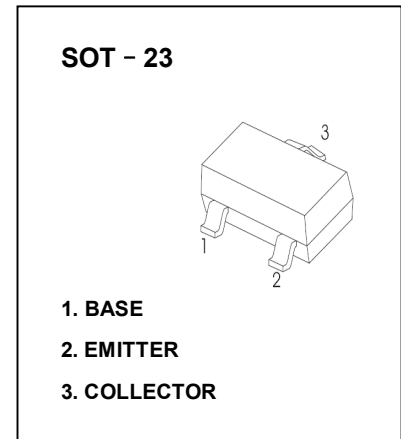




TRANSISTOR (NPN)

FEATURES

- General Purpose Amplifier



MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	75	V
V _{CEO}	Collector-Emitter Voltage	30	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current	600	mA
P _C	Collector Power Dissipation	250	mW
R _{θJA}	Thermal Resistance From Junction To Ambient	500	°C/W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

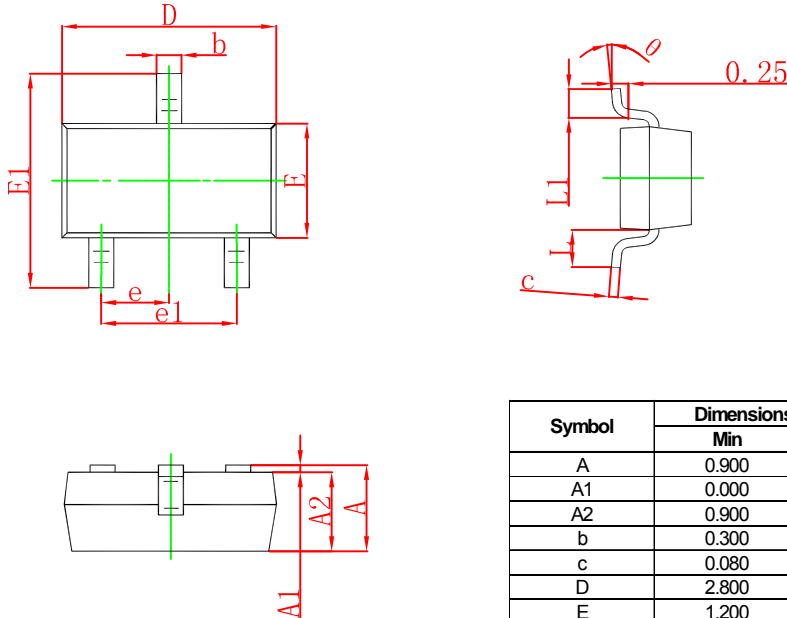
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	75			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =10mA, I _B =0	30			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	6			V
Collector cut-off current	I _{CB0}	V _{CB} =60V, I _E =0			10	nA
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{BE(off)} =3V			10	nA
Emitter cut-off current	I _{EBO}	V _{EB} =3V, I _C =0			0.1	μA
DC current gain	h _{FE(1)} *	V _{CE} =10V, I _C =150mA	100		300	
	h _{FE(2)} *	V _{CE} =10V, I _C =0.1mA	40			
	h _{FE(3)} *	V _{CE} =10V, I _C =500mA	42			
Collector-emitter saturation voltage	V _{CE(sat)1} *	I _C =500mA, I _B =50mA			1	V
Collector-emitter saturation voltage	V _{CE(sat)2} *	I _C =150mA, I _B =15mA			0.3	V
Base-emitter saturation voltage	V _{BE(sat)} *	I _C =500mA, I _B =50mA			1.2	V
Transition frequency	f _T	V _{CE} =20V, I _C =20mA, f=100MHz	300			MHz
Delay time	t _d	V _{CC} =30V, V _{BE(off)} =-0.5V, I _C =150mA,			10	ns
Rise time	t _r	I _{B1} =15mA			25	ns
Storage time	t _s	V _{CC} =30V, I _C =150mA, I _{B1} = I _{B2} =15mA			225	ns
Fall time	t _f				60	ns

*Pulse test: pulse width ≤300μs, duty cycles ≤ 2.0%.

CLASSIFICATION OF h_{FE(1)}

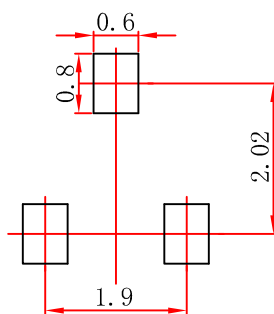
RANK	L	H
RANGE	100 - 200	200 - 300
MARKING	M1B	

SOT-23 Package Outline Dimensions



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°

SOT-23 Suggested Pad Layout



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