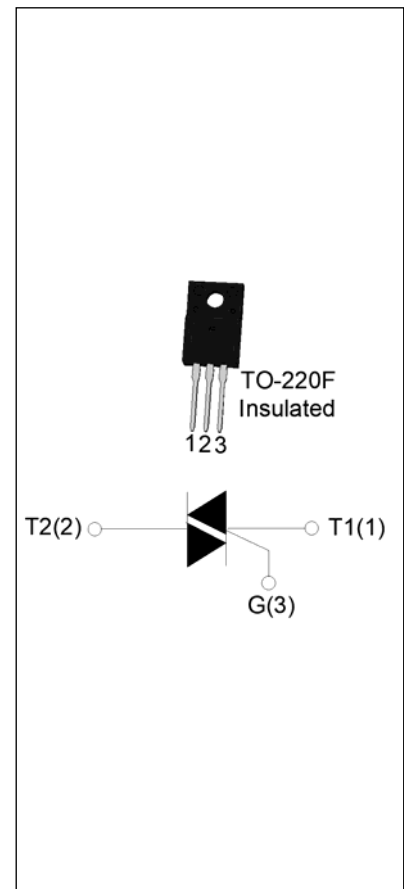


T0810H-8F 8A TRIAC

Rev.A.1.1

DESCRIPTION:

The T0810H-8F triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Compared to traditional triacs, T0810H-8F provides a very high switching capability up to junction temperatures of 150°C. It can be driven directly through the MCU I/O port. By using an external plastic package, T0810H-8F provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	800	V
$I_{GT\ I/II/III}$	10/10/10	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	°C
Operating junction temperature range	T_j	-40-150	°C
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 ($T_c \leq 113^\circ\text{C}$)	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	80	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		88	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	32	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=150^\circ\text{C}$)	di/dt	50	$\text{A}/\mu\text{s}$

Peak gate current ($t_p=20\mu s$, $T_j=150^\circ C$)	I_{GM}	4	A
Average gate power dissipation ($T_j=150^\circ C$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25^\circ C$; non-repetitive, off-state; FIG.7)	V_{pp}	2.5	kV

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ C$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V$ $R_L=33\Omega$	I - II -III	MAX.	10	mA
V_{GT}		I - II -III	MAX.	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=150^\circ C$ $R_L=3.3k\Omega$	I - II -III	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III	MAX.	25	mA
		II		40	
I_H	$I_T=100mA$		MAX.	25	mA
dV/dt	$V_D=540V$ Gate Open $T_j=150^\circ C$		MIN.	150	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=20V/\mu s$, $T_j=150^\circ C$		MIN.	1.8	A/ms
t_{on}	$I_G=20mA$ $I_A=200mA$ $I_R=20mA$ $T_j=25^\circ C$		TYP.	2.5	μs
t_{off}				25	

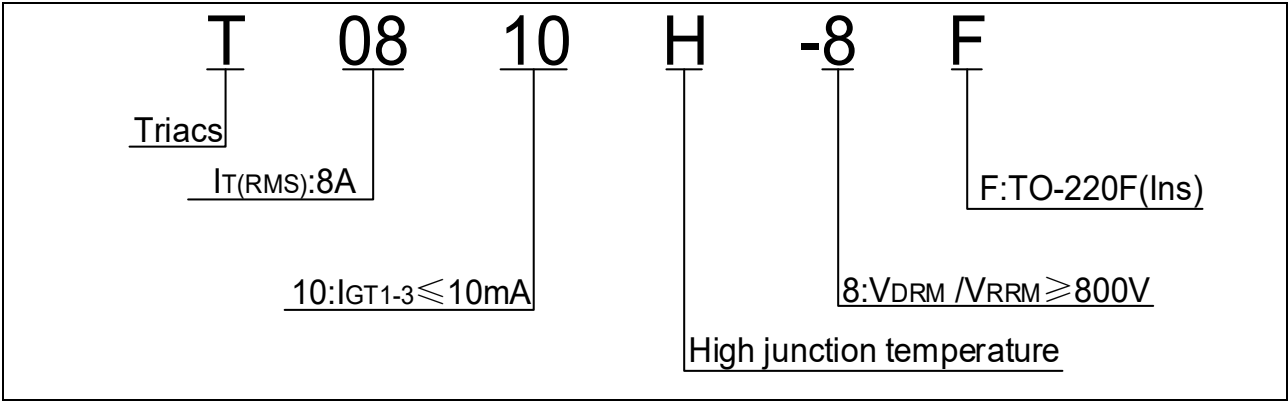
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=11A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.4	V
V_{TO}	Threshold voltage	$T_j=150^\circ C$	0.79	V
R_D	Dynamic resistance	$T_j=150^\circ C$	51	m Ω
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=150^\circ C$	1.5	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	3.5	$^\circ C/W$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^\circ C/W$

ORDERING INFORMATION



MARKING

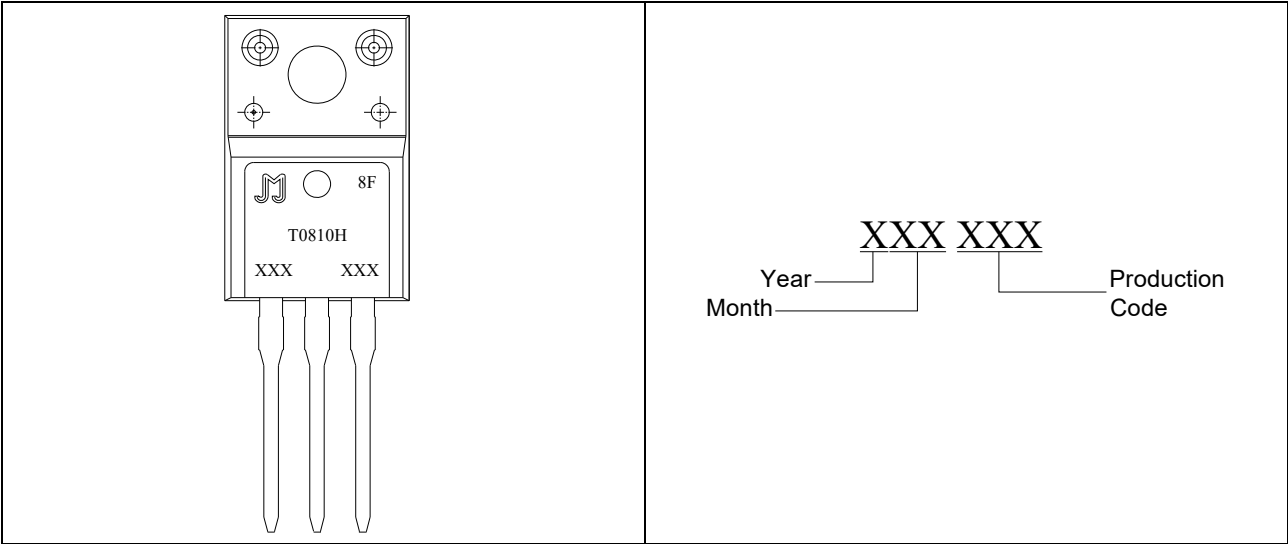


FIG.1: Maximum power dissipation versus RMS on-state current

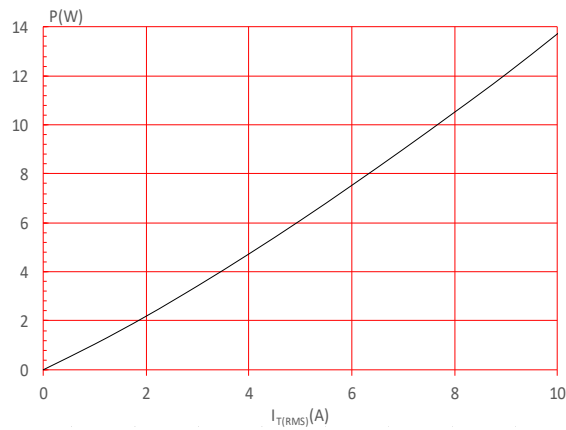


FIG.2: RMS on-state current versus case temperature

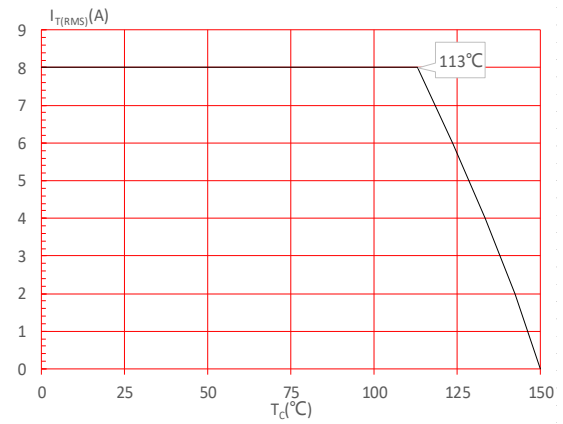


FIG.3: Surge peak on-state current versus number of cycles

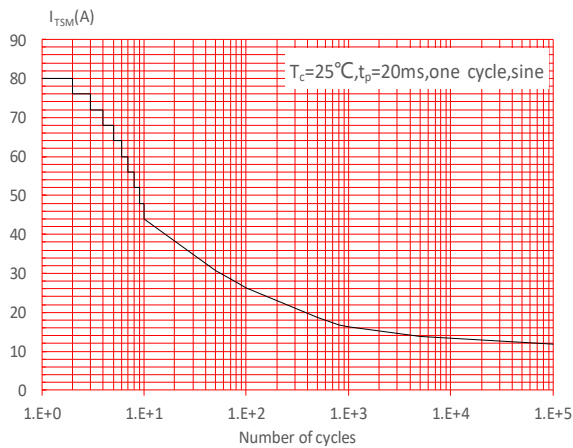


FIG.4: On-state characteristics

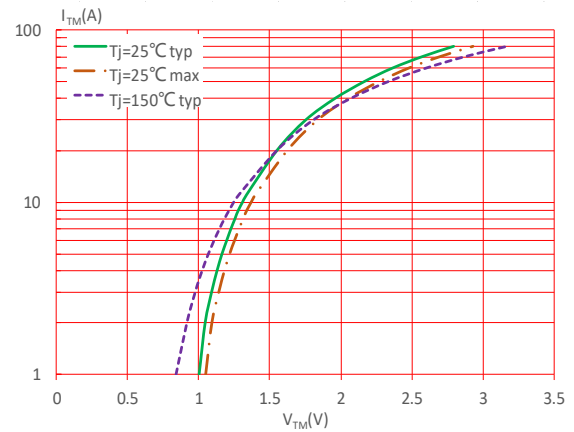


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 50A/\mu s$)

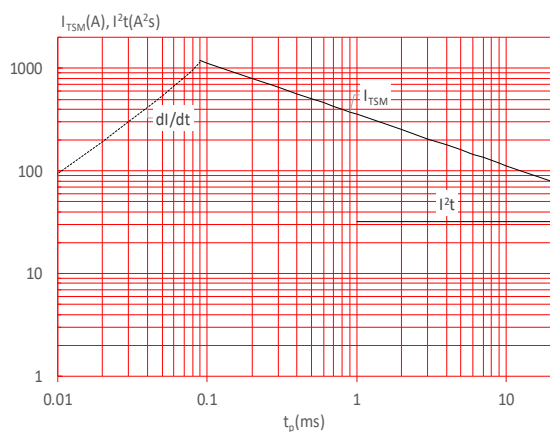


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

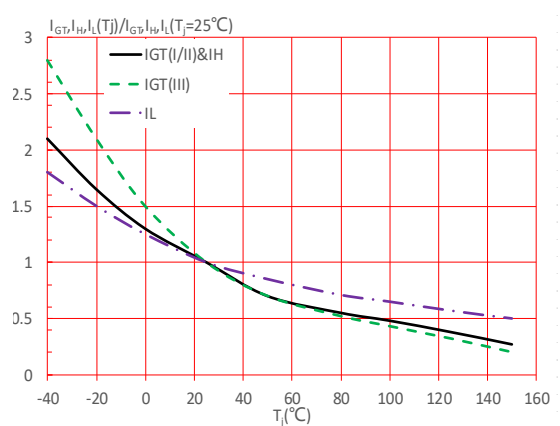
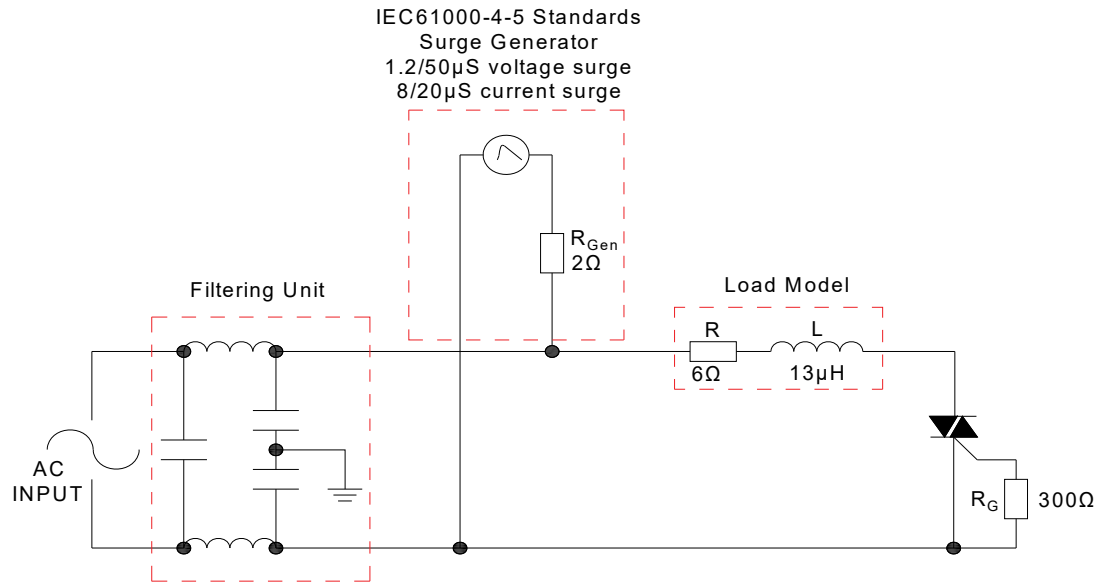


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics.

ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III			
T0810H-8F	800	10	TO-220F(Ins)	50	Tube

Document Revision History

Date	Revision	Changes
Apr.11, 2023	A.1.0	Last updated
Otc.11, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pronged plug (Fig. 10). The drawing includes a top view and a side view. The top view shows a rectangular body with three prongs. Dimensions include: E (total width), I (prong width), $L3$ (body thickness), $L1$ (prong length), $L2$ (prong width), L (prong length), K (prong length), G (prong width), M (prong width), B (prong width), H (total height), and J (prong length). A note indicates a hole diameter of $\phi 3.05-3.25mm$. The side view shows dimensions A (total height), $C2$ (prong height), F (prong height), D (prong height), $C3$ (prong height), and C (prong width). A note indicates a hole diameter of $\phi 3.05-3.25mm$.

Technical drawing of a 3D-printed part, showing three views: front, top, and side. The drawing includes dimensions and a label for the printing area.

Front View (Left):

- Overall width: 520 ± 0.5
- Overall height: 5.5
- Central slot width: 80
- Slot depth: 3
- Printing area label: "printing area"
- Slot radius: $\phi 4.5$
- Bottom hole diameter: $\phi 3.0 \pm 0.05$

Top View (Middle):

- Overall width: 530 ± 0.5
- Overall height: 5.5
- Central slot width: 80
- Slot depth: 3
- Printing area label: "printing area"
- Slot radius: $\phi 4.5$
- Bottom hole diameter: $\phi 3.0 \pm 0.05$

Side View (Right):

- Overall width: $7.0_{-0.2}^0$
- Overall height: 33
- Central slot width: 2.4
- Slot depth: 3.8
- Slot radius: $\phi 0.6$
- Bottom hole diameter: $\phi 3.0 \pm 0.05$

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