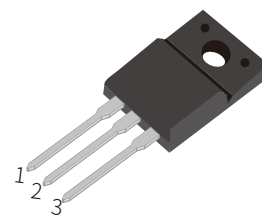


FEATURES

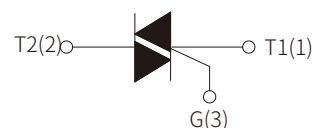
- | High current 30 A RMS current Triac
- | Low thermal resistance
- | High commutation or very high commutation capability



TO-220F

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	30	A
V_{DRM}	Off-state repetitive peak voltage	800	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}	800	V
Repetitive peak reverse voltage ($T_j=25^{\circ}\text{C}$)	V_{RRM}	800	V
RMS on-state current ($T_c \leq 71^{\circ}\text{C}$)	$I_{\text{T(RMS)}}$	30	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^{\circ}\text{C}$)	I_{TSM}	300	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^{\circ}\text{C}$)	I^2t	450	A^2S
Critical rate of rise of on-state current ($I_G=2 \cdot I_{\text{GT}}$, $f=100\text{Hz}$, $T_j=125^{\circ}\text{C}$)	di/dt	100	$\text{A}/\mu\text{s}$
Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^{\circ}\text{C}$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125^{\circ}\text{C}$)	$P_{\text{G(AV)}}$	0.5	W
Storage junction temperature range	T_{STG}	$-40 \sim +150$	$^{\circ}\text{C}$
Operating junction temperature range	T_j	$-40 \sim +125$	

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ 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}	$V_D=V_{\text{DRM}}$, $R_L=3.3\text{K}\Omega$, $T_j=125^{\circ}\text{C}$		≥ 0.15	V
I_{H}	$I_T=500\text{mA}$		≤ 75	mA
I_{L}	$I_G=1.2I_{\text{GT}}$	I - III	≤ 80	
		II	≤ 100	
dV/dt	$V_D=540\text{V}$, Gate Open, $T_j=125^{\circ}\text{C}$		≥ 2000	$\text{V}/\mu\text{s}$
V_{TM}	$I_{\text{TM}}=42\text{A}$, $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	≤ 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}		$T_j=125^{\circ}\text{C}$	≤ 2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	1.3	°C/W

PARAMETER CHARACTERISTIC CURVE

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

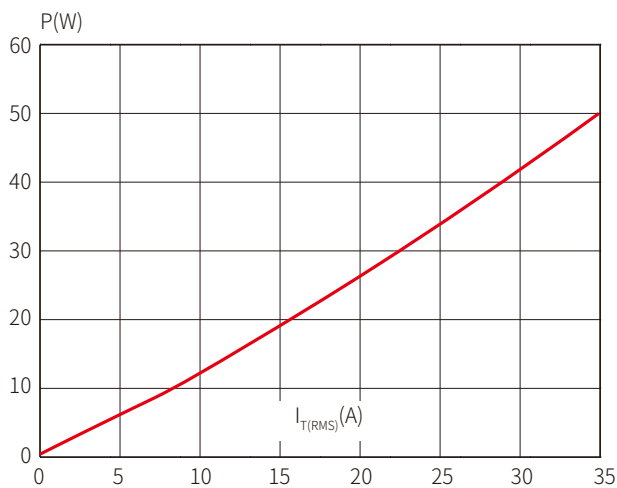


FIG.2: RMS on-state current versus case temperature

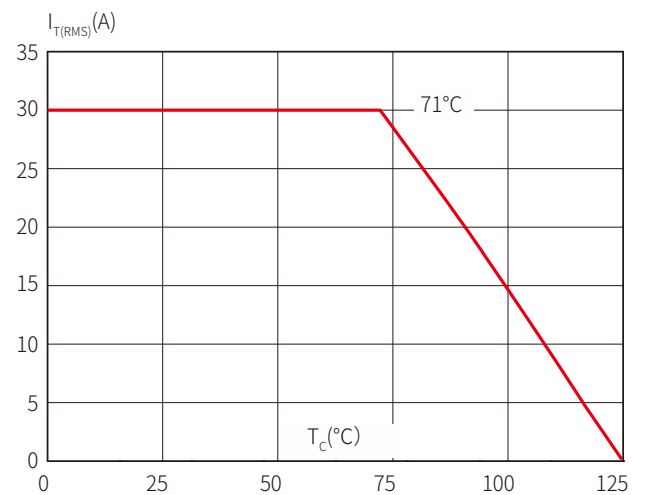


FIG.3: Surge peak on-state current versus number of cycles

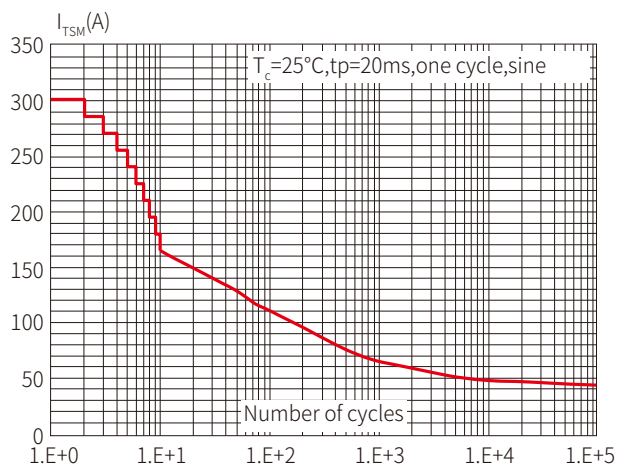


FIG.4 On-state characteristics

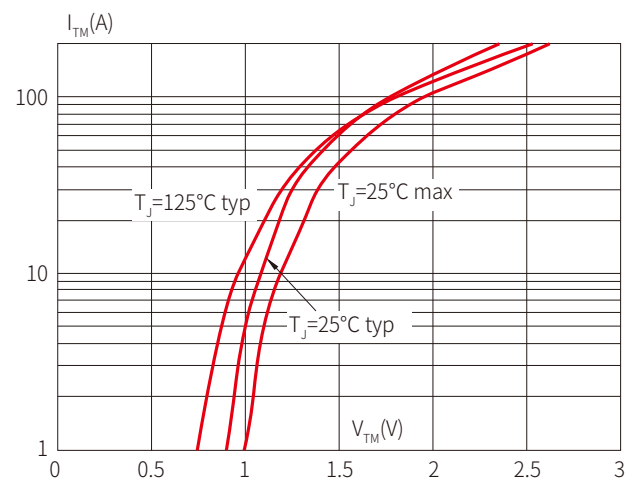


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

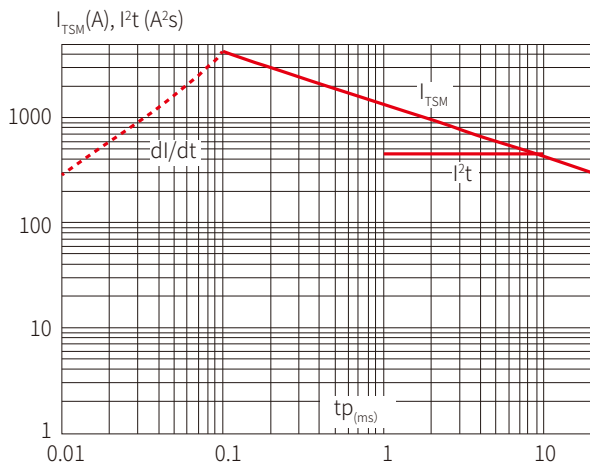
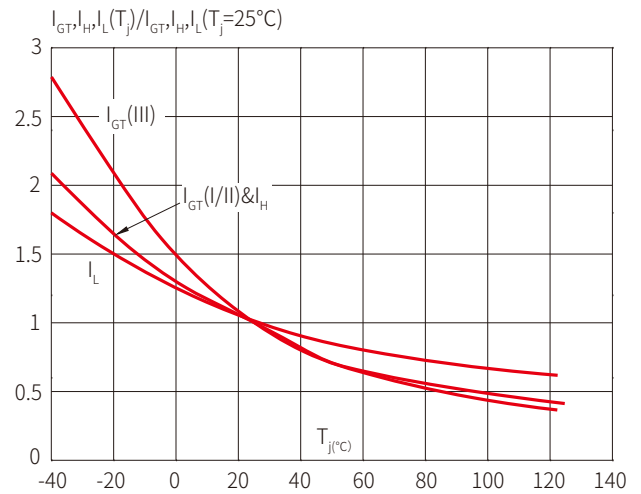
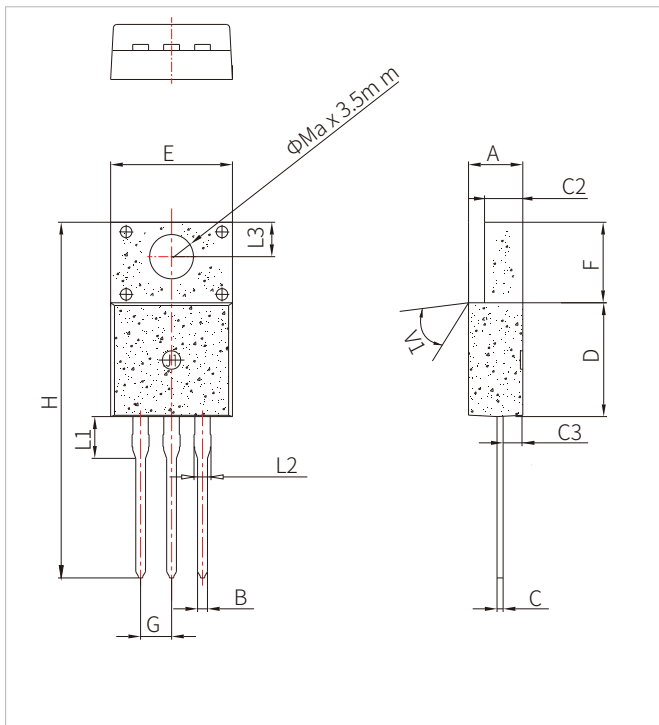


FIG.6 Relative variations of gate trigger current versus junction temperature



TO-220F PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.90	0.173		0.193
B	0.74	0.80	0.83	0.029		0.033
C	0.45		0.75	0.018		0.030
C2	2.40		2.70	0.094		0.106
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.70		10.4	0.382		0.409
F	6.40		7.00	0.252		0.276
G		2.54			0.1	
H	28.0		30.0	1.102		1.181
L1		3.55			0.140	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Tube	QTY/Box	QTY/Carton
STF30A80BW	TO-220F	 STF30A80BW XXXX	50PCS	1000PCS	5000PCS

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By QR Code

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