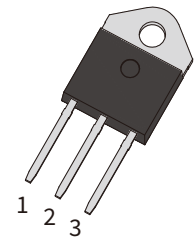


FEATURES

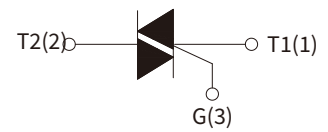
- | High current 100 A RMS current Triac
- | Low thermal resistance
- | High commutation or very high commutation capability



TO-3P

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	100	A
V_{DRM}	Off-state repetitive peak voltage	1200	V
V_{TM}	On-state voltage	1.8	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	1200	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	1200	V
RMS on-state current ($T_c=95^\circ\text{C}$)	$I_{\text{T(RMS)}}$	100	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	1100	
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	1210	
I2t value for fusing ($t_p=10\text{ms}$)	I2t	6050	A2S
Critical rate of rise of on-state current ($I_G=2 \cdot I_{GT}$)	di/dt	100	A/ μs
Peak gate current	I_{GM}	10	A
Average gate power dissipation	$P_{\text{G(AV)}}$	0.5	W
Storage junction temperature range	T_{STG}	-40~+150	°C
Operating junction temperature range	T_j	-40~+125	
Peak gate power	P_{GM}	25	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive,off-state;FIG.7)	V_{PP}	1	kV

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	≤ 50	mA
V_{GT}			≤ 1.3	V
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{K}\Omega, T_j=125^{\circ}\text{C}$	I - II - III	≥ 0.2	V
I_H	$I_T=1\text{A}$		≤ 100	mA
I_L	$I_G=1.2I_{GT}$	I - III	≤ 180	
		II	≤ 180	
dV_D/dt	$V_D=800\text{V}, \text{Gate Open}, T_j=125^{\circ}\text{C}$		≥ 2000	V/ μs
$(di/dt)_c$	$(dV/dt)_c=20\text{V}/\mu\text{s}, T_j=125^{\circ}\text{C}$		≥ 25	A/ms
t_{on}	$I_G=100\text{mA}, I_A=400\text{mA}, I_R=40\text{mA}$ $T_j=25^{\circ}\text{C}$		10	us
t_{off}			70	
V_{TM}	$I_{TM}=150\text{A}, t_p=3100\mu\text{s}, T_j=25^{\circ}\text{C}$		≤ 1.8	V
V_{TO}	Threshold voltage, $T_j=125^{\circ}\text{C}$		≤ 0.67	V
R_D	Dynamic resistance, $T_j=125^{\circ}\text{C}$		≤ 7.5	m Ω
I_{DRM}	$V_D=V_{DRM}, V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	≤ 15	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	≤ 12	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	0.26	°C/W

PARAMETER CHARACTERISTIC CURVE

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

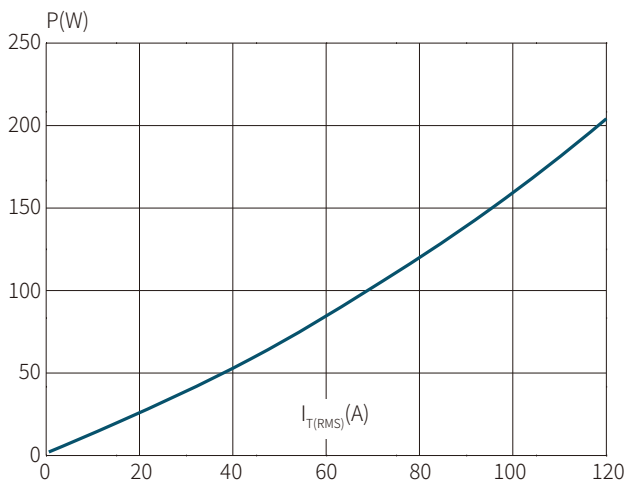


FIG.2: RMS on-state current versus case temperature

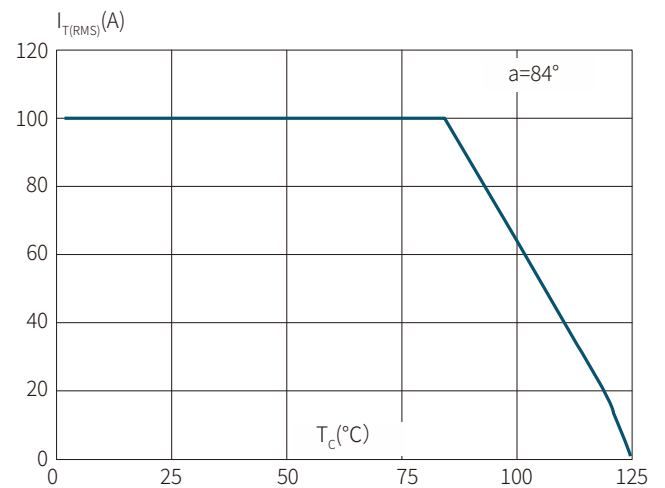


FIG.3: Surge peak on-state current versus number of cycles

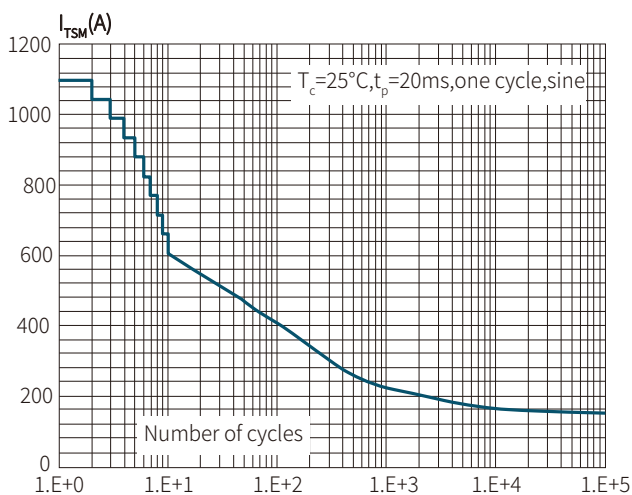


FIG.4 On-state characteristics (maximum values)

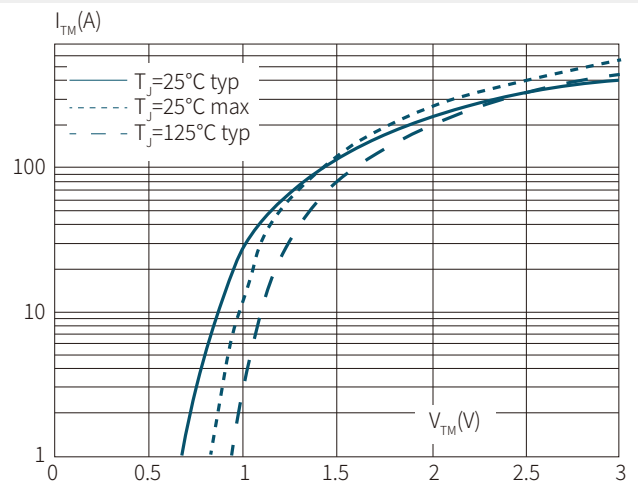


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($dI/dt < 50\text{A}/\mu\text{s}$)

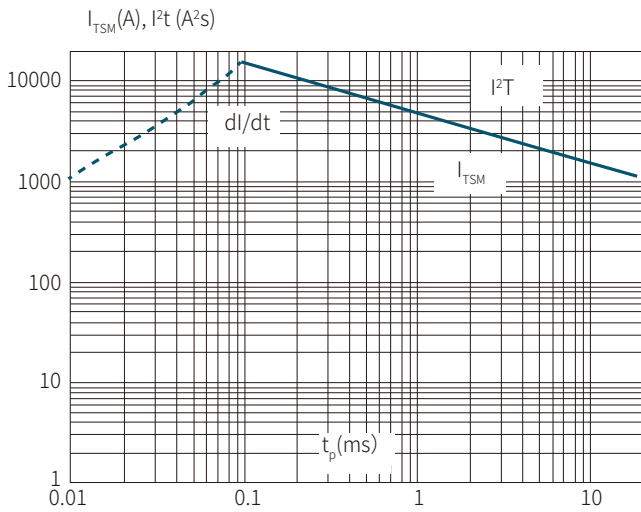


FIG.6 Relative variations of gate trigger current versus junction temperature

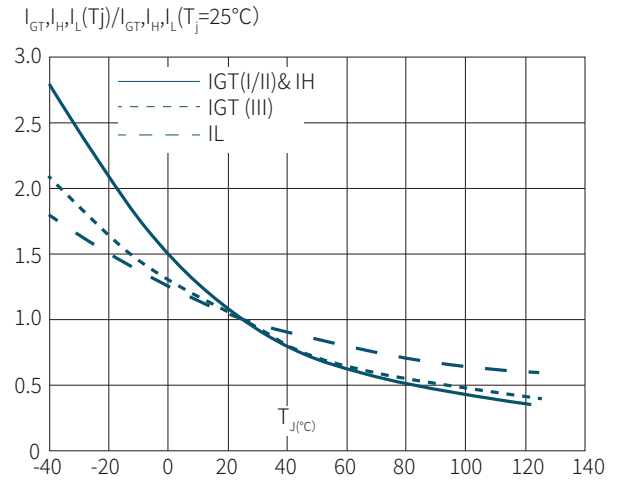
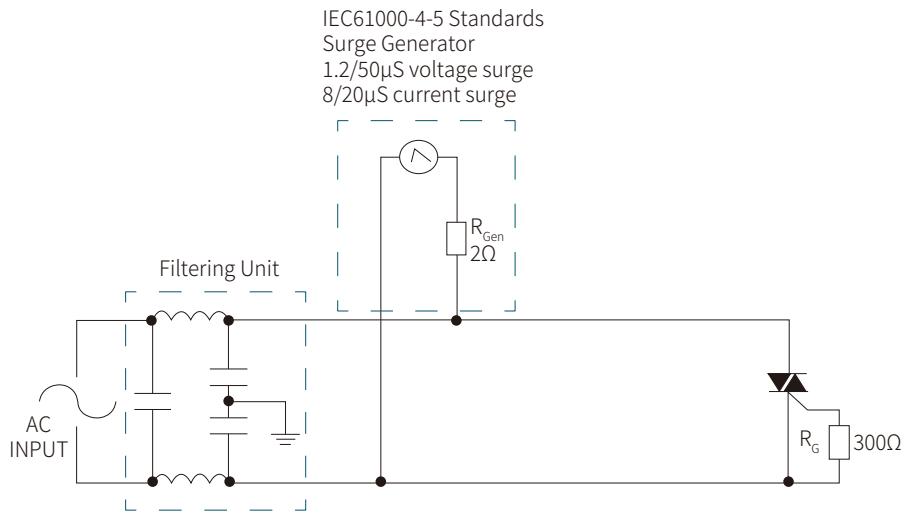
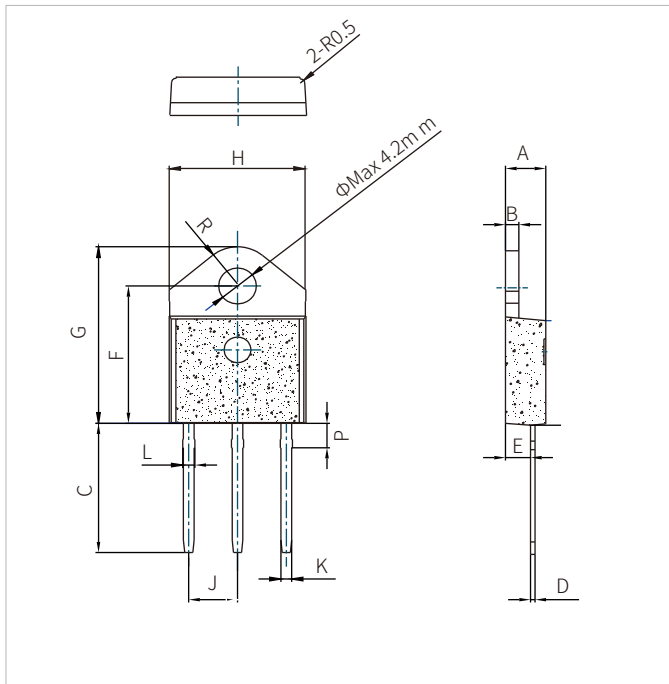


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



TO-3P PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

ORDERING INFORMATION

Part Number	Package	Qty/pcs		
		Tube	Inner Box	Carton
BTA100-1200BW	TO-3P	30	450	3600

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