

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
$V_{DRM} V_{RRM}$	600	V
I_{GT}	10~200	μA

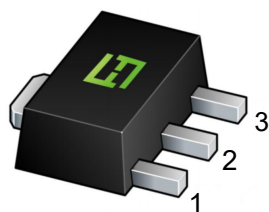
Feature

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

Application

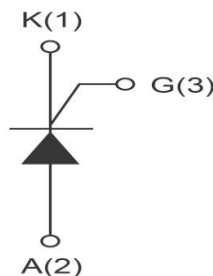
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Package

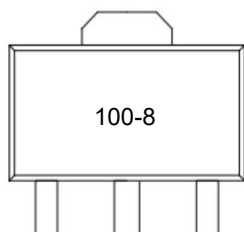


SOT-89-3L

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
I^2t value for fusing (tp=10ms)	I^2t	0.35	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di_T/dt	50	A/ μ s
Peak gate current	I_{GM}	0.2	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Junction Temperature	T_J	-40 ~ +110	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

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

Parameter	Symbol	Test Condition	Value		Unit
			Min	Max	
Gate trigger current	I_{GT}	$V_D = 12V I_T = 10mA T_J = 25^\circ C$	10	200	μA
Gate trigger voltage	V_{GT}		-	0.8	V
Gate non-trigger voltage	V_{GD}	$V_D = 1/2 V_{DRM} T_J = 110^\circ C$	0.2	-	V
latching current	I_L	$V_D = 12V I_G = 0.5mA$ $R_{GK} = 1k\Omega T_J = 25^\circ C$	-	6	mA
Holding current	I_H		-	5	mA
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D = 2/3 V_{DRM}$ Gate Open $T_J = 110^\circ C$	10	-	V/ μ s
STATIC CHARACTERISTICS					
Forward "on" voltage	V_{TM}	$I_{TM} = 1.2A t_p = 380\mu s$	-	1.5	V
Repetitive Peak Off-State Current	I_{DRM}	$V_D = V_{DRM} V_R = V_{RRM}$	$T_J = 25^\circ C$		μA
Repetitive Peak Reverse Current	I_{RRM}		$T_J = 110^\circ C$		mA
THERMAL RESISTANCES					
Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	25	°C/W
	$R_{th(j-a)}$	Junction to ambient	TYP.	100	°C/W

Typical Characteristics

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

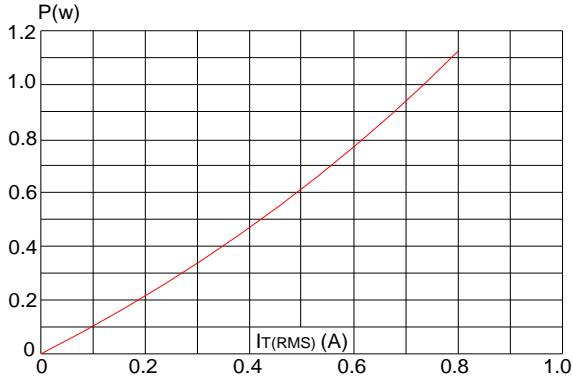


FIG.2: RMS on-state current versus case temperature

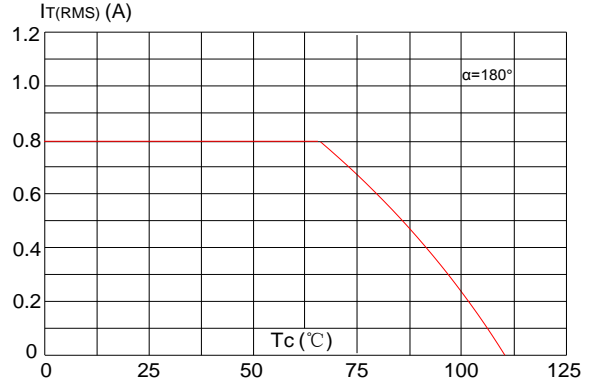


FIG.3: Surge peak on-state current versus number of cycles

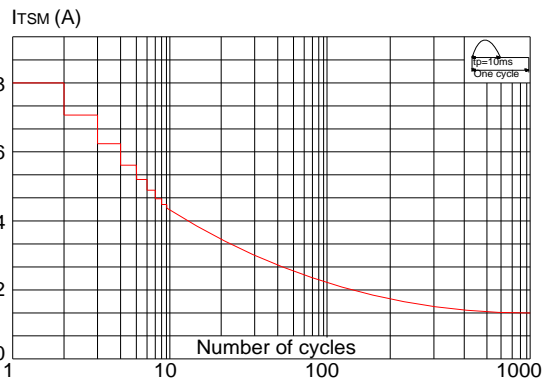


FIG.4: On-state characteristics (maximum values)

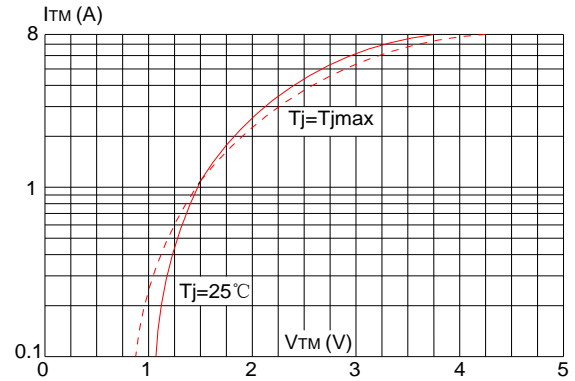


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t

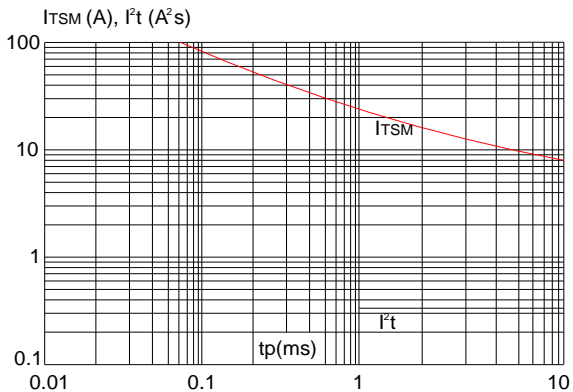
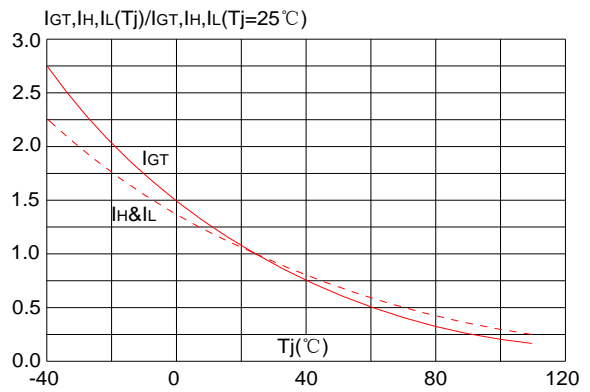
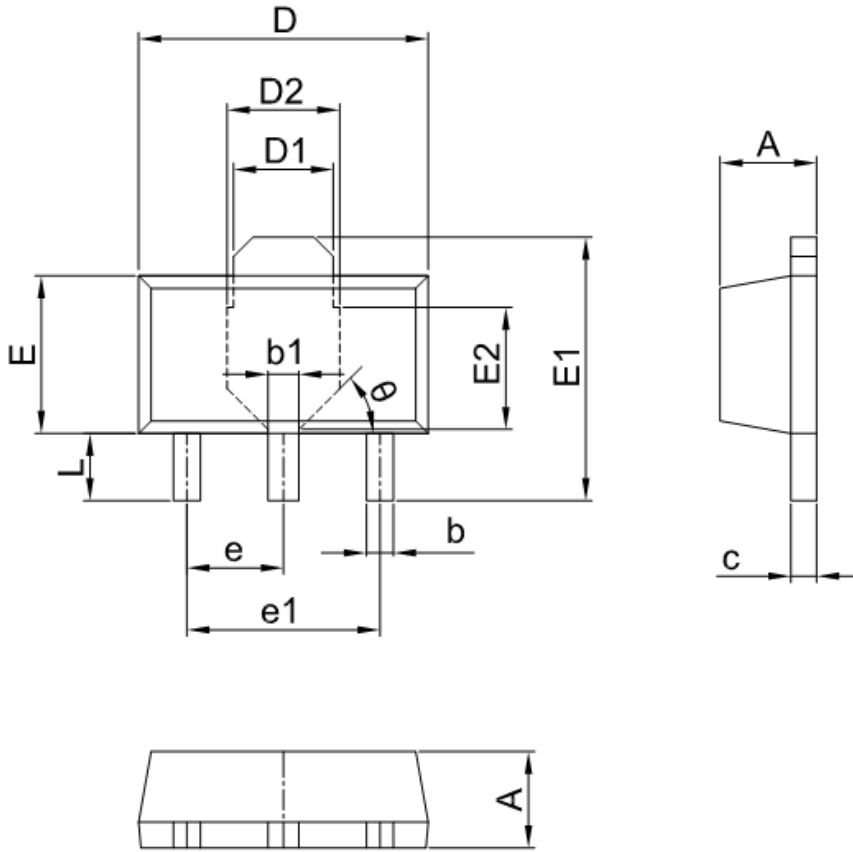


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



SOT-89-3L Package Information



Symbol	SOT-89		
	Min.	Typ	Max.
A	1.40	1.50	1.60
b	0.32	0.42	0.52
b1	0.38	0.48	0.58
c	0.35	0.40	0.45
c1	0.40	0.50	0.60
D	4.40	4.50	4.60
D1	1.45	1.55	1.65
D2	1.70	1.75	1.80
E	2.30	2.45	2.60
E1	3.95	4.10	4.25
E2	1.80	1.90	2.00
e	1.40	1.50	1.60
e1	2.80	3.00	3.20
L	0.90	1.05	1.20
θ		45°	