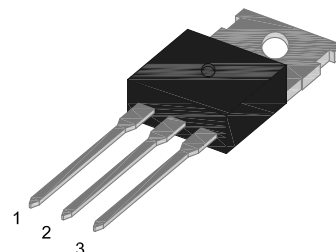


DESCRIPTION:

High current density due to mesa technology;Glass Passivation.

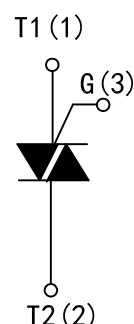
JST139C series triacs is suitable for general purpose AC switching.They can be used as an ON/OFF Function in applications such as static relays, heating regulation, induction motor stator circuits... or for phase control operation light dimmers,motorspeed controllers.



JST139C(TO-220C Package)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	600 and 800	V
V_{TM}	1.6	V



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40 to +150	°C
Operating junction temperature range		T_j	-40 to +125	°C
Repetitive Peak Off-state Voltage	$T_j=25^{\circ}\text{C}$	V_{DRM}	600 and 800	V
Repetitive Peak Reverse Voltage	$T_j=25^{\circ}\text{C}$	V_{RRM}	600 and 800	
Non repetitive Surge Peak Off-state Voltage	$t_p=10\text{ms}, T_j=25^{\circ}\text{C}$	V_{DSM}	700 and 900	V
Non repetitive Peak Reverse Voltage		V_{RSM}	700 and 900	
RMS on-state current (full sine wave)	$T_c=99^{\circ}\text{C}$	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (full cycle, $T_j=25^{\circ}\text{C}$)	$f = 60 \text{ Hz}, t=16.7\text{ms}$	I_{TSM}	150	A
	$f = 50 \text{ Hz}, t=20\text{ms}$		140	
I^2t Value for fusing	$t_p=10\text{ms}$	I^2t	98	A^2s
Critical rate of rise of on-state current $I_G=2 \times I_{GT}, t_r \leq 100 \text{ ns}, f=120\text{Hz}, T_j=125^{\circ}\text{C}$	I-II-III IV	di/dt	50 10	$\text{A}/\mu\text{s}$
Peak gate current	$t_p=20\mu\text{s}, T_j=125^{\circ}\text{C}$	I_{GM}	2	A
Peak gate power	$t_p=20\mu\text{s}, T_j=125^{\circ}\text{C}$	P_{GM}	5	W
Average gate power dissipation	$T_j=125^{\circ}\text{C}$	$P_{G(AV)}$	0.5	W

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

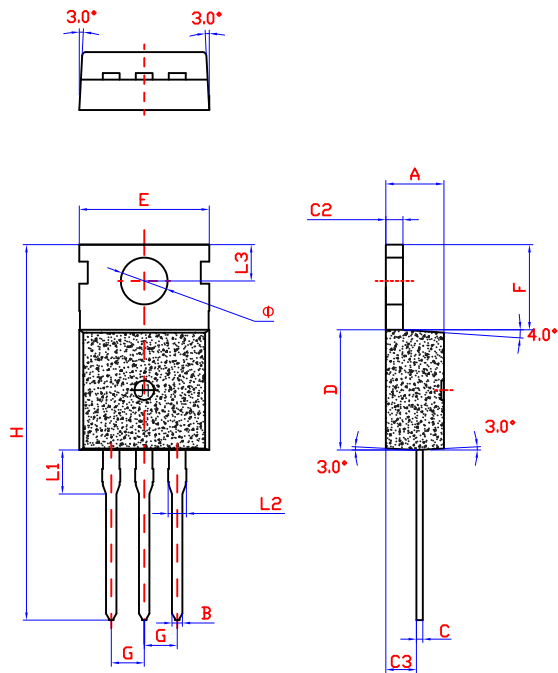
Symbol	Test Condition	Quadrant		JST139C				Unit
				D	E	F	G	
I _{GT}	V _D =12V R _L =33Ω	I-II-III IV	MAX.	5 10	10 25	25 70	50 100	mA
V _{GT}		ALL	MAX.	1.3				V
V _{GD}	V _D =V _{DRM} R _L =3.3KΩ T _j =125°C	ALL	MIN.	0.2				V
I _L	I _G =1.2I _{GT}	I-III-IV	MAX.	15	30	40	60	mA
		II	MAX.	20	40	60	90	mA
I _H	I _T =100mA		MAX.	10	25	30	60	mA
dV/dt	V _D =67%V _{DRM} gate open T _j =125°C		MIN.	5	10	50	200	V/μs
(dV/dt) _c	(dI/dt) _c =7.2A/ms T _j =125°C		MIN.	1	2	5	10	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =20A, t _p =380μs	T _j =25°C	1.6	V
I _{DRM} I _{RRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	5	μA
		T _j =125°C	1	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction to Case(AC)	1.2	°C/W

PACKAGE MECHANICAL DATA
TO-220C


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.7		0.9	0.027		0.035
C	0.45		0.6	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.2		2.6	0.086		0.102
D	8.9		9.9	0.350		0.390
E	9.9		10.3	0.390		0.406
F	6.3		6.9	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
L1		3.2			0.126	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
Φ		3.6			0.142	

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

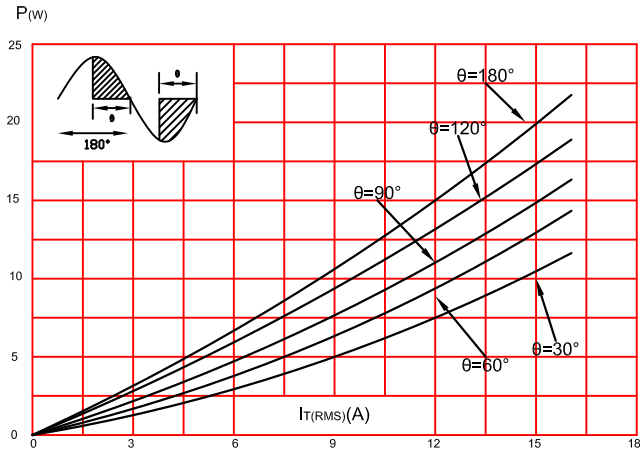


FIG.3:On-state characteristics (maximum values).

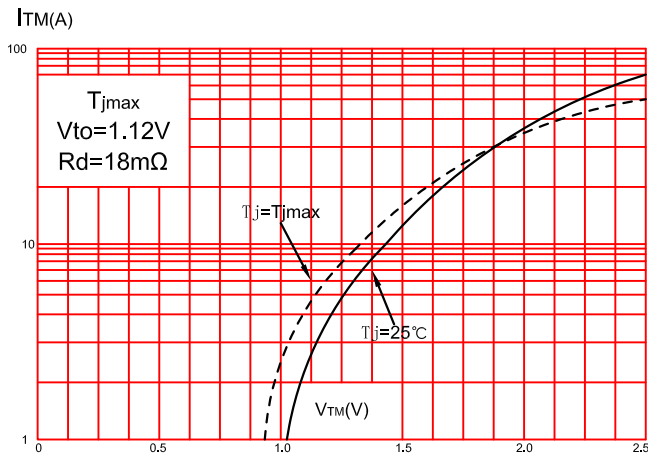


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

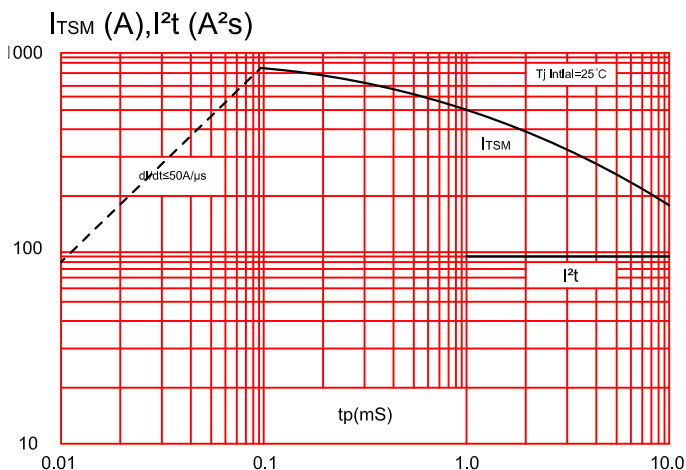


FIG.2:RMS on-state current versus case temperature(full cycle)

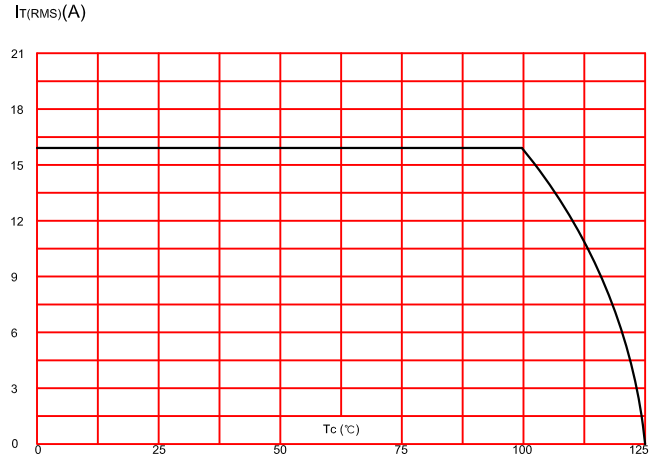


FIG.4:Surge peak on-state current versus number of cycles.

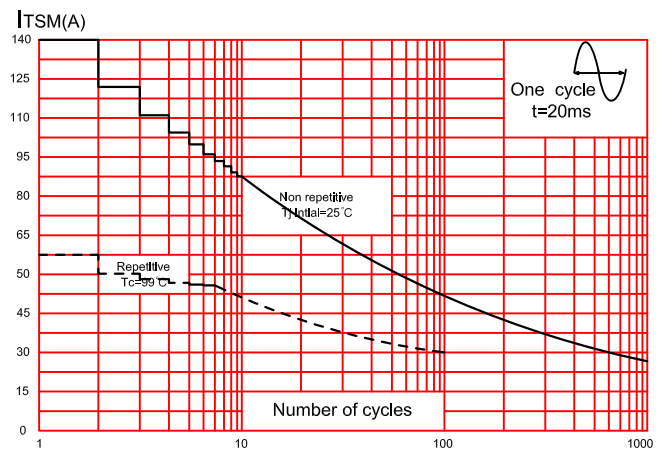


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)

