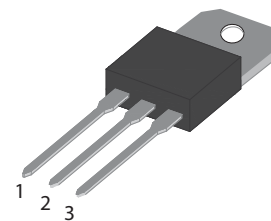


FEATURES

- High current 24 A RMS current Triac
- Low thermal resistance
- High commutation or very high commutation capability
- Extremely sensitive to trigger
- UL-94, V0 flammability package resin compliance



TO-220A

APPLICATIONS

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



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

THE MAIN PARAMETERS

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state current	24	A
V_{DRM}	Off-state repetitive peak voltage	600	V
V_{TM}	On-state voltage	1.5	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage ($T_j=25^{\circ}\text{C}$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}\text{C}$)	V_{RRM}	600	V
RMS on-state current ($T_c=70^{\circ}\text{C}$)	$I_{\text{T(RMS)}}$	24	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	240	
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	340	A^2S
Critical rate of rise of on-state current ($I_G=2 \times I_{\text{GT}}$)	d/d_t	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{\text{G(AV)}}$	1	W
Storage junction temperature range	T_{STG}	$-40 \sim +150$	$^{\circ}\text{C}$
Operating junction temperature range	T_j	$-40 \sim +125$	

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$)

Symbol	Test Condition	Quadrant	Value		Unit
			CW	BW	
I_{GT}	$V_D=12\text{V}, R_L=33\Omega$	I - II - III	≤ 35	≤ 50	mA
V_{GT}			≤ 1.5		V
V_{GD}	$V_D=V_{\text{DRM}}, R_L=3.3\text{K}\Omega, T_j=125^{\circ}\text{C}$		≥ 0.2		V
I_{H}	$I_t=100\text{mA}$		≤ 60	≤ 80	mA
I_{L}	$I_G=1.2I_{\text{GT}}$	I - III	≤ 70	≤ 90	
		II	≤ 80	≤ 100	
dV_D/dt	$V_D=67\%V_{\text{DRM}}, T_j=125^{\circ}\text{C}$		≥ 1000	≥ 1500	$\text{V}/\mu\text{s}$
V_{TM}	$I_{\text{TM}}=35\text{A}, t_p=380\mu\text{s}$		≤ 1.5		V
I_{DRM}	$V_D=V_{\text{DRM}}, V_R=V_{\text{RRM}}$	$T_j=25^{\circ}\text{C}$	≤ 5		μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	≤ 3		mA

THERMAL RESISTANCES

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

PARAMETER CHARACTERISTIC CURVE

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

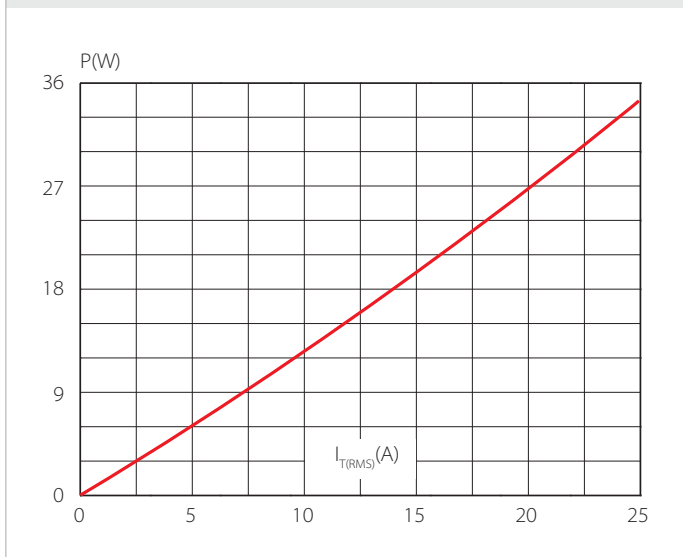


FIG.2: RMS on-state current versus case temperature

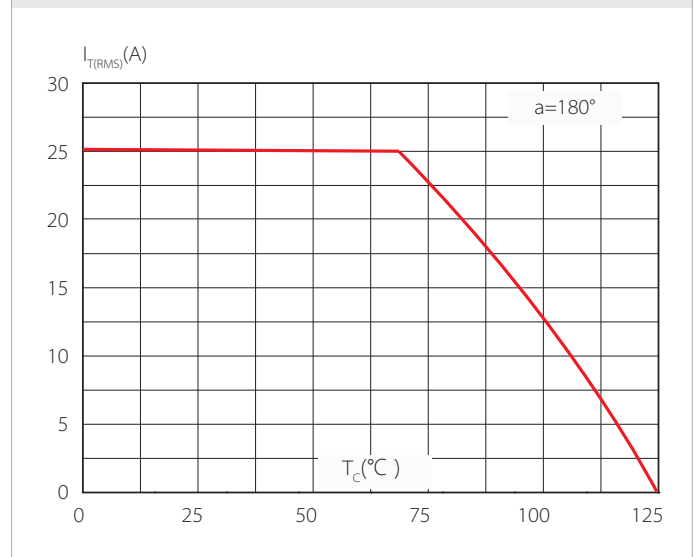


FIG.3: Surge peak on-state current versus number of cycles

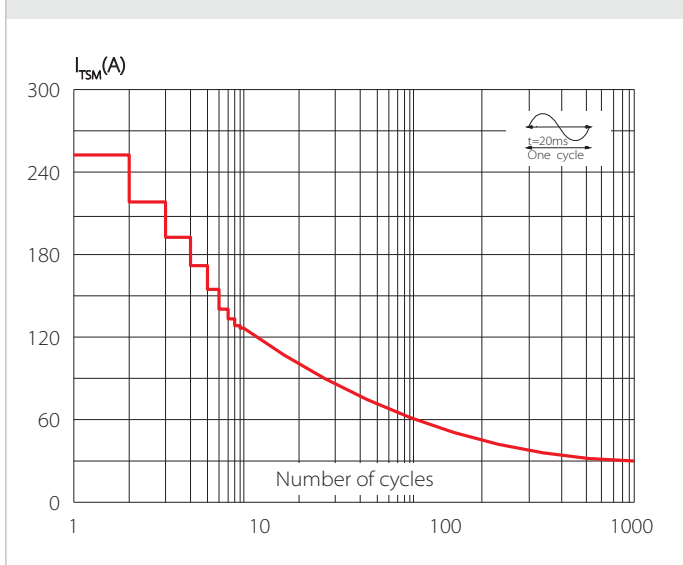


FIG.4 On-state characteristics (maximum values)

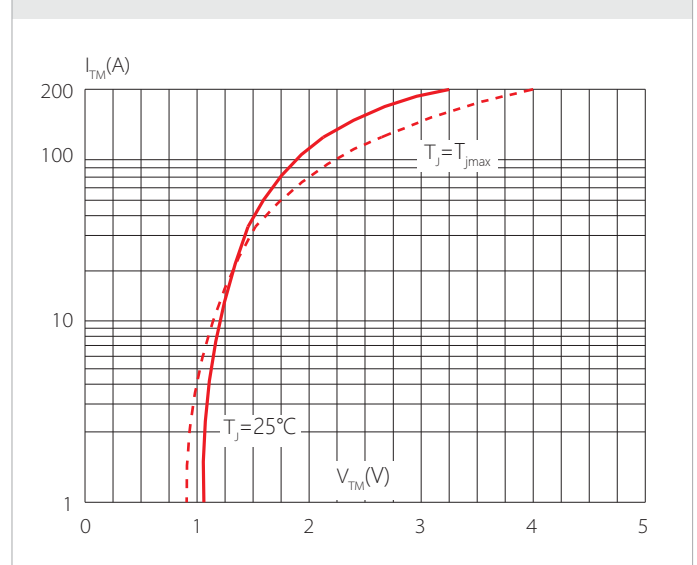


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

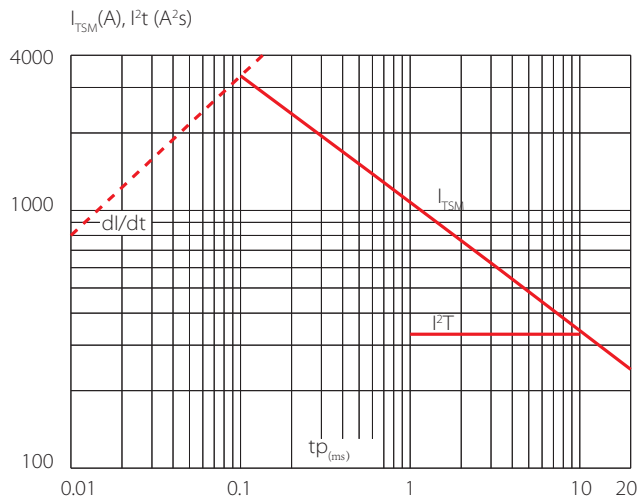


FIG.6 Relative variations of gate trigger current versus junction temperature

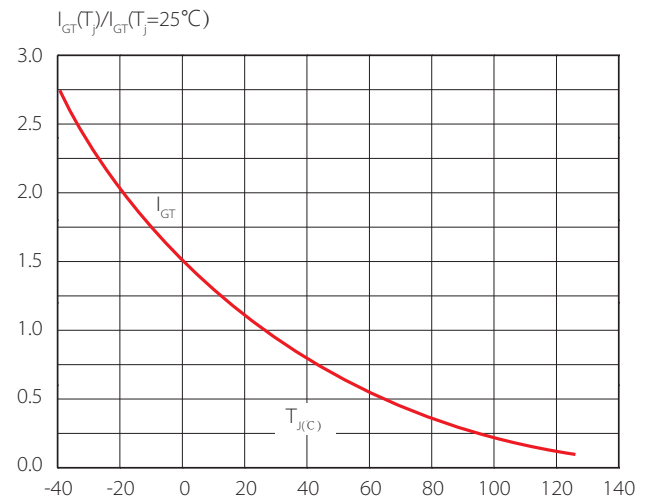


FIG.7 Relative variations of holding current versus junction temperature

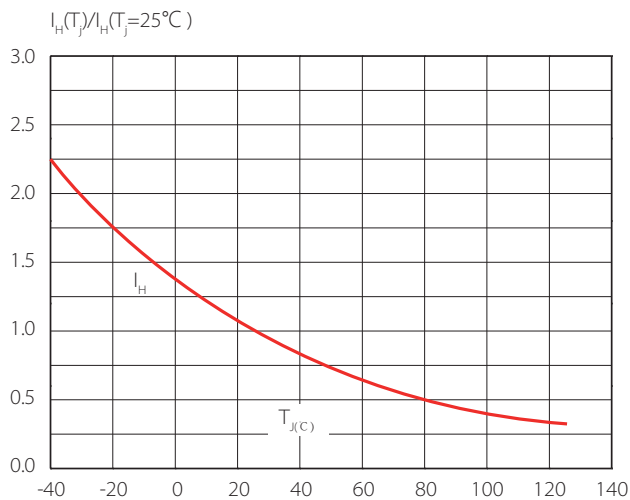
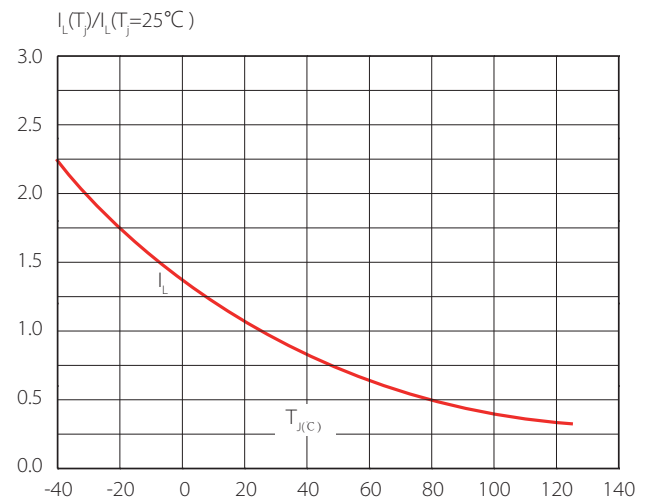
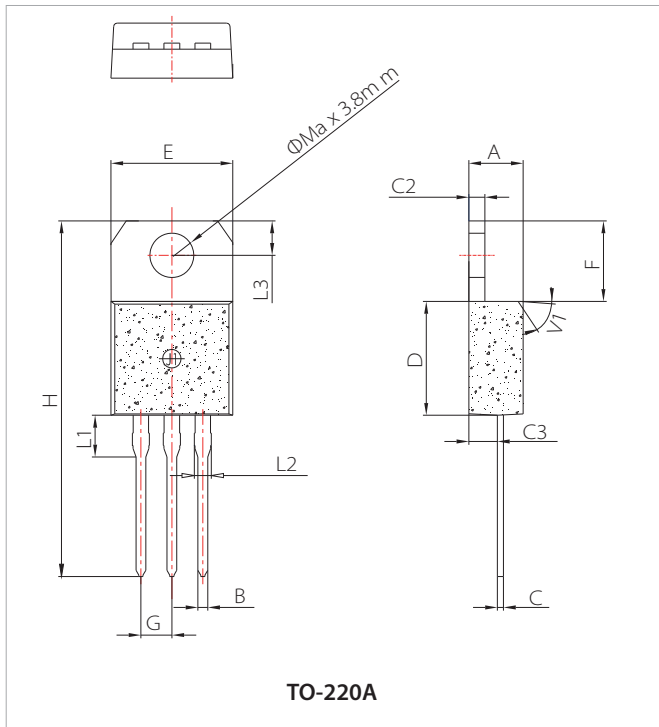


FIG.8 Relative variations of latching current versus junction temperature



PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
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	Marking	Qty/pcs		
			Tube	Inner Box	Carton
BTA24-600CW(BW)	TO-220A	BTA24 600XX	50	1000	5000

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