

T0850H-6C 8A TRIAC

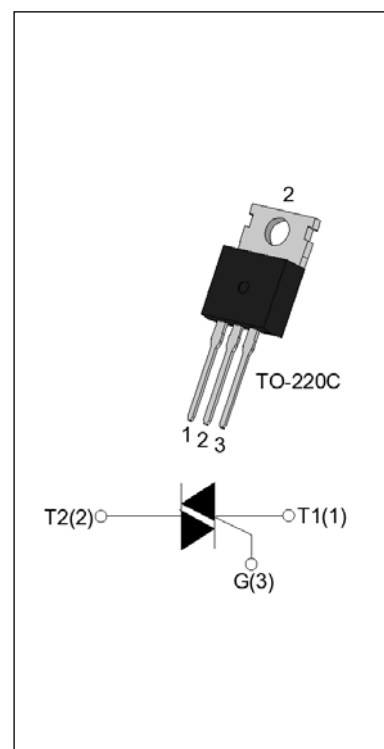
Rev.A.1.1

DESCRIPTION:

The T0850H-6C 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, T0850H-6C provides a very high switching capability up to junction temperatures of 150°C. From T2 terminals to external heatsink. Package TO-220C is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600	V
$I_{GT\ I/II/III}$	50/50/50	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}	600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600	V
RMS on-state current ($T_c \leq 134^\circ\text{C}$)	$I_{T(RMS)}$	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	100	$\text{A}/\mu\text{s}$
Peak gate current ($t_p=20\mu\text{s}$, $T_j=150^\circ\text{C}$)	I_{GM}	4	A
Average gate power dissipation ($T_j=150^\circ\text{C}$)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

Peak pulse voltage ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	3.5	kV
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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	MAX.	50	mA
V_{GT}		I - II -III	MAX.	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=150^{\circ}\text{C}$ $R_L=3.3\text{k}\Omega$	I - II -III	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III	MAX.	60	mA
		II		90	
I_H	$I_T=100\text{mA}$		MAX.	55	mA
dV/dt	$V_D=400\text{V}$ Gate Open $T_j=150^{\circ}\text{C}$		MIN.	3000	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=20\text{V}/\mu\text{s}$, $T_j=150^{\circ}\text{C}$		MIN.	8	A/ms
t_{on}	$I_G=80\text{mA}$ $I_A=400\text{mA}$ $I_R=40\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	5	μs
t_{off}				50	

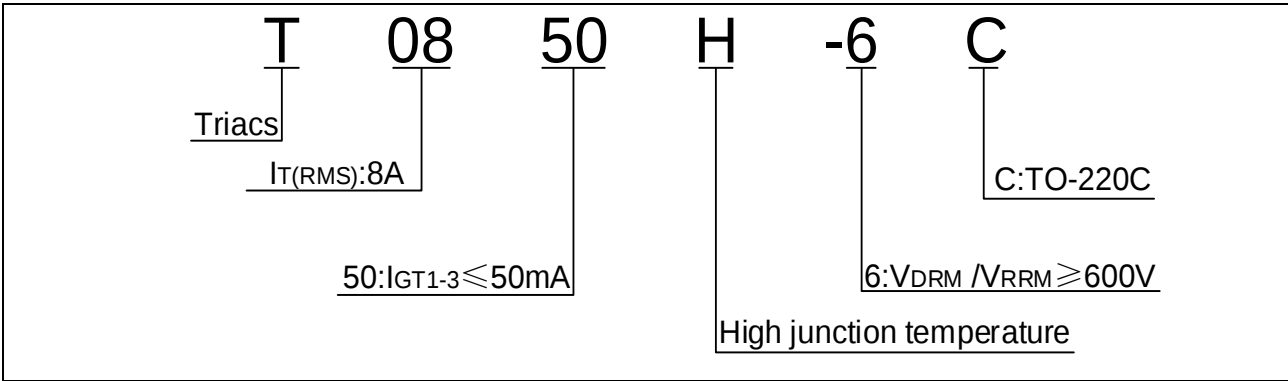
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=11\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.4	V
V_{TO}	Threshold voltage	$T_j=150^{\circ}\text{C}$	0.79	V
R_D	Dynamic resistance	$T_j=150^{\circ}\text{C}$	51	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=150^{\circ}\text{C}$	1	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.5	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

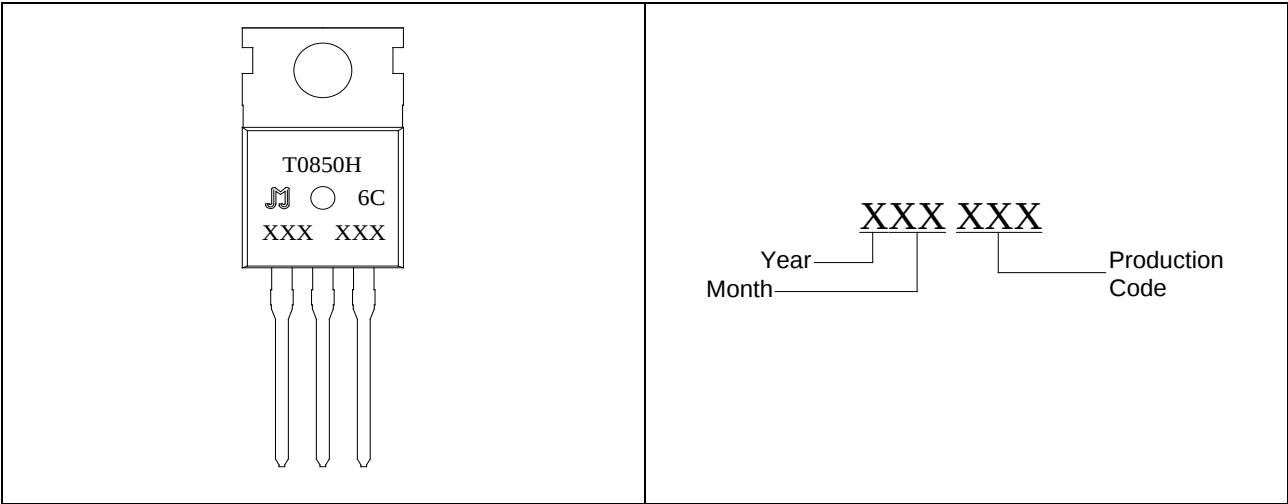


FIG.1: Maximum power dissipation versus RMS on-state current

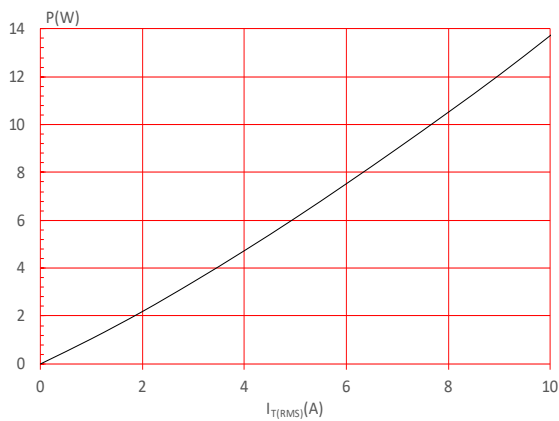


FIG.2: RMS on-state current versus case temperature

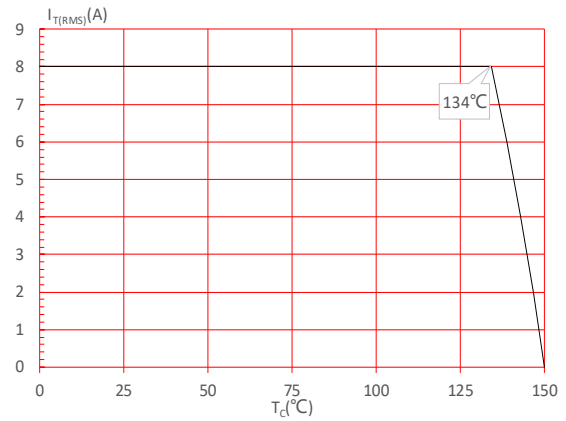


FIG.3: Surge peak on-state current versus number of cycles

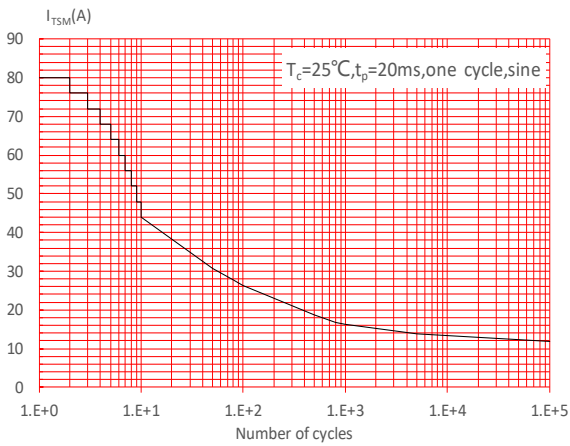


FIG.4: On-state characteristics

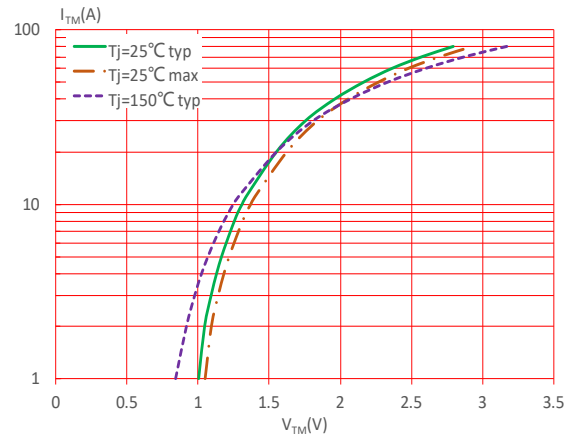


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 100A/\mu s$)

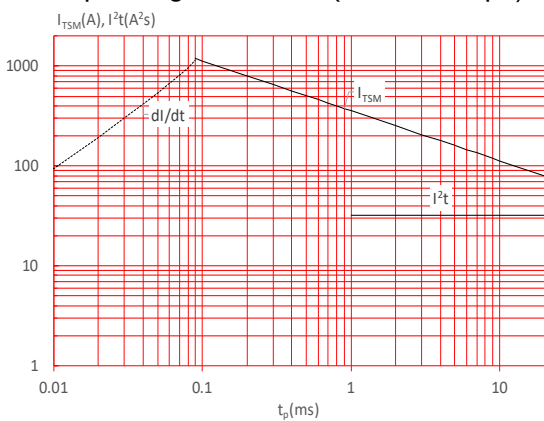


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

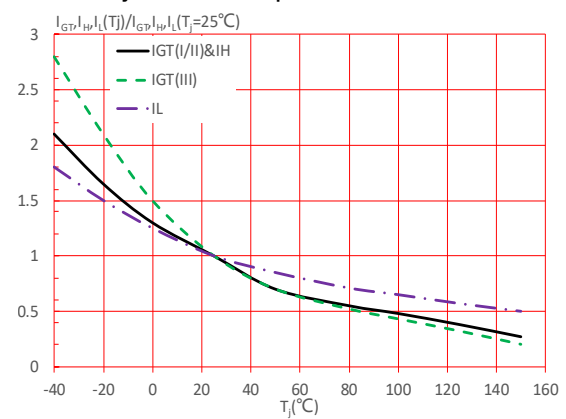
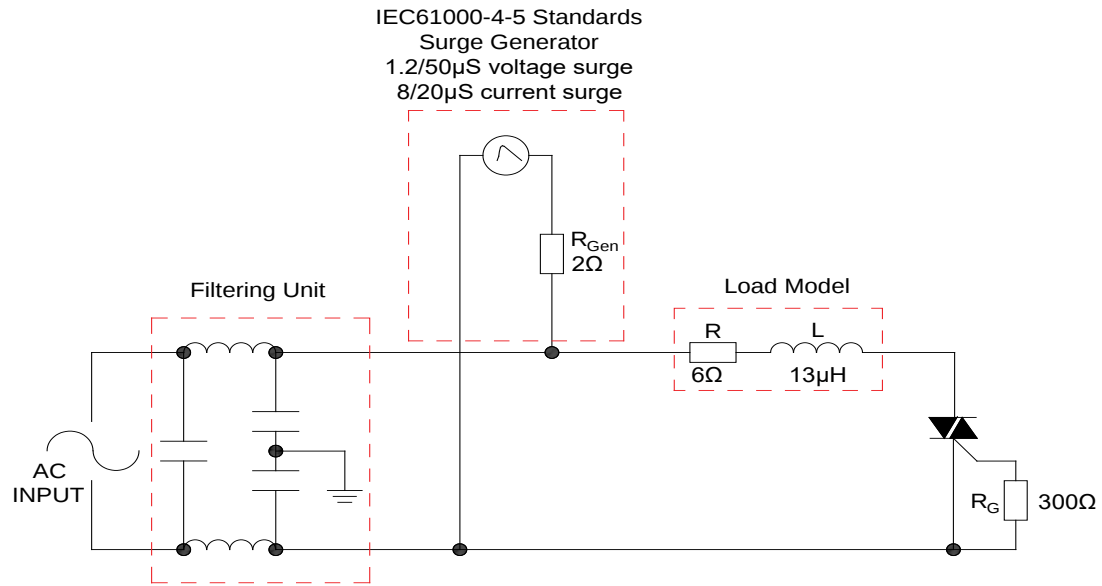


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



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			
T0850H-6C	600	50	TO-220C	50	Tube

Document Revision History

Date	Revision	Changes
Apr.11, 2023	A.1.0	Last updated
Oct.14, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin plug, showing three views: a top view, a front view, and a side view. The top view shows a rectangular plug with a central circular hole and a smaller circular hole below it. The front view shows the plug with three pins (labeled L1, L2, L3) and dimensions (E, H, K, G, M, B, A, C, C2, C3, D, E1, H1). The side view shows the plug with dimensions (A, C2, E, D, C3, C). The drawing includes a note: $\varnothing 3.45-3.65\text{mm}$ pointing to the central hole.

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.25		1.35	0.049		0.053
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.30	0.390		0.406
E1	0.80		1.20	0.031		0.047
F	6.30		6.90	0.248		0.272
G	2.40		2.70	0.094		0.106
H	28.00		29.80	1.102		1.173
H1	2.15		2.55	0.085		0.100
I	4.70		5.10	0.185		0.201
K	9.90		10.30	0.390		0.406
L1	2.70		3.30	0.106		0.130
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
M	4.80		5.20	0.189		0.205

Technical drawing of a 3D printed part, showing three views: top, front, and side views. The dimensions are as follows:

- Top View:**
 - Overall width: 520 ± 0.5
 - Overall height: 530 ± 0.5
 - Printing area: 80×5.5
 - Distance from left edge to printing area: $520 \pm 0.5 - 80 = 440 \pm 0.5$
 - Distance from top edge to printing area: $530 \pm 0.5 - 5.5 = 524.5 \pm 0.5$
 - Distance from right edge to printing area: 5
 - Distance from bottom edge to printing area: 5.5
 - Distance from left edge to bottom hole: $520 \pm 0.5 - 80 = 440 \pm 0.5$
 - Distance from top edge to bottom hole: $530 \pm 0.5 - 5.5 = 524.5 \pm 0.5$
 - Distance from right edge to bottom hole: 5
 - Distance from bottom edge to bottom hole: 5.5
 - Distance from left edge to top hole: $520 \pm 0.5 - 80 = 440 \pm 0.5$
 - Distance from top edge to top hole: $530 \pm 0.5 - 5.5 = 524.5 \pm 0.5$
 - Distance from right edge to top hole: 5
 - Distance from bottom edge to top hole: 5.5
- Front View:**
 - Overall width: 520 ± 0.5
 - Overall height: 530 ± 0.5
 - Printing area: 80×5.5
 - Distance from left edge to printing area: $520 \pm 0.5 - 80 = 440 \pm 0.5$
 - Distance from top edge to printing area: $530 \pm 0.5 - 5.5 = 524.5 \pm 0.5$
 - Distance from right edge to printing area: 5
 - Distance from bottom edge to printing area: 5.5
 - Distance from left edge to bottom hole: $520 \pm 0.5 - 80 = 440 \pm 0.5$
 - Distance from top edge to bottom hole: $530 \pm 0.5 - 5.5 = 524.5 \pm 0.5$
 - Distance from right edge to bottom hole: 5
 - Distance from bottom edge to bottom hole: 5.5
 - Distance from left edge to top hole: $520 \pm 0.5 - 80 = 440 \pm 0.5$
 - Distance from top edge to top hole: $530 \pm 0.5 - 5.5 = 524.5 \pm 0.5$
 - Distance from right edge to top hole: 5
 - Distance from bottom edge to top hole: 5.5
- Side View:**
 - Overall width: 7 ± 0.2
 - Overall height: 33
 - Printing area: 3.8×0.6
 - Distance from left edge to printing area: 3.8
 - Distance from top edge to printing area: 3.8
 - Distance from right edge to printing area: 0.6
 - Distance from bottom edge to printing area: 0.6
 - Distance from left edge to bottom hole: 3.8
 - Distance from top edge to bottom hole: 3.8
 - Distance from right edge to bottom hole: 0.6
 - Distance from bottom edge to bottom hole: 0.6
 - Distance from left edge to top hole: 3.8
 - Distance from top edge to top hole: 3.8
 - Distance from right edge to top hole: 0.6
 - Distance from bottom edge to top hole: 0.6

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000

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