



T12xxHxF Series 12A TRIACs

DESCRIPTION:

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

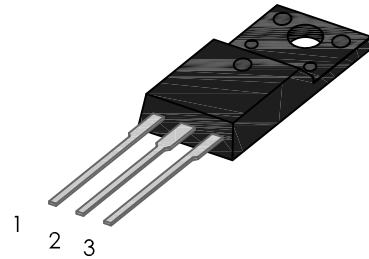
T12xxH series triacs is suitable for general purpose
AC switching.They can be used as an ON/OFF
Function in applications such as static relays,washing
machine,soymilk maker,flush toilet,heating regulation,
induction motor starting circuits... or for phase control
operation light dimmers,motorspeed controllers.

T12xxH are 3 Quadrants triacs,They are specially
recommended for use on inductive loads.

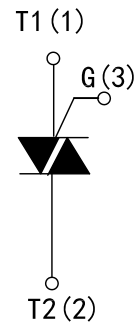
T12xxHxF are full pack plastic package,they provides
a 2000V RMS isolation voltage from all three terminals
to external heatsink complying with UL standards (File
ref.:E252906).

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	600 and 800	V
V_{TM}	≤ 1.55	V



T12xxHxF(TO-220F Package)
UL File:E252906



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	°C
Operating junction temperature range		Tj	-40 to +150	°C
Repetitive Peak Off-state Voltage	Tj=25°C	VDRM	600and800	V
Repetitive Peak Reverse Voltage	Tj=25°C	VRRM	600and800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25°C	VDSM	700and900	V
Non repetitive Peak Reverse Voltage		VRSM	700and900	
RMS on-state current (full sine wave)	TO-220F Tc=97°C	IT(RMS)	12	A
Non repetitive surge peak on-state current (full cycle,Tj=25°C)	f = 60 Hz t=16.7ms	ITSM	126	A
	f = 50 Hz t=20ms		120	
I²t Value for fusing	tp=10ms	I²t	78	A²s
Critical rate of rise of on-state current IG=2×IGT, tr≤100 ns, f=120Hz, Tj=150°C		di /dt	50	A/μs
Peak gate current	tp=20us,Tj=150°C	IGM	2	A
Peak gate power	tp=20us,Tj=150°C	PGM	5	W
Average gate power dissipation	Tj=150°C	PG(AV)	1	W

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

Symbol	Test Condition	Quadrant		Limits				Unit
				T1210H	T1220H	T1235H	T1250H	
I _{GT}	V _D =12V R _L =33Ω	I-II-III	MAX.	10	20	35	50	mA
V _{GT}		I-II-III	MAX.	1.5				V
V _{GD}	V _D =V _{DRM} R _L =3.3KΩ T _j =150°C	I-II-III	MIN.	0.2				V
I _L	I _G =1.2I _{GT}	I-III	MAX.	20	40	50	70	mA
		II	MAX.	35	55	70	100	mA
I _H	I _T =100mA		MAX.	20	30	45	60	mA
dV/dt	V _D =67%V _{DRM} gate open T _j =150°C		MIN.	200	500	1000	1500	V/μs
(dV/dt) _c	V _D =400V (dI/dt) _c =-5.3A/ms T _j =150°C		MIN.	1	5	15	20	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =17A, t _p =380μs	T _j =25°C	1.55	V
I _{DRM} I _{RRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	5	μA
		T _j =150°C	3.0	mA

THERMAL RESISTANCES

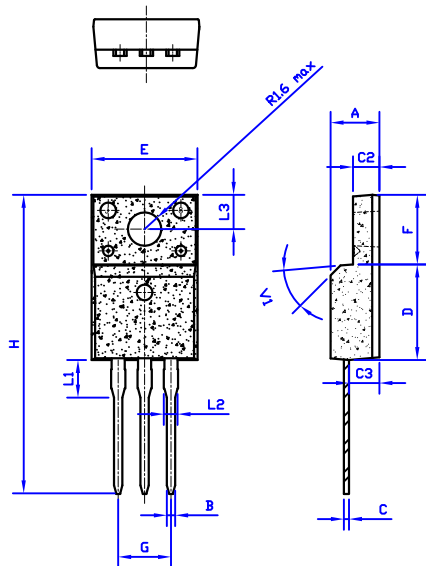
Symbol	Parameter		Value	Unit
R _{th(J-C)}	Junction to Case(AC)	TO-220F	2.3	°C/W

ORDERING INFORMATION

<div> <div>T</div> <div>12</div> <div>xx</div> <div>H</div> <div>x</div> <div>F</div> </div>					
<div> <div>TRIAC SERIES</div> <div>I_{T(RMS)}: 12A</div> <div>10:I_{GT1}/I_{GT2}/I_{GT3}≤10mA</div> <div>20:I_{GT1}/I_{GT2}/I_{GT3}≤20mA</div> <div>35:I_{GT1}/I_{GT2}/I_{GT3}≤35mA</div> <div>50:I_{GT1}/I_{GT2}/I_{GT3}≤50mA</div> </div>		<div> <div>TO-220F</div> <div>6:V_{DRM}/V_{RRM}≥600V</div> <div>8:V_{DRM}/V_{RRM}≥800V</div> <div>High junction temperature</div> </div>			

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°	

Marking:

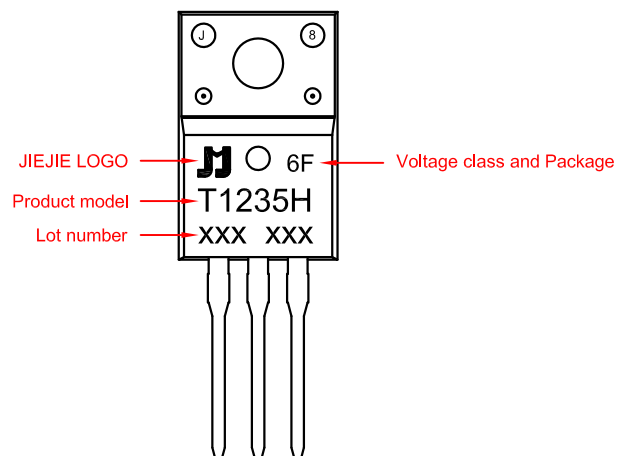


FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

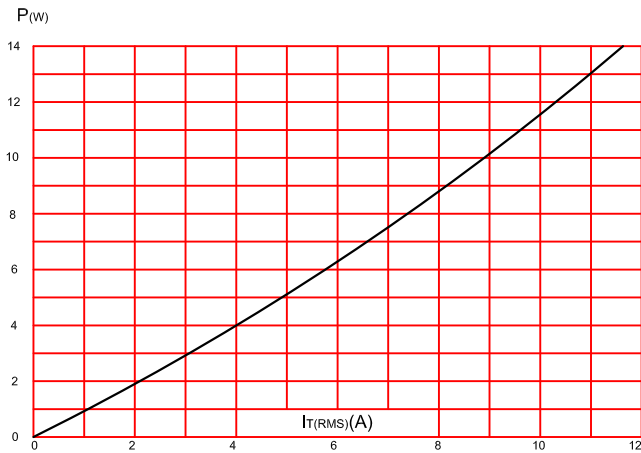


FIG.2:RMS on-state current versus case temperature(full cycle)

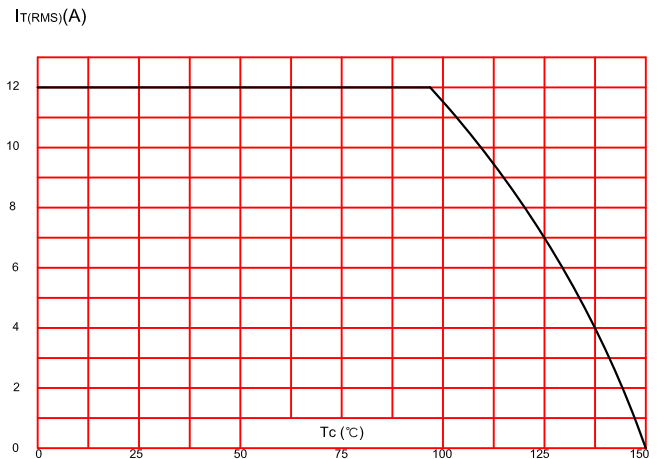


FIG.3:On-state characteristics (maximum values).

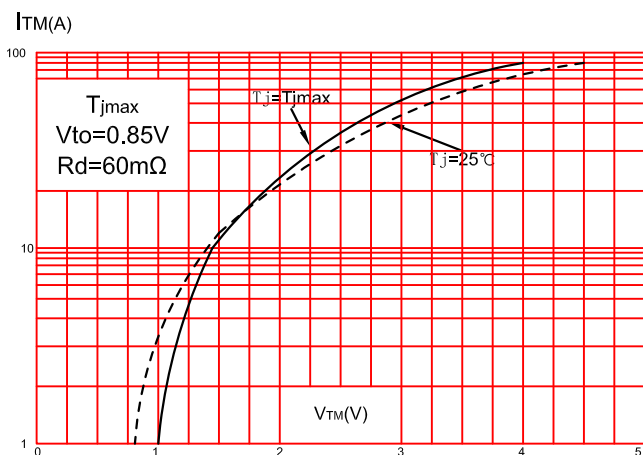


FIG.4:Surge peak on-state current versus number of cycles.

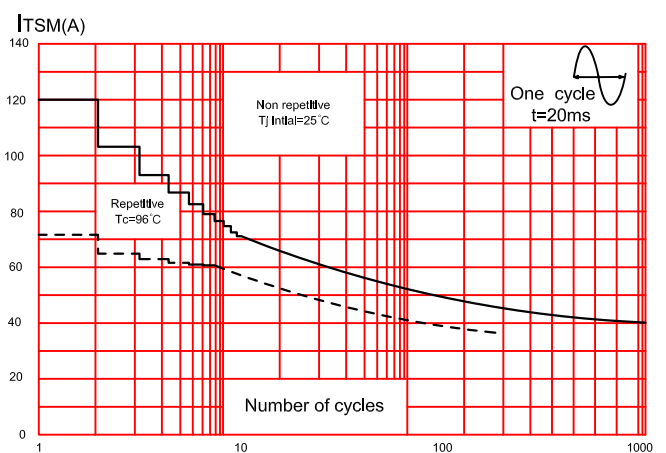
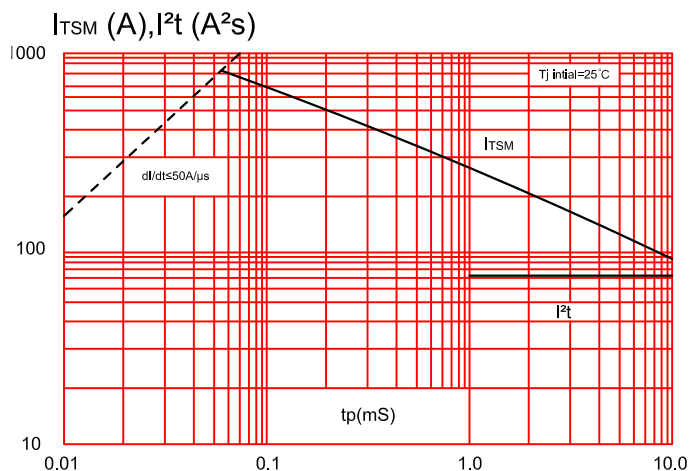
FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

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

