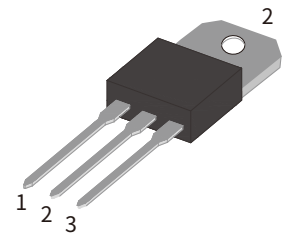


FEATURES

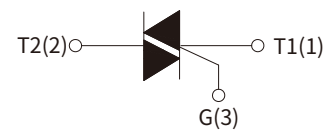
- | High current 25 A RMS current Triac
- | Low thermal resistance
- | High commutation or very high commutation capability



TO-220B(Non-Ins)

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 ($T_j=25^\circ\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	V
RMS on-state current ($T_c=85^\circ\text{C}$)	$I_{\text{T(RMS)}}$	25	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	250	
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	340	A^2S
Critical rate of rise of on-state current ($I_G=2 \cdot I_{\text{GT}}$)	di/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{\text{G(AV)}}$	1	W
Peak gate power	P_{GM}	10	W
Operating junction temperature range	T_j	-40~+125	$^\circ\text{C}$
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		μA
I _{RRM}		T _j =125°C	≤3		mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction to case(AC)	1.1	°C/W

PARAMETER CHARACTERISTIC CURVE

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

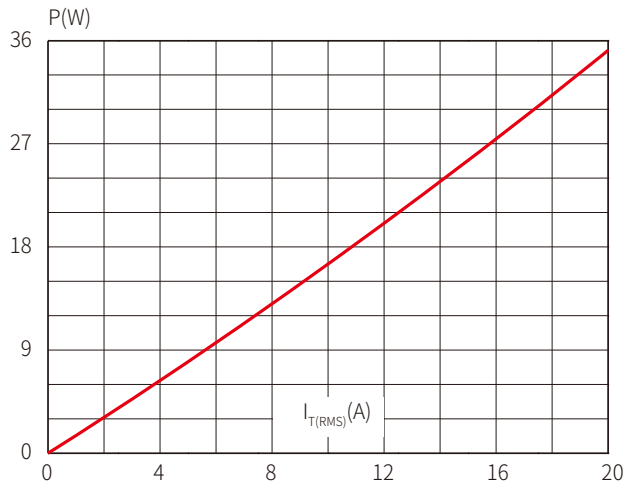


FIG.2: RMS on-state current versus case temperature

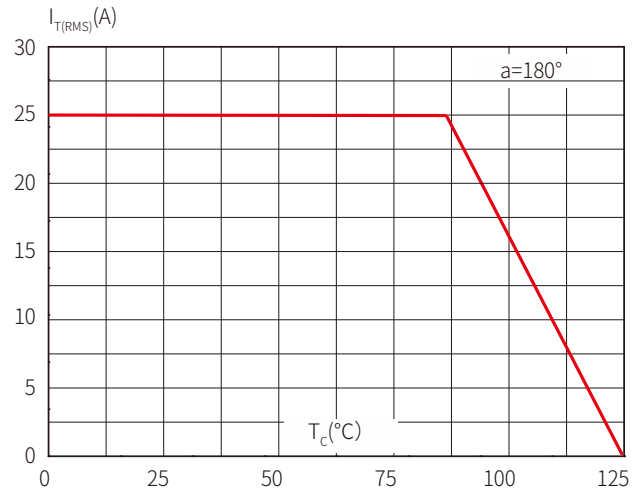


FIG.3: Surge peak on-state current versus number of cycles

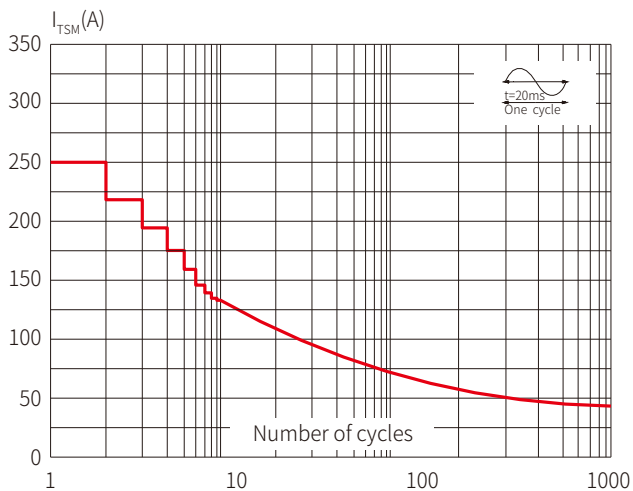


FIG.4 On-state characteristics (maximum values)

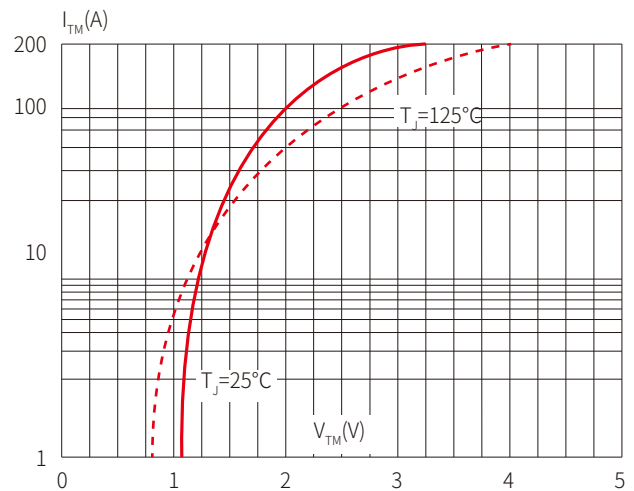


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t (I - II - III: $di/dt < 50\text{A}/\mu\text{s}$; IV: $di/dt < 10\text{A}/\mu\text{s}$)

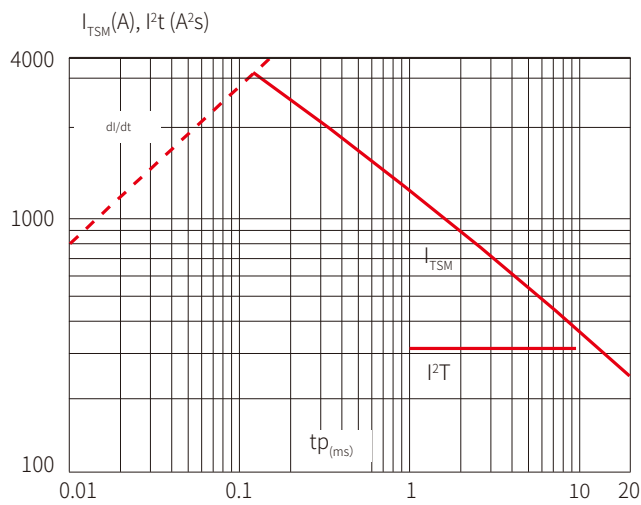


FIG.6 Relative variations of gate trigger current versus junction temperature

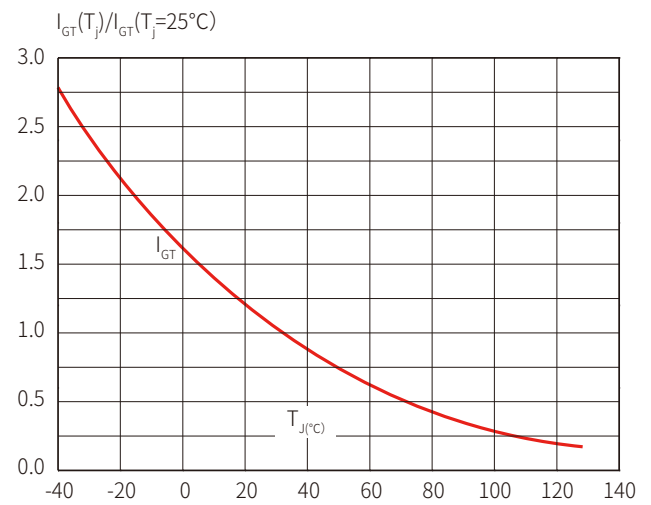


FIG.7 Relative variations of holding current versus junction temperature

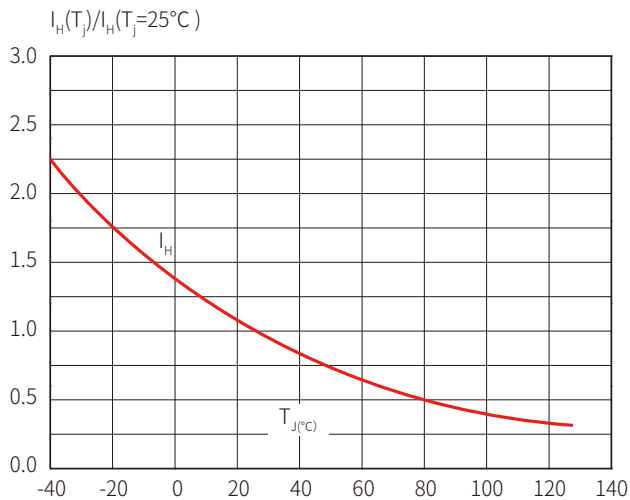
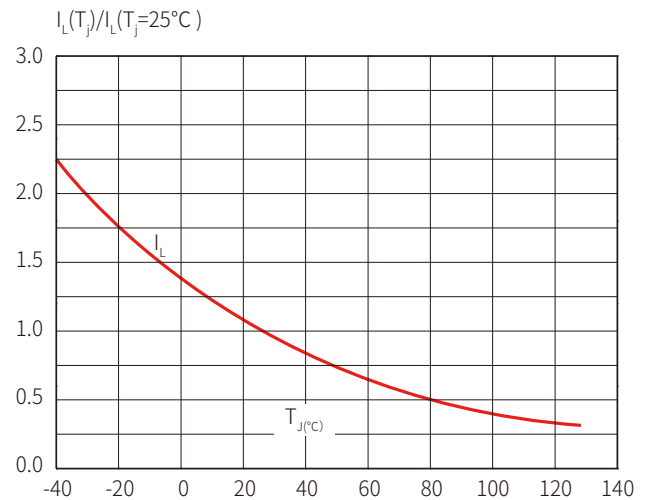
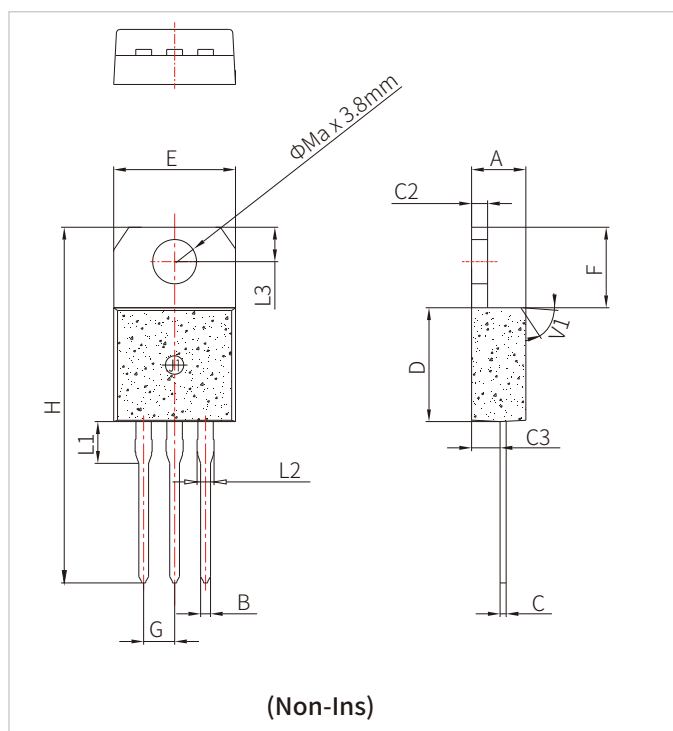


FIG.8 Relative variations of latching current versus junction temperature



TO-220B 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
STB25Q80B(C)	TO-220B	50	1000	5000

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