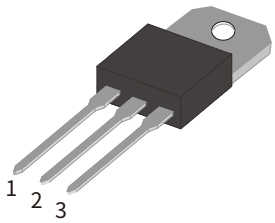
FEATURES

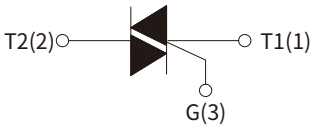
- High current 25 A RMS current Triac
- Low thermal resistance
- High commutation or very high commutation capability



TO-220A

APPLICATIONS

- General purpose motor control circuits
- Phase control operations in light dimmers and motor speed controllers
- Home appliances



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage (T_j=25°C)	V_{DRM}	800	V
Repetitive peak reverse voltage (T_j=25°C)	V_{RRM}	800	V
RMS on-state current (T_C=70°C)	$I_{T(RMS)}$	25	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	250	
I^2t value for fusing (tp=10ms)	I^2t	340	A^2S
Critical rate of rise of on-state current (I_G=2*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}	10	W
Operating junction temperature range	T_j	-40~+125	°C
Storage junction temperature range	T_{STG}	-40~+150	

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

Symbol	Test Condition	Quadrant	Value		Unit
			B	C	
I_{GT}	V_D=12V,R_L=33Ω	I - II - III	⩽50	⩽25	mA
		IV	⩽70	⩽50	
V_{GT}		ALL	⩽1.3		V
V_{GD}	V_D=V_{DRM},R_L=3.3KΩ,T_j=125°C	ALL	⩾0.2		V
I_H	I_T=100mA		⩽75	⩽60	mA
I_L	I_G=1.2I_{GT}	I - III - IV	⩽80	⩽70	
		II	⩽100	⩽90	
dV_D/dt	V_D=67%V_{DRM},T_j=125°C		⩾500	⩾200	V/μs
V_{TM}	I_{TM}=35A,tp=380μs		⩽1.5		V
I_{DRM}	V_D=V_{DRM}, V_R=V_{RRM}	T_j=25°C	⩽5		uA
I_{RRM}		T_j=125°C	⩽3		mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	1.5	°C/W

PARAMETER CHARACTERISTIC CURVE

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

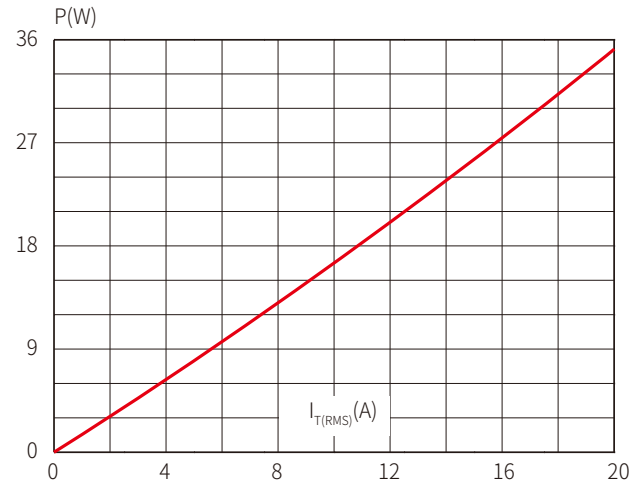


FIG.2: RMS on-state current versus case temperature

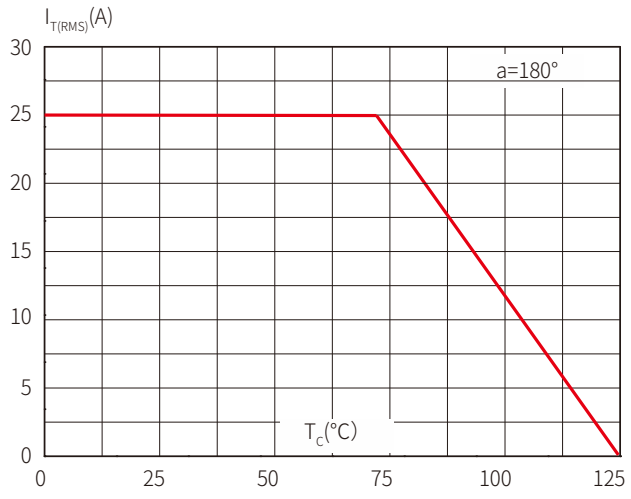


FIG.3: Surge peak on-state current versusnumber of cycles

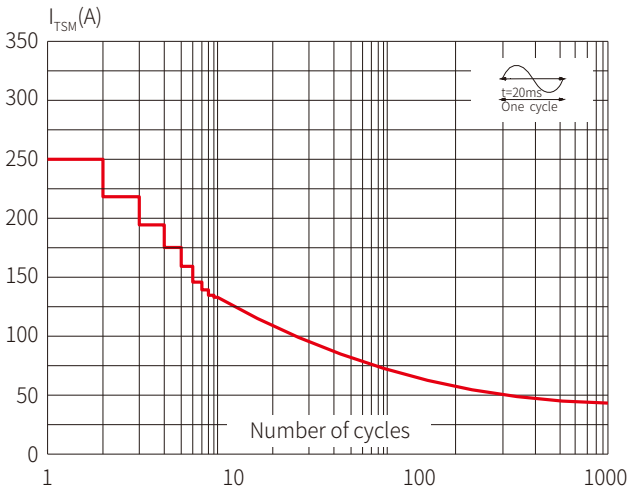


FIG.4 On-state characteristics (maximum values)

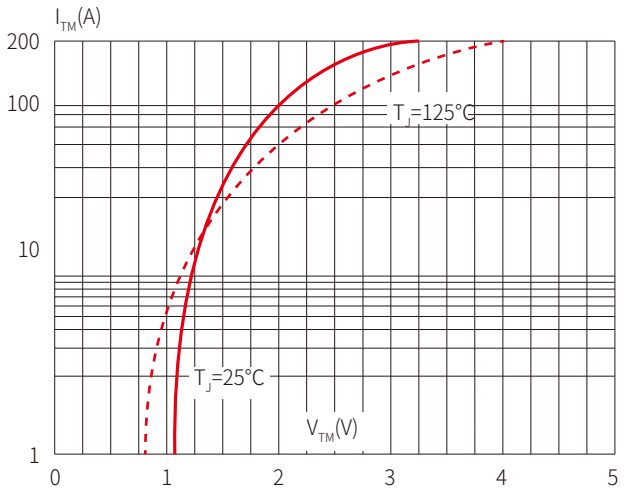


FIG.5: Non-repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<20ms andcorresponding value of I²t (I - II -III:dI/dt<50A/μs; IV:dI/dt<10A/μs)

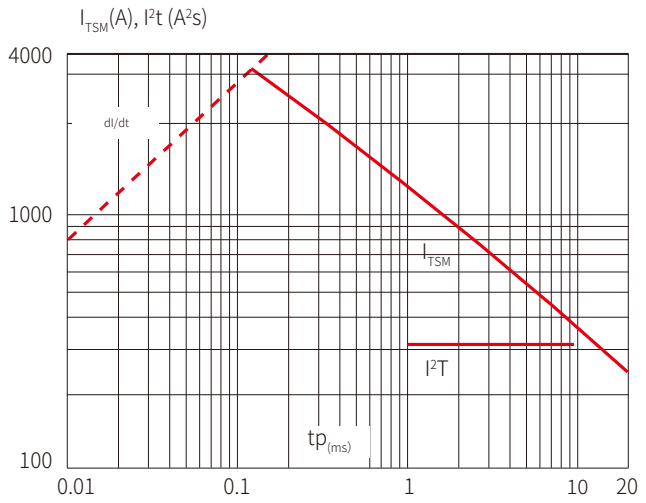


FIG.6 Relative variations of gate trigger current versus junction temperature

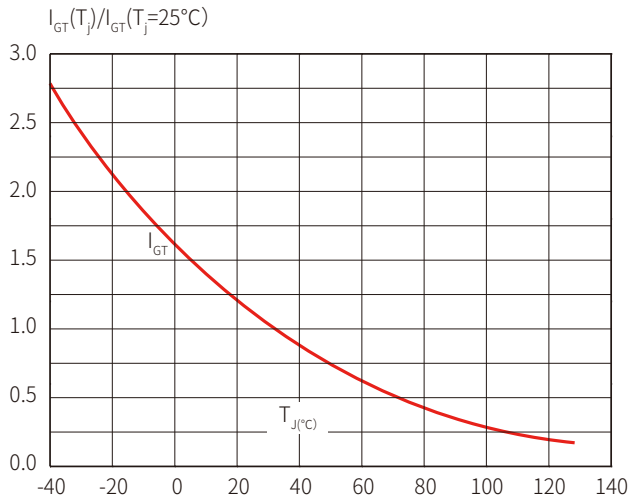


FIG.7 Relative variations of holding current versus junction temperature

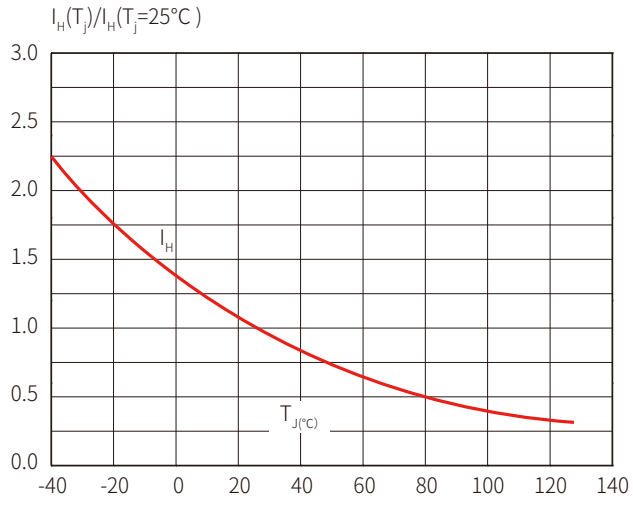
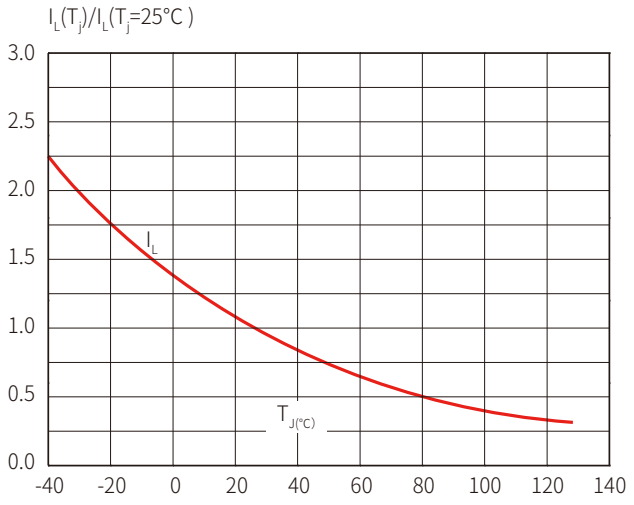
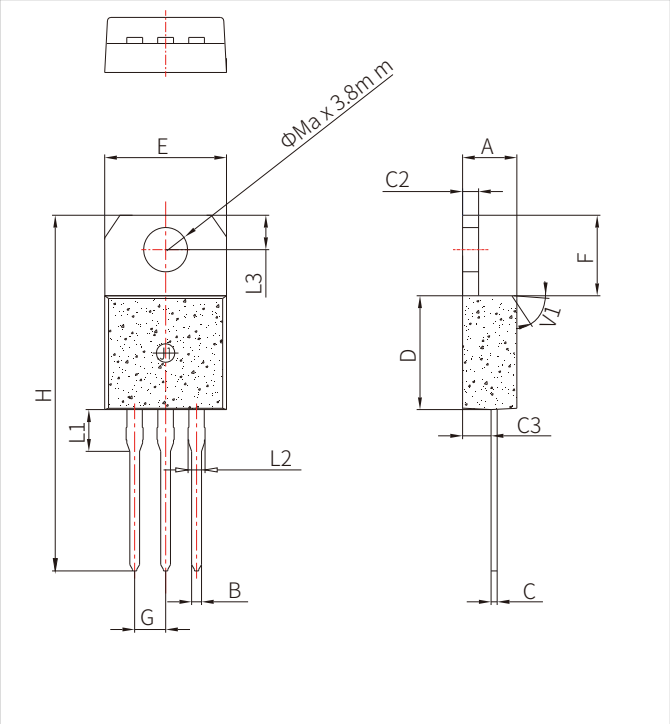


FIG.8 Relative variations of atching current versus junction temperature



TO-220A PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.70	0.169		0.185
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.222		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

ORDERING INFORMATION

Part Number	Package	Qty/pcs		
		Tube	Inner Box	Carton
STA25Q80B(C)	TO-220A	50	1000	5000

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