

2P4M-SOT89-3L

Product Summary

Symbol	Value	Unit
IT(AV)	2.0	A
VDRM VRRM	600	V
IGT	200	μ A

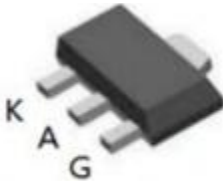
Feature

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

Application

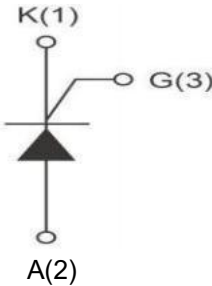
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Package

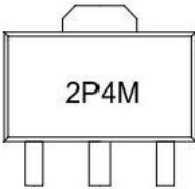


SOT89-3L

Circuit diagram



Marking



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

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	VoRM	600	V
Repetitive peak reverse voltage	VRRM	600	V
RMS on-state current	IT(RMS)	2	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	ITSM	20	A
Critical rate of rise of on-state current (Ic =2×Ict)	dI _r /dt	50	A/μs
Peak gate current	IcM	0.2	A
Average gate power dissipation	PG(AN)	0.12	W
Junction Temperature	TJ	-40~+110	°C
Storage Temperature	TsTG	-40~+150	°C

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

Parameter	Symbol	Test Condition	Value		Unit
			Min	Max	
Gate trigger current	IcT	Vo=12V Ir=10mA Tj=25°C	10	200	μA
Gate trigger voltage	VcT			1.2	V
Gate non-trigger voltage	Vco	Vo =1/2VDRM Tj=110°C	0.2		V
latching current	IL	Vo =12V Ic=50mA RGk=1kΩ Tj=25°C		6	mA
Holding current	IH			6	mA
Critical-rate of rise of commutation voltage	dVp/dt	Vo=0.67VDRM Gate Open Tj=110°C	10		V/μs
STATIC CHARACTERISTICS					
Forward "on" voltage	V _{TM}	ITM=4A tp=380μs		1.55	V
Repetitive Peak Off-State Current	IDRM	Vo =VDRM VR =VRRM		5	μA
Repetitive Peak Reverse Current	IRRM		T=110°C		0.1
THERMAL RESISTANCES					
Thermal resistance	Rth(j-c)	Junction to case	TYP.	20	°C/W
	Rth(j-a)	Junction to ambient	TYP.	60	°C/W

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Typical Characteristics

FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

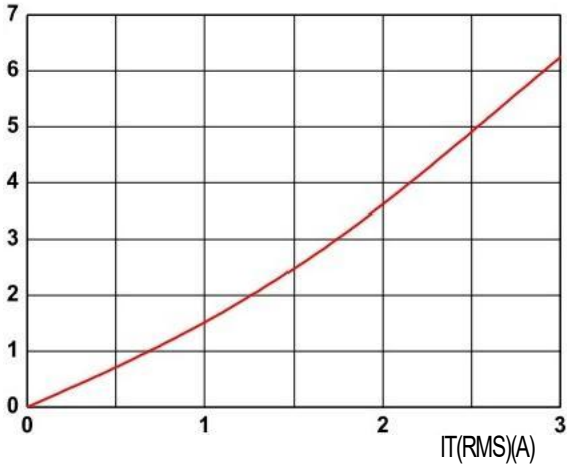


FIG.2: RMS on-state current versus case temperature (full cycle)

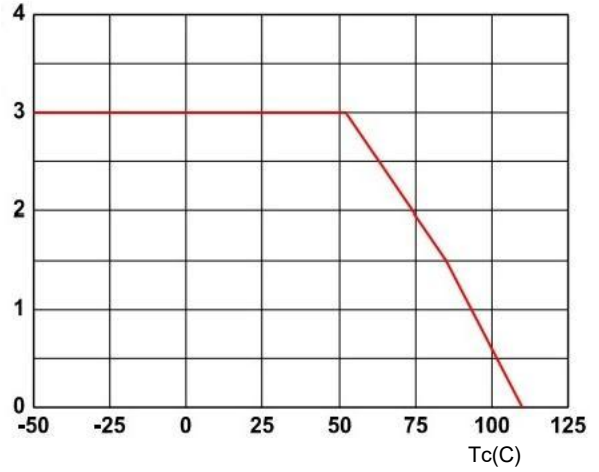


FIG.3: Surge peak on-state current versus number of cycles

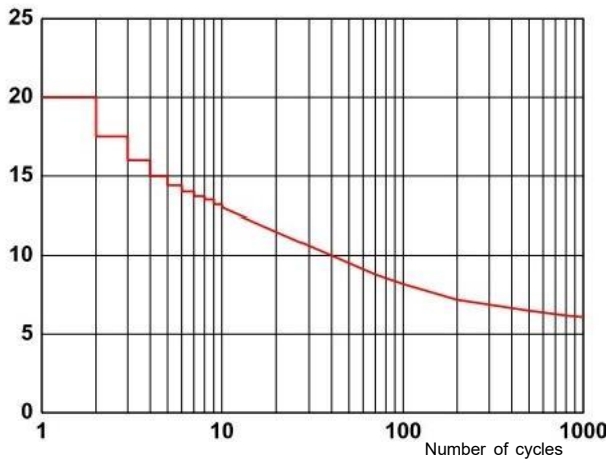


FIG.4: On-state characteristics (maximum values)

FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

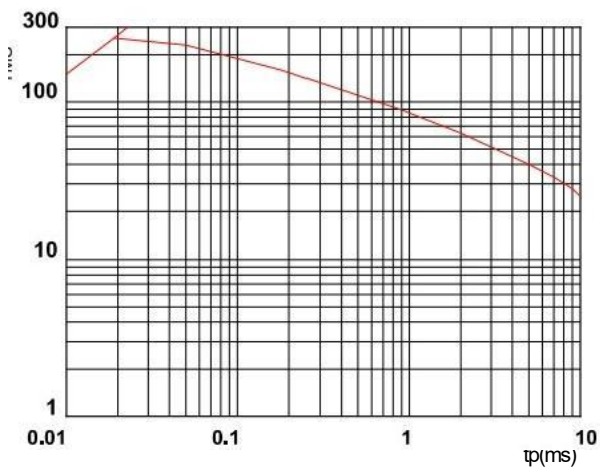
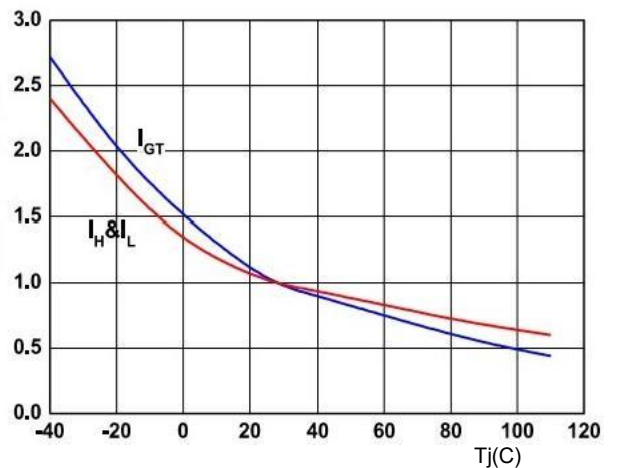
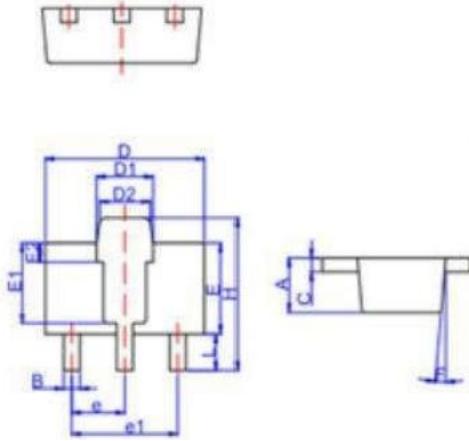


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



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SOT-89-3L Package Information



Ret.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.35		0.52	0.014		0.020
C	0.35		0.46	0.014		0.018
D	4.30		4.70	0.169		0.185
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.30		2.70	0.091		0.106
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.069	
et		3.00			0.118	
F		5			5	
H	3.94		4.0	0.155		0.157
L	0.80		1.20	0.031		0.047