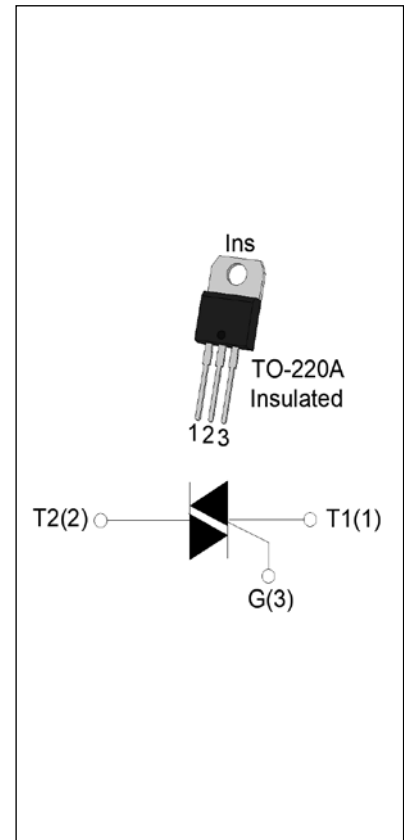


T1635H-6A 16A TRIAC

Rev.A.1.1

DESCRIPTION:

The T1635H-6A 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, T1635H-6A provides a very high switching capability up to junction temperatures of 150°C. By using an internal ceramic pad, T1635H-6A provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	600	V
$I_{GT\ I/II/III}$	35/35/35	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 ($T_c \leq 108^\circ\text{C}$)	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	160	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		176	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	128	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}	4	kV

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.	35	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.	50	mA
		II		70	
I_H	$I_T=500\text{mA}$		MAX.	35	mA
dV/dt	$V_D=400\text{V}$ Gate Open $T_j=150^{\circ}\text{C}$		MIN.	1500	$\text{V}/\mu\text{s}$
$(dI/dt)_c$	$(dV/dt)_c=20\text{V}/\mu\text{s}$, $T_j=150^{\circ}\text{C}$		MIN.	15	A/ms
t_{on}	$I_G=40\text{mA}$ $I_A=200\text{mA}$ $I_R=20\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	8	μs
t_{off}				60	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=22.5\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.4	V
V_{TO}	Threshold voltage	$T_j=150^{\circ}\text{C}$	0.75	V
R_D	Dynamic resistance	$T_j=150^{\circ}\text{C}$	27	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=150^{\circ}\text{C}$	1.5	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	2.0	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

<u>T</u>	<u>16</u>	<u>35</u>	<u>H</u>	<u>-6</u>	<u>A</u>
Triacs	$I_T(RMS):16A$				$A:TO-220A(Ins)$
		$35:I_{GT1-3} \leq 35mA$		$6:V_{DRM} / V_{RRM} \geq 600V$	
			High junction temperature		

MARKING

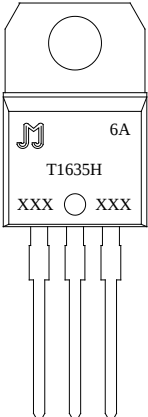
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FIG.1: Maximum power dissipation versus RMS on-state current

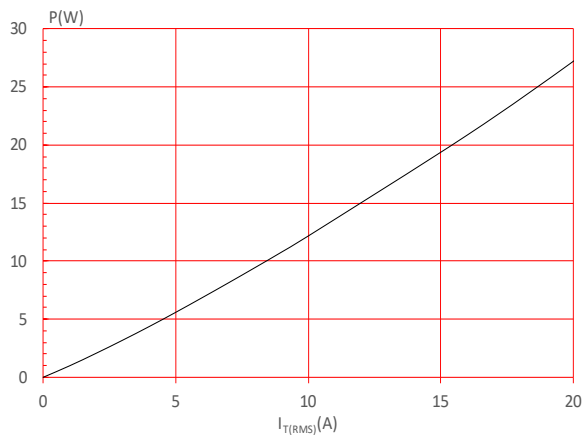


FIG.3: Surge peak on-state current versus number of cycles

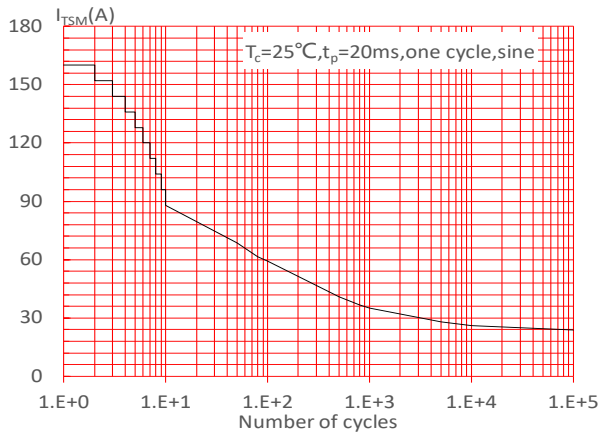


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

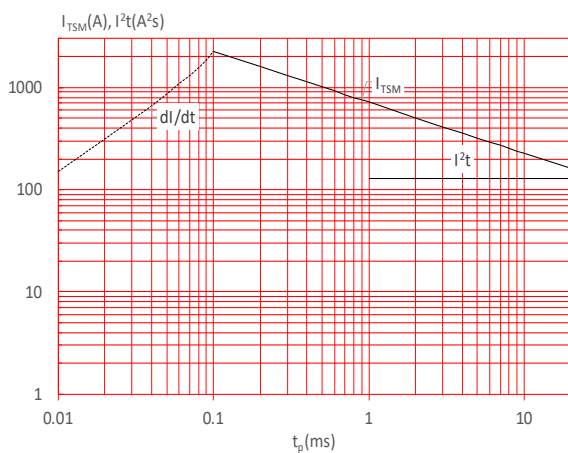


FIG.2: RMS on-state current versus case temperature

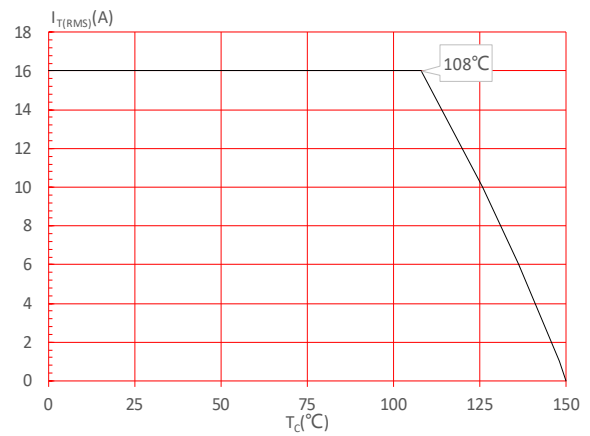


FIG.4: On-state characteristics

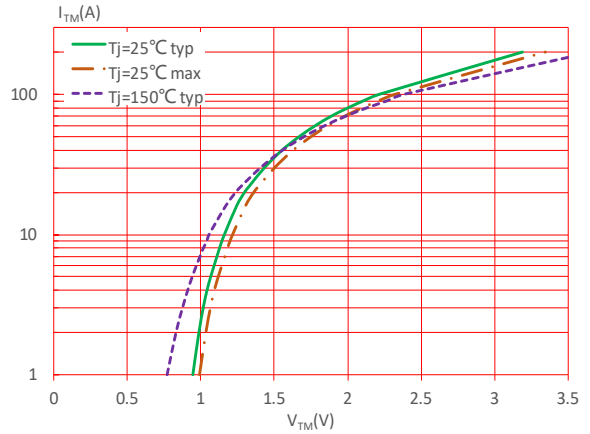


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

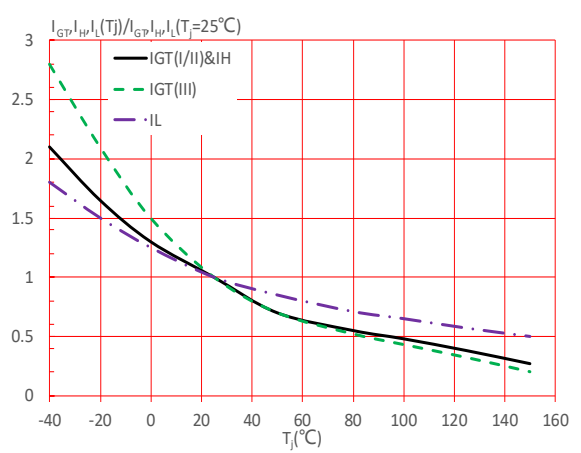
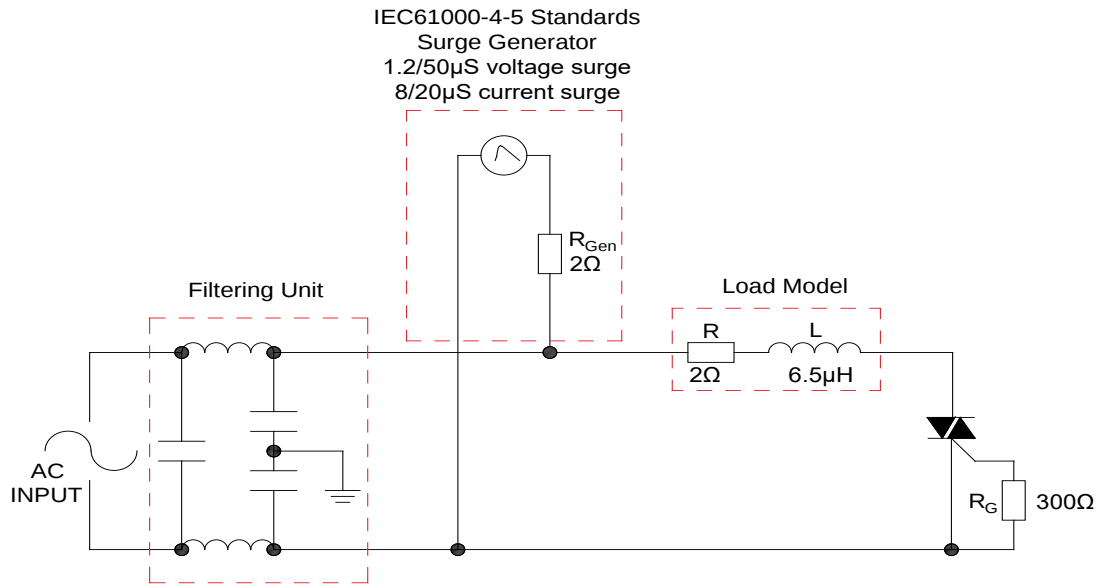


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



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			
T1635H-6A	600	35	TO-220A(Ins)	50	Tube

Document Revision History

Date	Revision	Changes
Apr.10, 2023	A.1.0	Last updated
Oct.11, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin DIN connector. The drawing includes a top view, a side view, and a cross-sectional view. The top view shows a rectangular connector with three pins. The side view shows the connector's profile with dimensions: E (total width), L (pin width), $L3$ (body width), H (total height), $L1$ (pin height), J (pin length), $L2$ (pin diameter), B (pin thickness), G (pin spacing), and K (pin length). The cross-sectional view shows the internal structure with dimensions: A (top flange width), $C2$ (top flange thickness), E (top flange height), D (body height), $C3$ (body width), C (pin diameter), and $V1$ (fillet radius). A dimension of $\Phi 3.7-3.9\text{mm}$ is indicated for the pin diameter. The bottom view shows the connector's base with dimensions $H1$ (base height) and $E1$ (base width).

Technical drawing of a 3D printed part showing three views: front, top, and side. The front view shows a rectangular part with a central 'printing area' and a circular feature on the right. The top view shows a rectangular part with a central 'printing area' and a circular feature on the right. The side view shows a rectangular part with a central 'printing area' and a circular feature on the right. Dimensions are provided for all views.

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