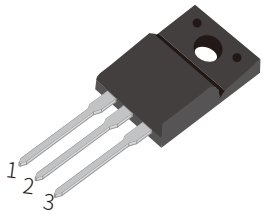
FEATURES

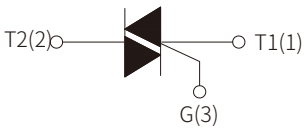
- High current 30 A RMS current Triac
- Low thermal resistance
- High commutation or very high commutation capability



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°C)	V_{DRM}	800	V
Repetitive peak reverse voltage (Tj=25°C)	V_{RRM}	800	V
RMS on-state current (T_C⩽71°C)	$I_{T(RMS)}$	30	A
Non repetitive surge peak on-state current (full cycle , tp=20ms , Tj=25°C)	I_{TSM}	300	
I^2t value for fusing (tp=10ms,Tj=25°C)	I^2t	450	A^2S
Critical rate of rise of on-state current (I_G=2*$I_{GT,}$f=100Hz , Tj=125°C)	dI/dt	100	A/μs
Peak gate current (tp=20μs , Tj=125°C)	I_{GM}	4	A
Average gate power dissipation (Tj=125°C)	$P_{G(AV)}$	0.5	W
Storage junction temperature range	T_{STG}	-40~+150	°C
Operating junction temperature range	T_j	-40~+125	

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

Symbol	Test Condition	Quadrant	Value	Unit
I_{GT}	V_D=12V,R_L=33Ω	I - II -III	⩽50	mA
V_{GT}			⩽1.3	V
V_{GD}	V_D=V_{DRM},R_L=3.3KΩ,T_j=125°C		⩾0.15	V
I_H	I_T=500mA		⩽75	mA
I_L	I_G=1.2I_{GT}	I - III	⩽80	
		II	⩽100	
dV/dt	V_D=540V,Gate Open T_j=125°C		⩾2000	V/μs
V_{TM}	I_{TM}=42A,tp=380μs	T_j=25°C	⩽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	⩽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

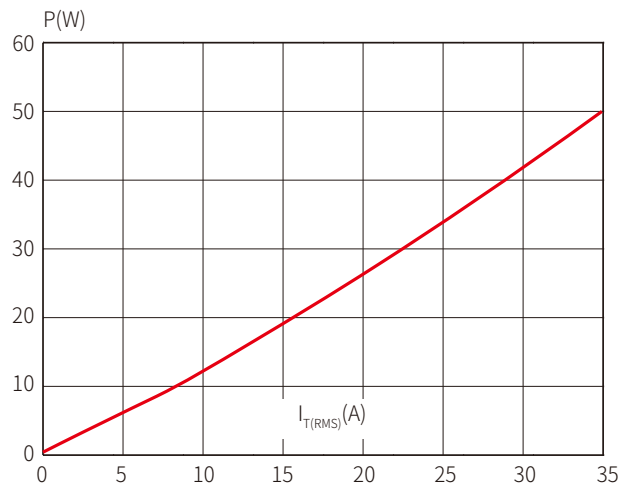


FIG.2: RMS on-state current versus case temperature

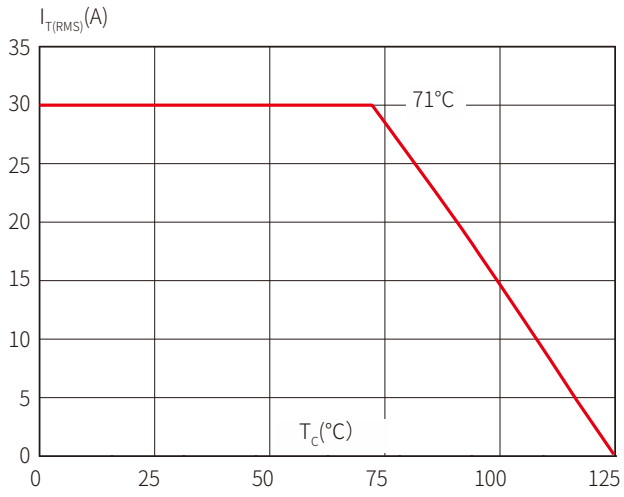


FIG.3: Surge peak on-state current versusnumber of cycles

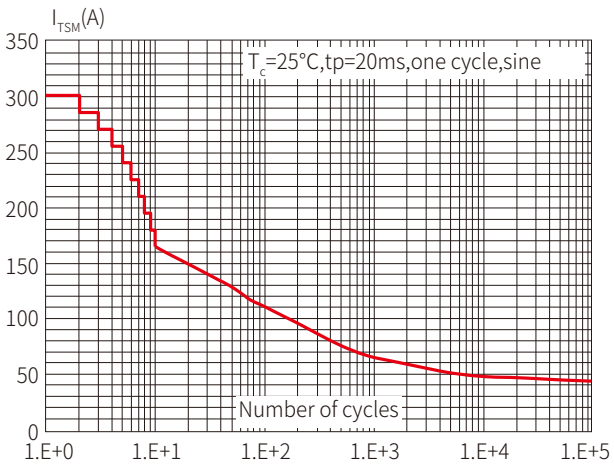


FIG.4 On-state characteristics

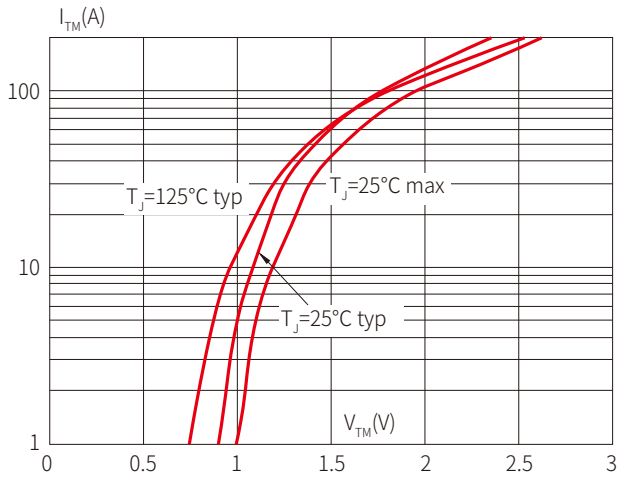


FIG.5: Non-repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<20ms and corresponding value of I²t (dI/dt < 100A/μs)

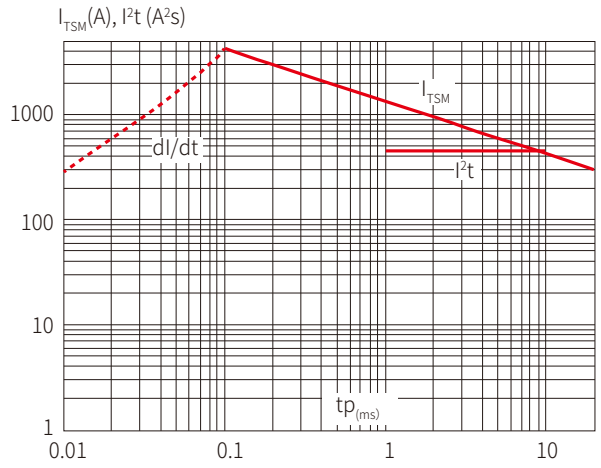
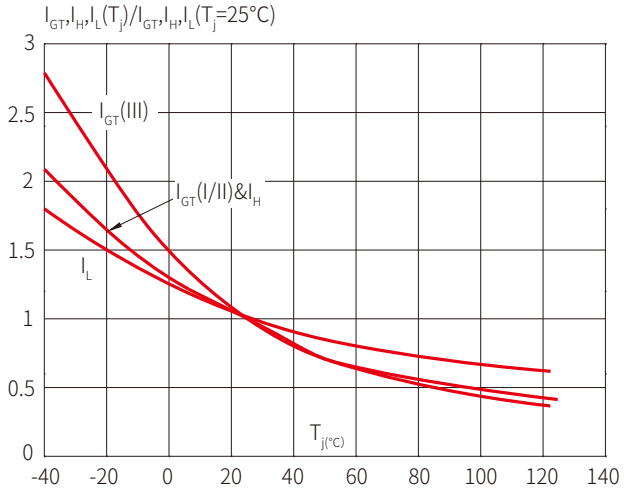
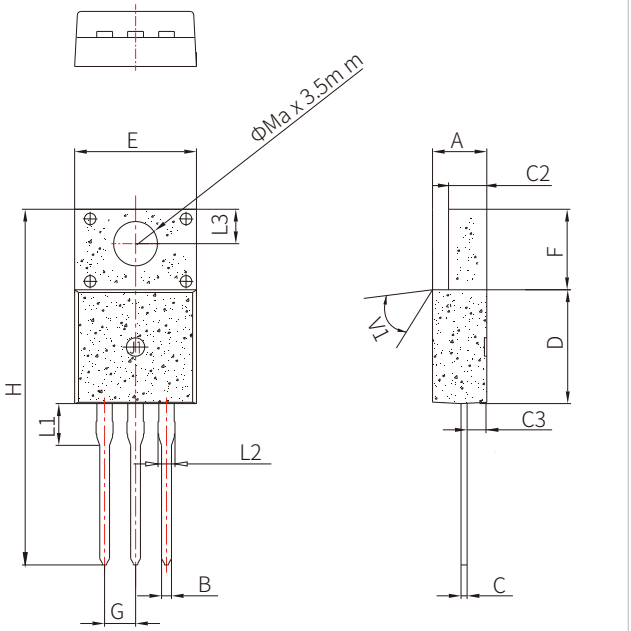


FIG.6 Relative variations of gate trigger current versus junction temperature



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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