

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
$V_{DRM} V_{RRM}$	600	V
I_{GT}	200	μA

Feature

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

Application

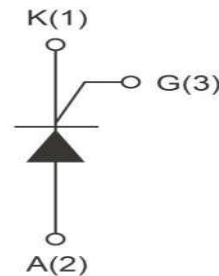
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Package

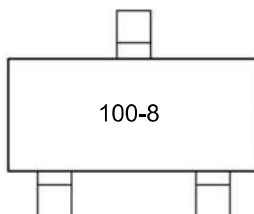


SOT-23

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V _{DRM}	600	V
Repetitive peak reverse voltage	V _{RRM}	600	V
RMS on-state current	I _{T(RMS)}	0.8	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I _{TSM}	8	A
Critical rate of rise of on-state current (I _G = 2 × I _{GT})	dI _T /dt	50	A/μs
Peak gate current	I _{GM}	0.1	A
Average gate power dissipation	P _{G(AV)}	0.1	W
Junction Temperature	T _J	-40 ~ +125	°C
Storage Temperature	T _{STG}	-40 ~ +150	°C

Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Value		Unit
			Min	Max	
Gate trigger current	I _{GT}	V _D = 12V I _T = 10mA T _j = 25°C	-	200	μA
Gate trigger voltage	V _{GT}		-	0.8	V
Gate non-trigger voltage	V _{GD}	V _D = 1/2V _{DRM} T _j = 110°C	0.2	-	V
latching current	I _L	V _D = 12V I _G = 0.5mA	-	4	mA
Holding current	I _H	R _{GK} = 1kΩ T _j = 25°C	-	5	mA
Critical-rate of rise of commutation voltage	dV _D /dt	V _D = 2/3V _{DRM} Gate Open T _j = 110°C	10	-	V/μs
STATIC CHARACTERISTICS					
Forward "on" voltage	V _{TM}	I _{TM} = 1.2A t _p = 380μs	-	1.7	V
Repetitive Peak Off-State Current	I _{DRM}	V _D = V _{DRM} V _R = V _{RRM} T _j = 25°C	-	10	μA
Repetitive Peak Reverse Current	I _{RRM}				
THERMAL RESISTANCES					
Thermal resistance	R _{th(j-c)}	Junction to case	TYP.	75	°C/W
	R _{th(j-a)}	Junction to ambient	TYP.	150	°C/W

Typical Characteristics

FIG.1 Maximum power dissipation versus RMS on-state current

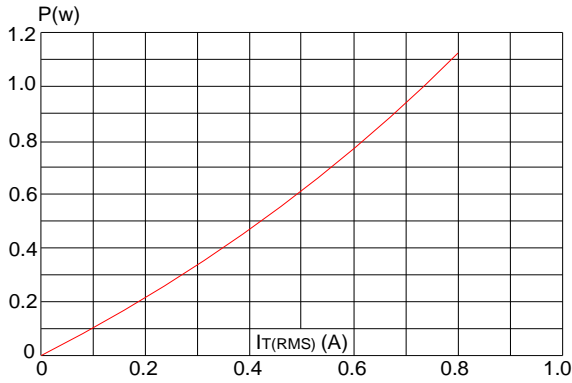


FIG.2: RMS on-state current versus case temperature

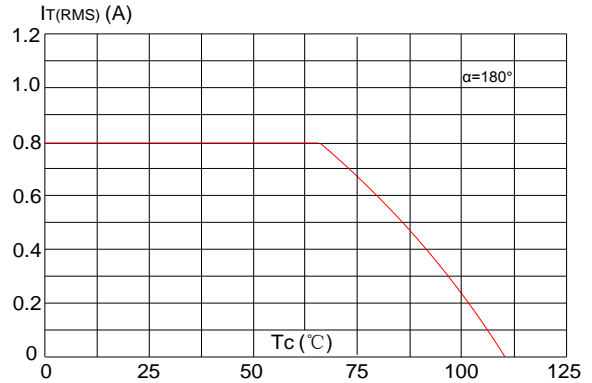


FIG.3: Surge peak on-state current versus number of cycles

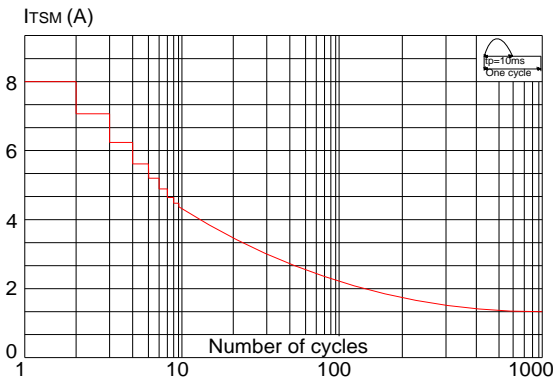


FIG.4: On-state characteristics (maximum values)

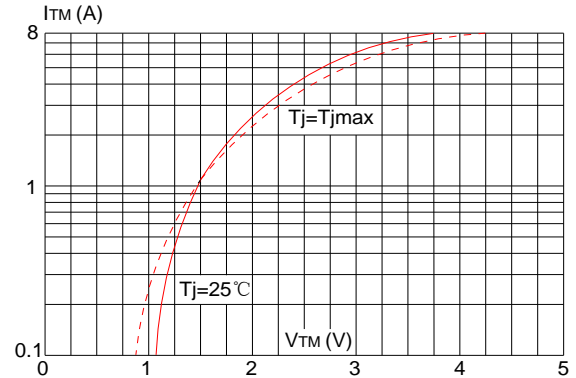


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t

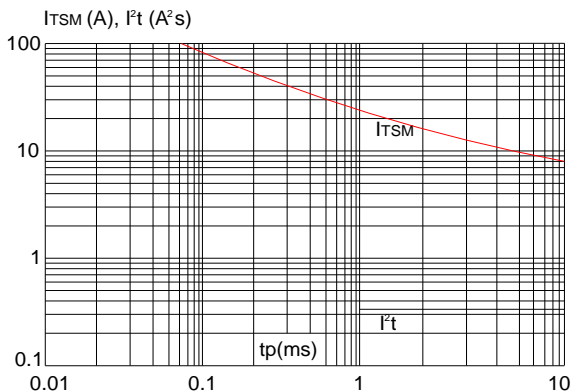
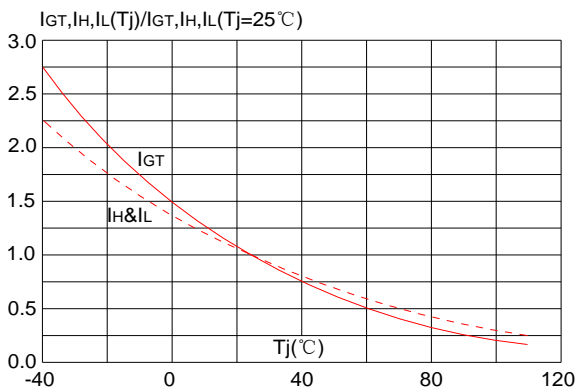
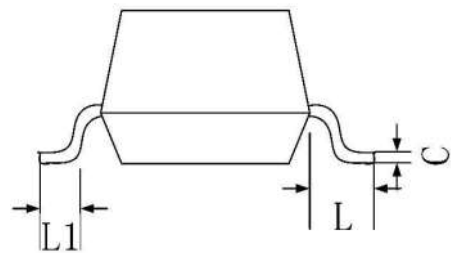
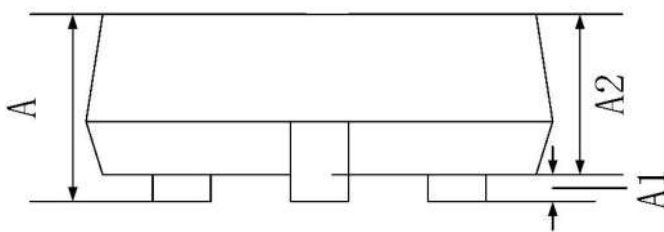
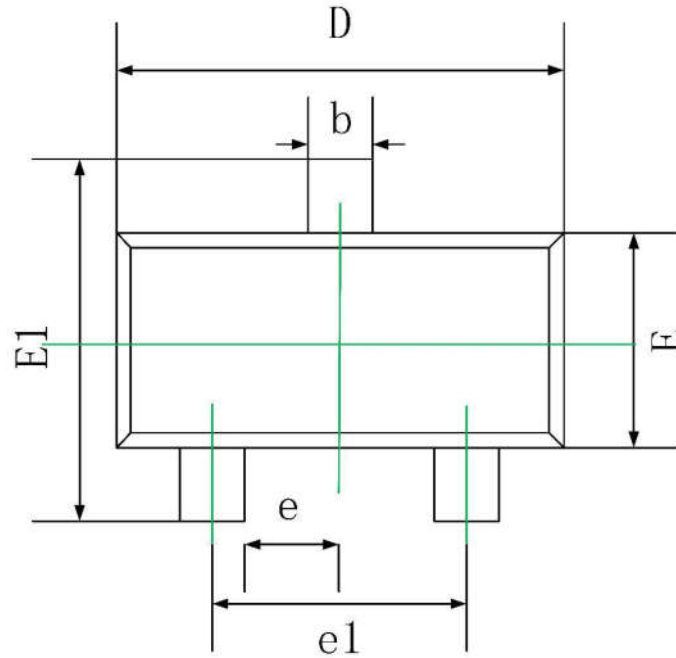


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



SOT-23 Package Information



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