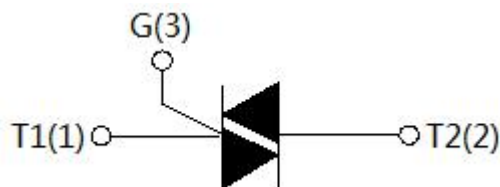


T1235H8F 12A TRIACs



Circuit Diagram



Description

T1235H8F series triacs of high junction temperature with high dv/dt rate with strong resistance to electromagnetic interference provide high ability to withstand the shock loading of large current. They are especially recommended for use on inductive load and high environment temperature condition.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	T_{stg}	-	-40-150	°C
Operating junction temperature range	T_j	-	-40-150	°C
Repetitive peak off-state voltage($T_j=25^{\circ}\text{C}$)	V_{DRM}	-	800	V
Repetitive peak reverse voltage($T_j=25^{\circ}\text{C}$)	V_{RRM}	-	800	V
Non repetitive surge peak Off-state voltage	V_{DSM}	-	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage	V_{RSM}	-	$V_{RRM} + 100$	V
RMS on-state current	$I_{(TRMS)}$	TO-220F(Ins) (TC=95°C)	12	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	-	120	A
I^2t value for fusing (tp=10ms)	I^2t	-	78	A ² s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	-	50	A/μs
Peak gate current	I_{GM}	-	4	A
Average gate power dissipation	$P_{G(AV)}$	-	1	W
Peak gate power	P_{GM}	-	5	W

Electrical Characteristics($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	35	mA
V_{GT}		I - II -III	MAX	1.3	V
V_{GD}	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	I - II -III	MIN	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III	MAX	50	mA
		II		70	
I_H	$I_{TM}=100\text{mA}$		MAX	45	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	1000	V/ μs

Static Characteristics

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=17\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.4	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	2	mA

Thermal Resistances

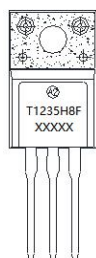
Symbol	Condition		Value	Units
$R_{th(j-c)}$	Junction to case(AC)	TO-220F(Ins)	2.5	$^{\circ}\text{C/W}$

Ordering Information

Triacs $I_{T(RMS)}:12\text{A}$ 20: $I_{GT1-3} \leq 20\text{mA}$		T 12 20 H 8 F F: TO-220F(Ins) 8: $V_{DRM}/V_{RRM} \geq 800\text{V}$ High junction temperature
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Device	Package	Shipping
T1220H8F	TO-220F(Ins)	50pcs/ Tube

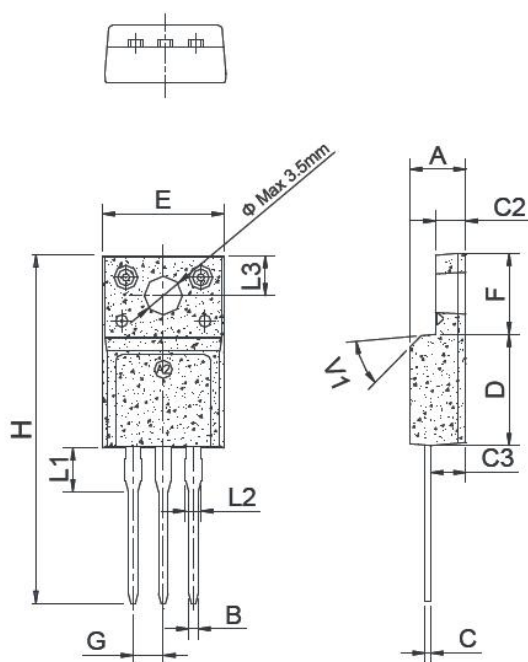
Marking Diagram



Where XXXXX is YYWWL

T1220H8F = Part name
YY = Year
WW = Week
L = Lot Number

Mechanical Dimensions TO-220F(Ins)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

Ratings and Characteristics Curves

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

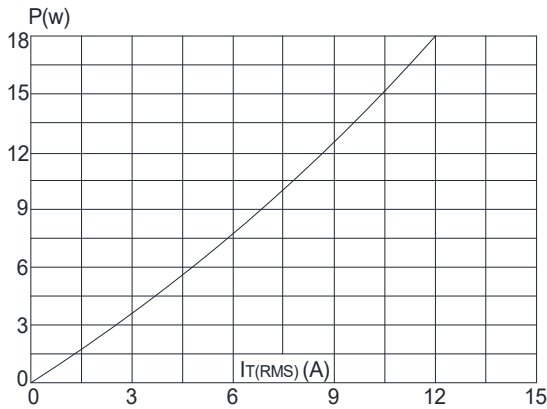


FIG.2: RMS on-state current versus case temperature

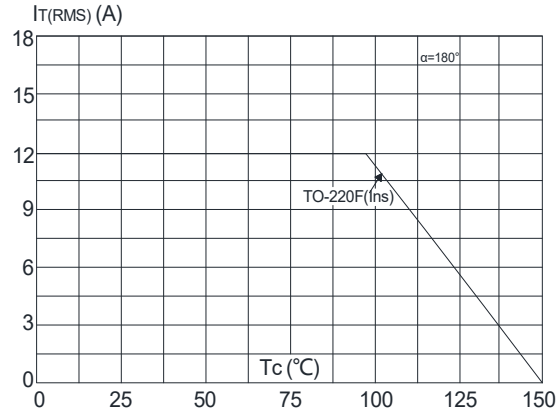


FIG.3: Surge peak on-state current versus number of cycles

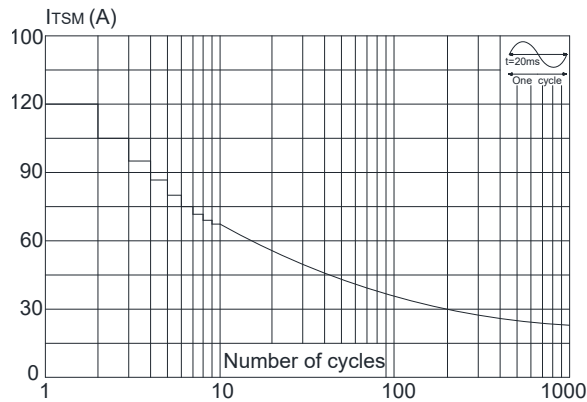


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I^2 t$ ($di/dt < 50A/\mu s$)

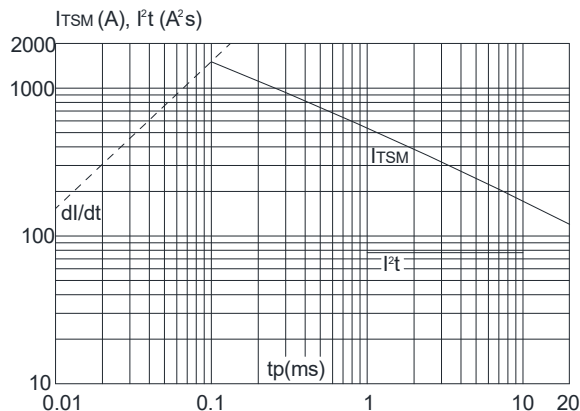


FIG.4: On-state characteristics (maximum values)

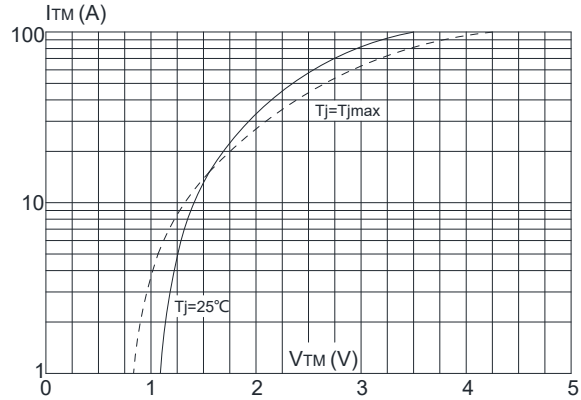
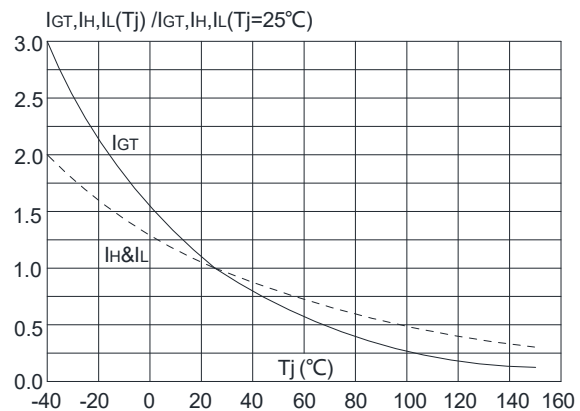


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Technical Data
Data Sheet N2170, Rev.-



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