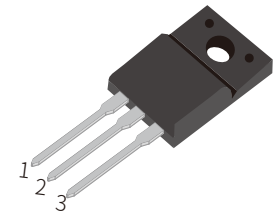


FEATURES

- | High current 10A RMS current Triac
- | Low thermal resistance
- | High commutation or very high commutation capability
- | UL-94, V0 flammability package resin compliance



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

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 ($T_c=91^\circ\text{C}$)	$I_{\text{T(RMS)}}$	10	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	100	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	50	A^2S
Critical rate of rise of on-state current ($I_G=2 \times I_{\text{GT}}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	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~+150	$^\circ\text{C}$
Operating junction temperature range	T_j	-40~+125	

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

Symbol	Test Condition	Quadrant	Value			Unit
			Min.	Typ.	Max.	
I _{GT}	V _D =12V, R _L =33Ω	I - II - III			35	mA
V _{GT}					1	V
V _{GD}	V _D =V _{DRM} , R _L =3.3KΩ, T _j =125°C	I - II - III	0.2			V
I _H	I _T =500mA				30	mA
I _L	I _G =1.2I _{GT}	I - III			50	
		II			60	
dV _D /dt	V _D =400V Gate Open T _j =125°C		800			V/μs
(di/dt) _c	(dV/dt) _c =20V/μs T _j =125°C		10			A/ms
t _{on}	I _G =40mA I _A =200mA I _R =20mA T _j =25°C			3		μs
t _{off}					30	μs

STATIC CHARACTERISTICS

Symbol	Parameter	Value	Unit
V _{TM}	I _{TM} =16A, t _p =380μs	≤1.5	V
I _{DRM}	V _D =V _{DRM} , V _R =V _{RRM}		
I _{RRM}			≤0.3

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction to case(AC)	2.5	°C/W

PARAMETER CHARACTERISTIC CURVE

FIG.1 Maximum Power Dissipation Versus RMS On-state Current

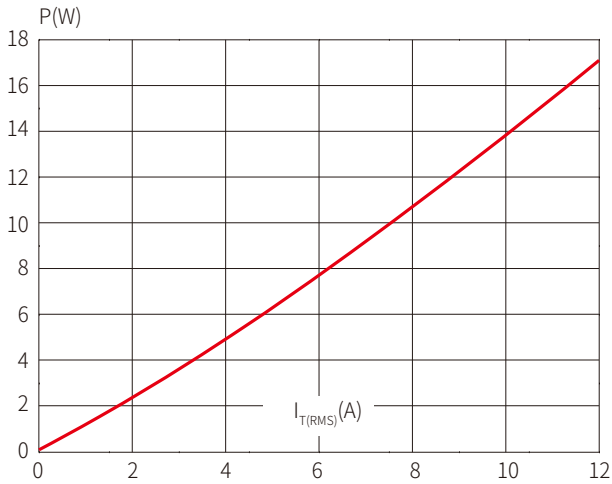


FIG.2: RMS on-state Current Versus Case Temperature

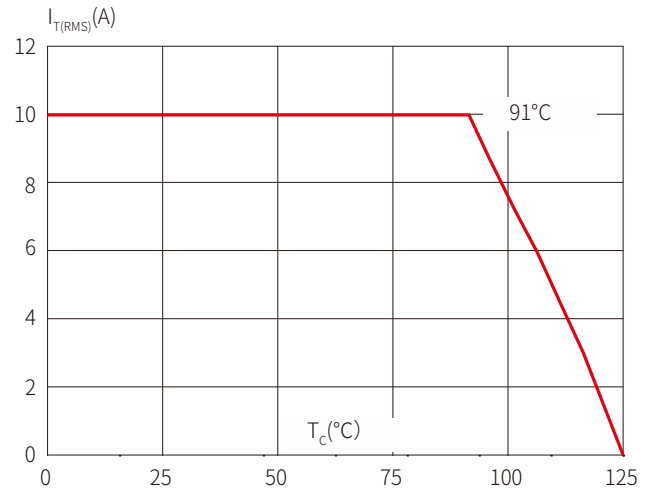


FIG.3: Surge Peak On-state Current Versus Number Of Cycles

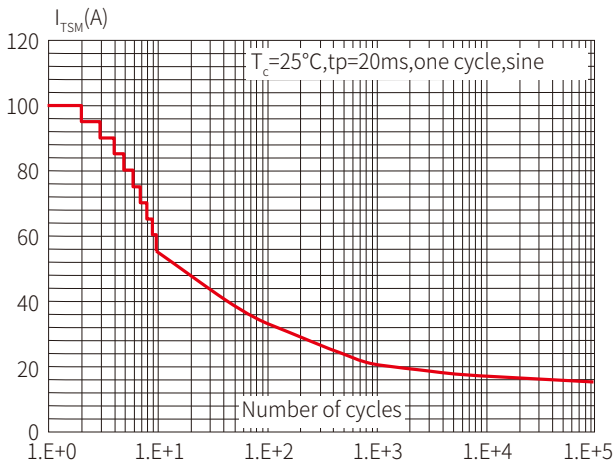


FIG.4 On-state characteristics

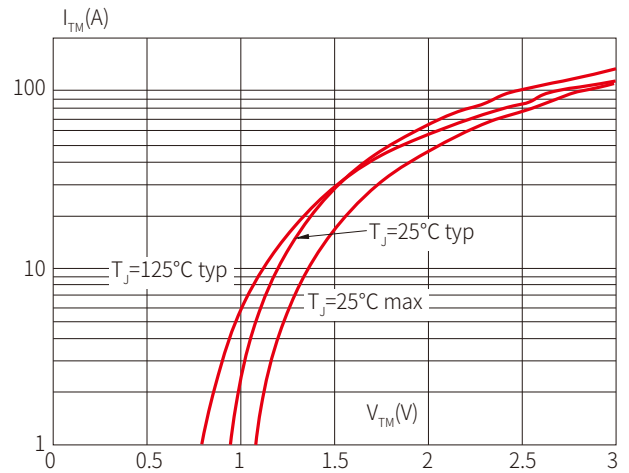


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

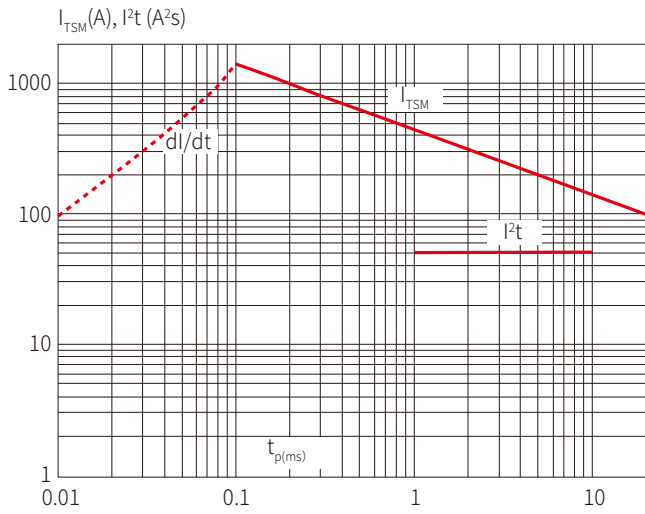
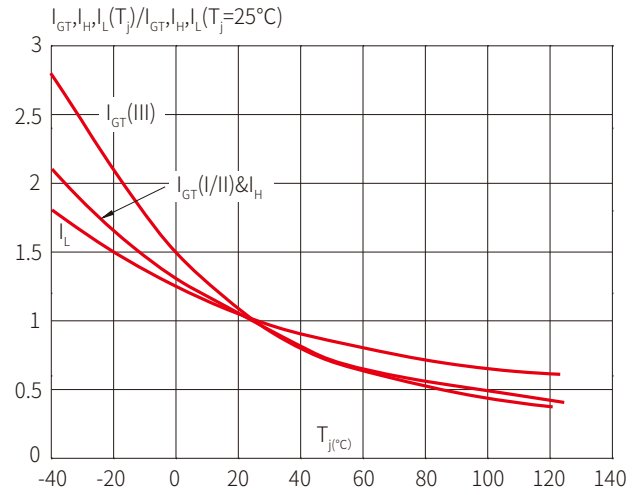
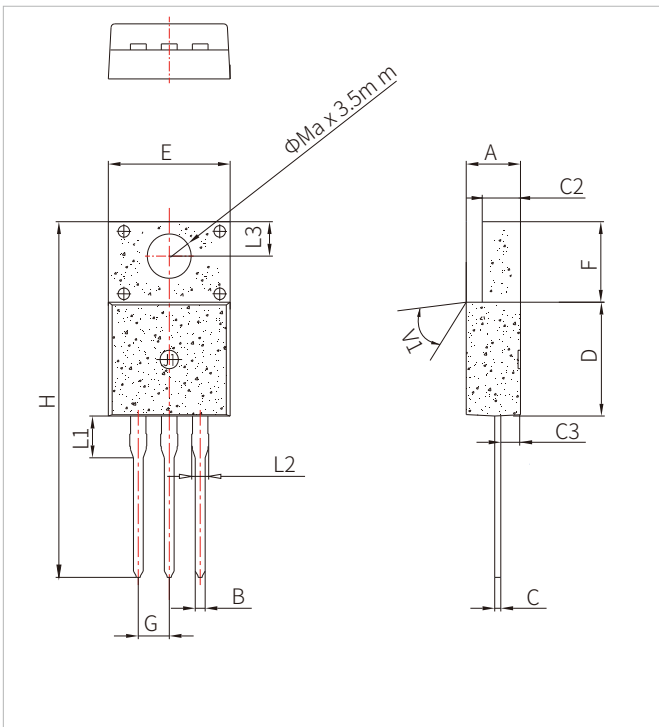


FIG.6 Relative variations of gate trigger current, holding current and latching current versus junction temperature




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
STF10A60CW	TO-220F	 STF10A60CW XXXX	50PCS	1000PCS	5000PCS

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