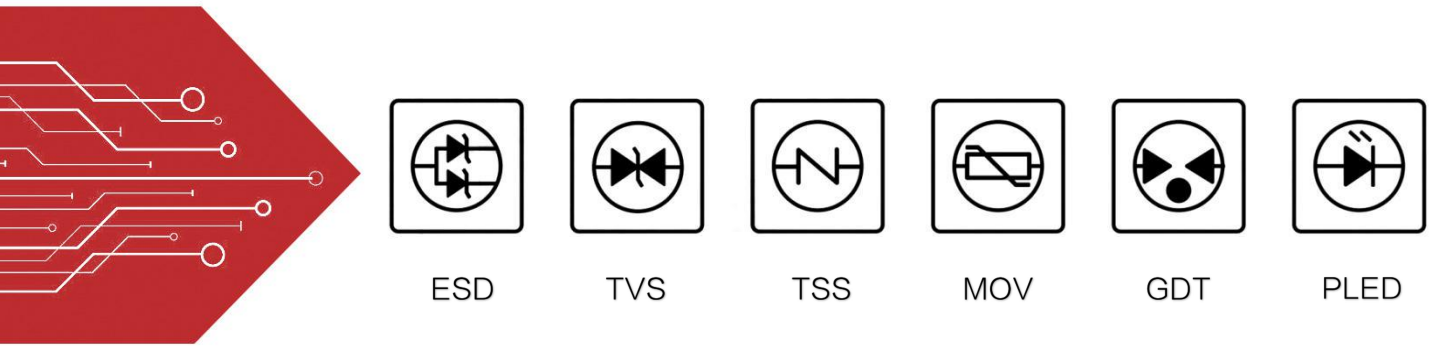
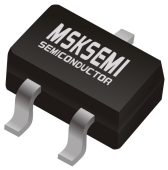
MSKSEMI
SEMICONDUCTOR

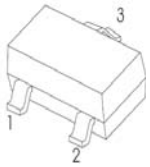


Product data sheet

www.msksemi.com



SOT－23



1. BASE
2. EMITTER
3. COLLECTOR

TRANSISTOR (NPN)

FEATURE

power switching applications

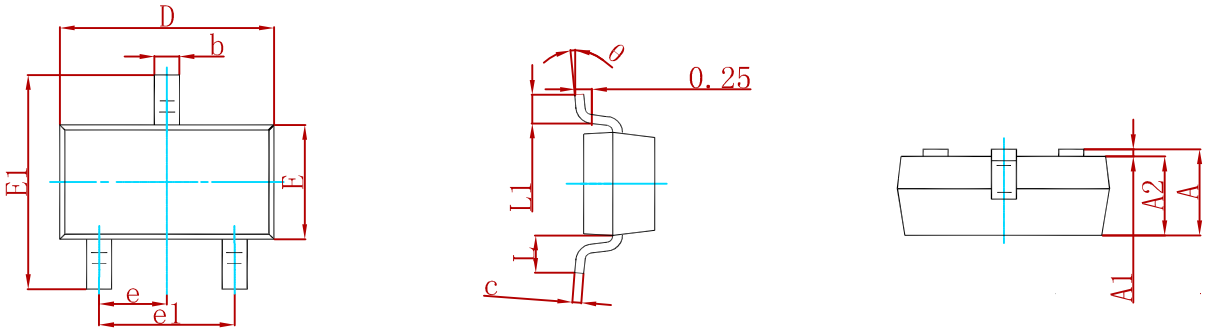
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector -Base Voltage	700	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	9	V
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	0.35	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~150	℃

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

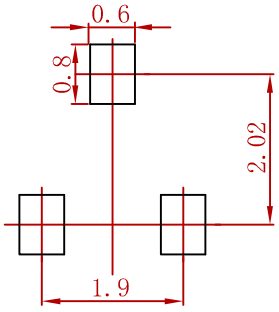
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 1mA ,I_E =0	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 1mA ,I_B=0	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100μA, I_C=0	9			V
Collector cut-off current	I_{CBO}	V_{CB}= 600V , I_E=0			10	μA
Emitter cut-off current	I_{EBO}	V_{EB}=9V, I_C=0			10	μA
DC current gain	$h_{FE(1)}$	V_{CE}= 10V, I_C= 20mA	10		40	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C= 100mA, I_B= 20 mA			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C= 100mA, I_B= 20mA			1.2	V
Transition frequency	f_T	V_{CE}= 20V, I_C=20mA f = 1MHz	5			MHz
Storage time	t_S	I_C=100mA			3.5	μs

PACKAGE MECHANICAL DATA



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°	8°

Suggested Pad Layout



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

REEL SPECIFICATION

P/N	PKG	QTY
MS13001	SOT-23	3000

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