JST12FH Series 12A TRIACs

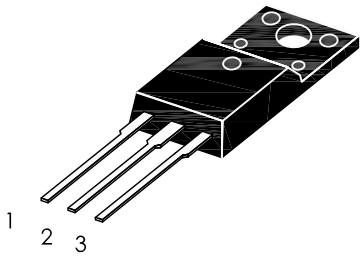
DESCRIPTION:
High current density due to single mesa technology ; Glass Passivation ; guaranteed maximum junction temperature 150°C.

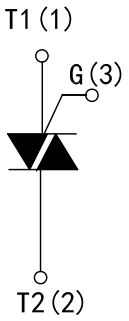
JST12FH series triacs is suitable for general purpose AC switching.They can be used as an ON/OFF Function in applications such as static relays,washing machine,flush toilet,heating regulation, induction motor stating circuits... or for phase contol operation light dimmers,motorspeed controllers.

JST12FH are 3 Quadrants triacs,They are specially recommended for use on inductive loads.

JST12FH are full pack plastic package,they provides a 2500V RMS isolation voltage from all three terminals to extemal heetsink.

TO-220F





MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	600 and 800	V
$I_{GT(Q1)}$	5 to 30	mA

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	˚C
Operrating junction temperature range		Tj	-40 to +150	˚C
Repetitive Peak Off-state Voltage	Tj=25˚C	V_{DRM}	600and800	V
Repetitive Peak Reverse Voltage	Tj=25˚C	V_{RRM}	600and800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25˚C	V_{DSM}	700and900	V
Non repetitive Peak Reverse Voltage		V_{RSM}	700and900	
RMS on-state current (full sine wave)	TO-220F Tc=103˚C	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle,Tj=25˚C)	f = 60 Hz t=16.7ms	I_{TSM}	126	A
	f = 50 Hz t=20ms		120	
I^2t Value for fusing	tp=10ms	I^2t	72	A^2s
Critical rate of rise of on-state current $I_G=2\times I_{GT}$, tr≤100 ns, f=120Hz, Tj=150˚C		dI /dt	50	A/μs
Peak gate current tp=20us,Tj=150˚C		I_{GM}	2	A
Average gate power dissipation Tj=150˚C		$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS(Tj=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Limits	Unit
I_{GT}	V_D=12V R_L=33Ω	I-II-III	MAX.	35	mA
V_{GT}		I-II-III	MAX.	1.5	V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj =125℃	I-II-III	MIN.	0.2	V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj =150℃	I-II-III	MIN.	0.1	V
I_L	I_G=1.2I_{GT}	I-III	MAX.	50	mA
		II	MAX.	110	mA
I_H	I_T =100mA		MAX.	50	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=150℃		MIN.	1000	V/μs
(dV/dt)c	(dI/dt)c=4A/ms Tj=125℃		MIN.	10	V/μs
	(dI/dt)c=4A/ms Tj=150℃			1	

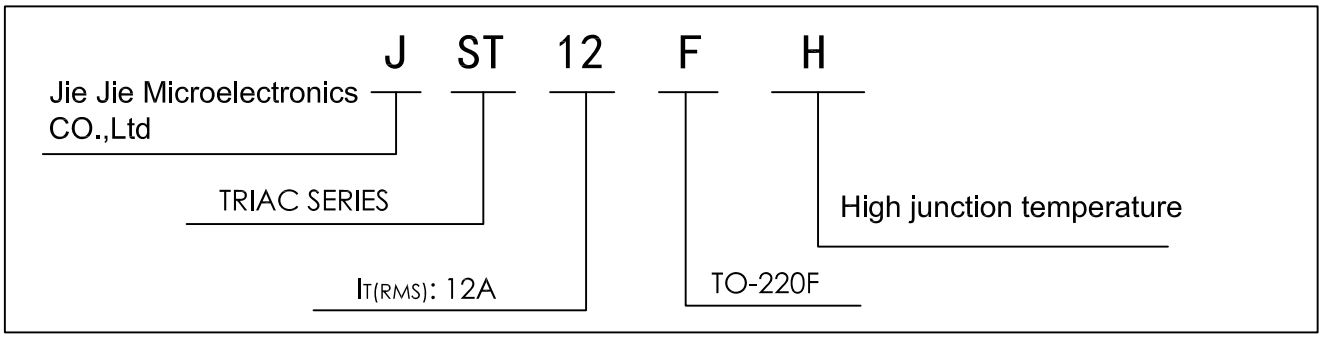
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=20A,tp=380μs	Tj=25℃	1.6	V
I_{DRM} I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}	Tj=25℃	5	μA
		Tj=150℃	2	mA

THERMAL RESISTANCES

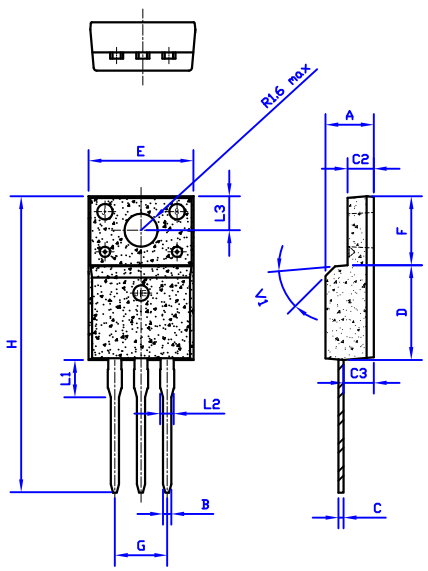
Symbol	Parameter		Value	Unit
$R_{th(J-C)}$	Junction to Case(AC)	TO-220F	3.5	℃/W

ORDERING INFORMATION



PACKAGE MECHANICAL DATA

TO-220F



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.8	0.173		0.189
B	0.74	0.8	0.83	0.029	0.031	0.033
C	0.5		0.75	0.020		0.030
C2	2.4		2.7	0.094		0.106
C3	2.6		3.0	0.102		0.118
D	8.8		9.3	0.346		0.367
E	9.7		10.3	0.382		0.406
F	6.4		6.8	0.252		0.268
G	5.0		5.2	0.197		0.205
H	28.0		29.8	11.0		11.7
L1		3.63			0.143	
L2	1.14		1.7	0.044		0.067
L3		3.3			0.130	
V1		40°			40°	

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

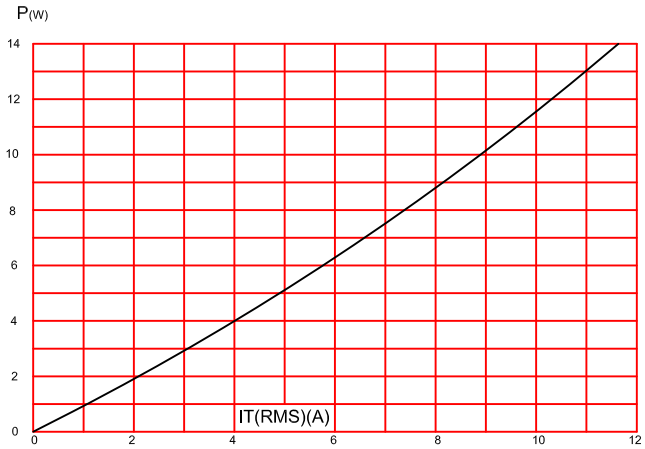


FIG.2:RMS on-state current versus case temperature(full cycle)

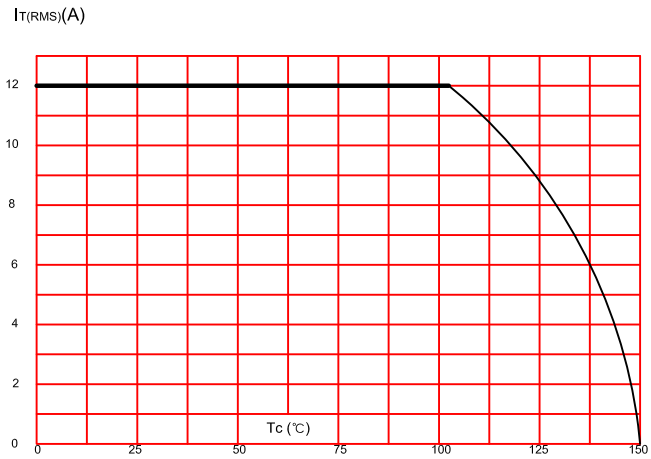


FIG.3:On-state characteristics (maximum values).

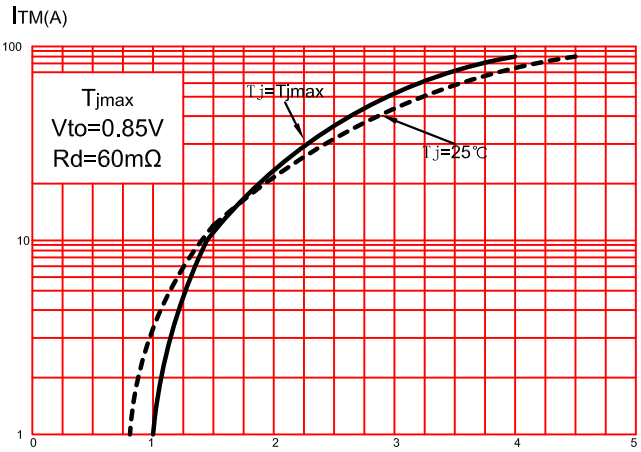


FIG.4:Surge peak on-state current versus number of cycles.

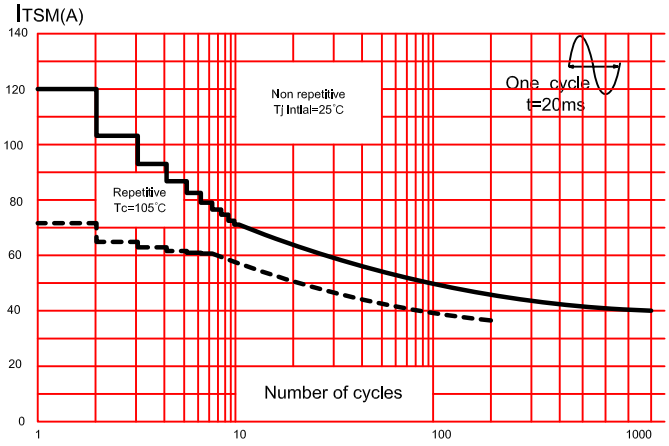


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

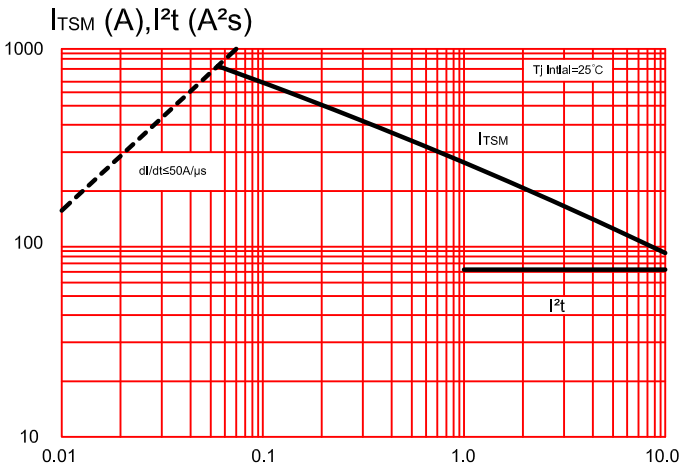


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)