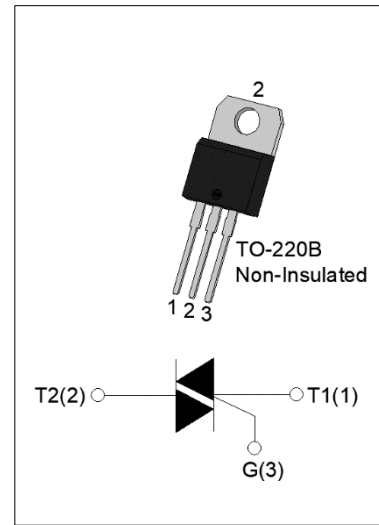


**T3050H-6B-US**
**30A SCR**
**DESCRIPTION:**

The T3050H-6B-US triac is suitable for general purpose AC switching. It can be used as an ON/OFF switch in applications such as heating regulation, induction motor starting circuits, light dimmers, motor speed controllers. Compared to traditional triacs, T3050H-6B-US provides a very high switching capability up to junction temperatures of 150°C. Package TO-220B is RoHS compliant.

**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	30	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 ( $T_c \leq 119^\circ\text{C}$ )	$I_{T(RMS)}$	30	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	270	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		297	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	365	$\text{A}^2\text{s}$
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)	$V_{pp}$	1.2	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.	50	mA
$V_{GT}$		I - II - III	MAX.	1.3	V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=150^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	I - II - III	MIN.	0.15	V
$I_L$	$I_G=1.2I_{GT}$	I - III	MAX.	80	mA
		II		90	
$I_H$	$I_T=500\text{mA}$		MAX.	60	mA
dv/dt	$V_D=400\text{V}$ Gate Open $T_j=150^{\circ}\text{C}$		MIN.	2200	V/ $\mu\text{s}$
(dl/dt) <sub>c</sub>	(dv/dt) <sub>c</sub> =20V/ $\mu\text{s}$ , $T_j=150^{\circ}\text{C}$		MIN.	30	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.	15	$\mu\text{s}$
$t_{off}$				100	

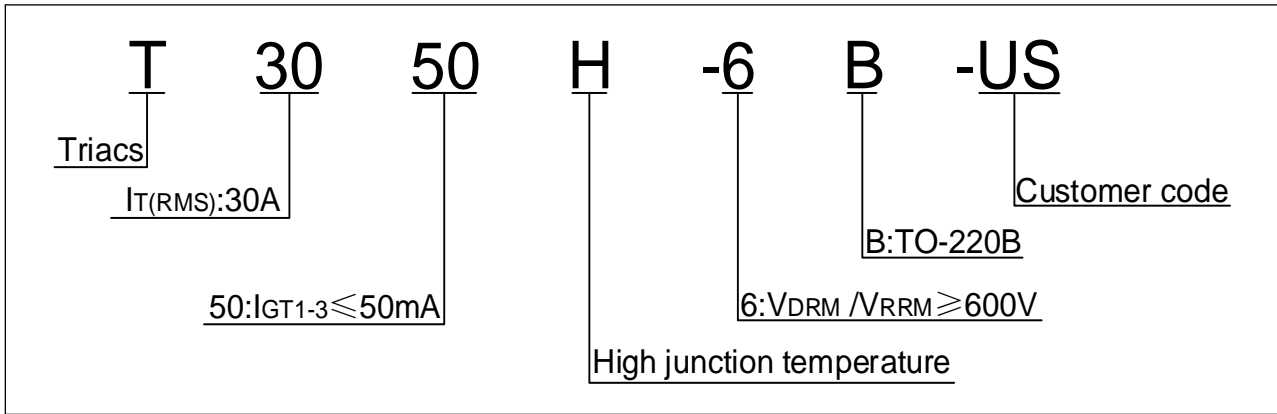
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=42\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
$V_{TO}$	Threshold voltage	$T_j=150^{\circ}\text{C}$	0.7	V
$R_D$	Dynamic resistance	$T_j=150^{\circ}\text{C}$	16	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=150^{\circ}\text{C}$	5	mA

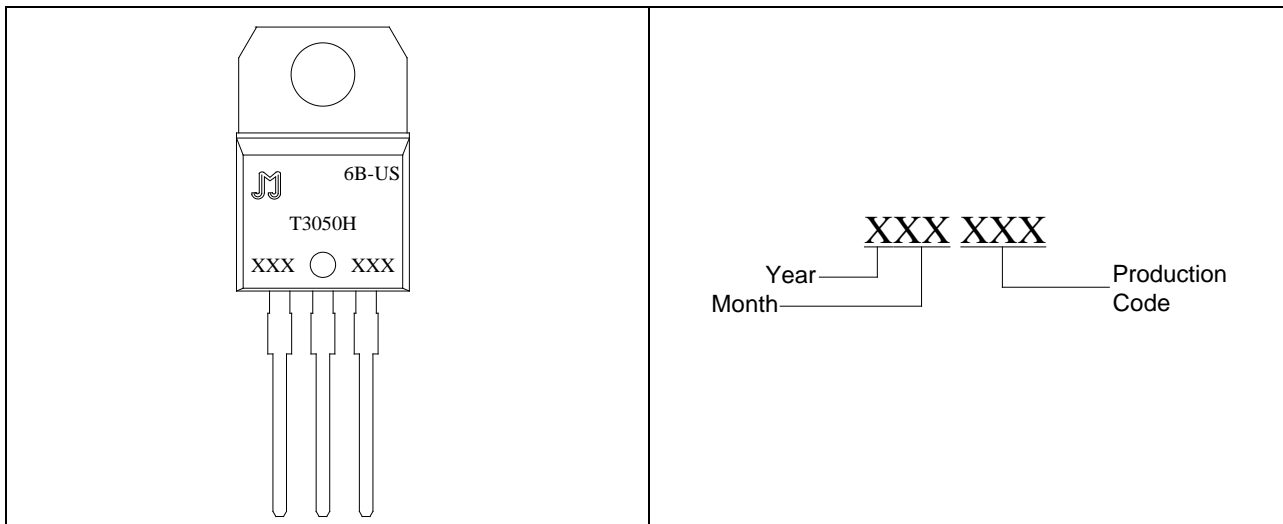
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	0.75	$^{\circ}\text{C/W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C/W}$

### ORDERING INFORMATION



### MARKING



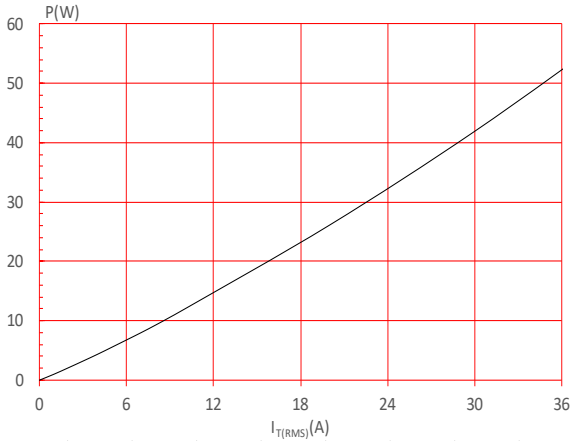
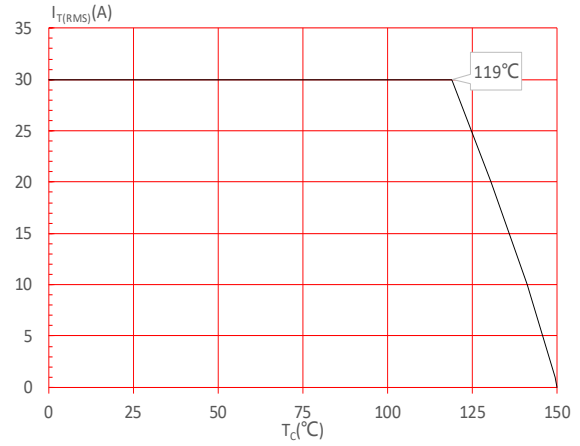
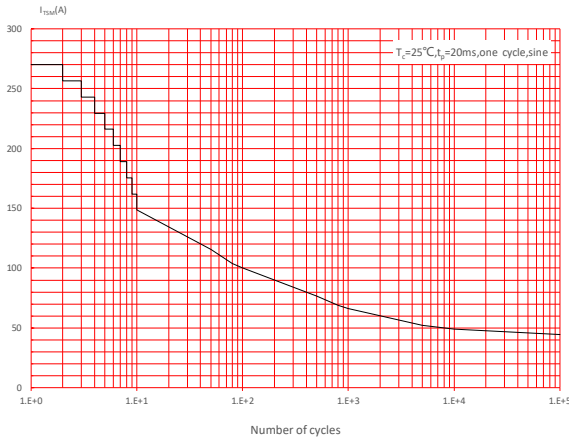
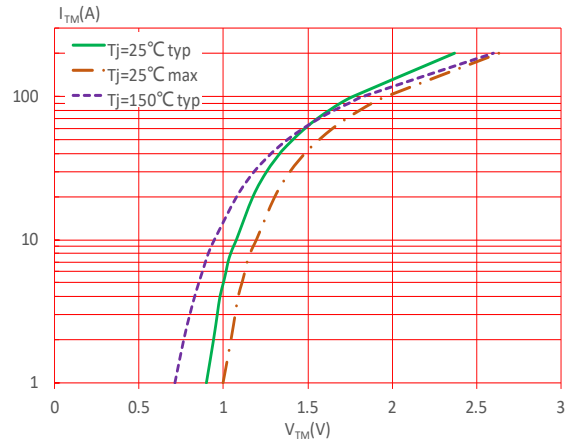
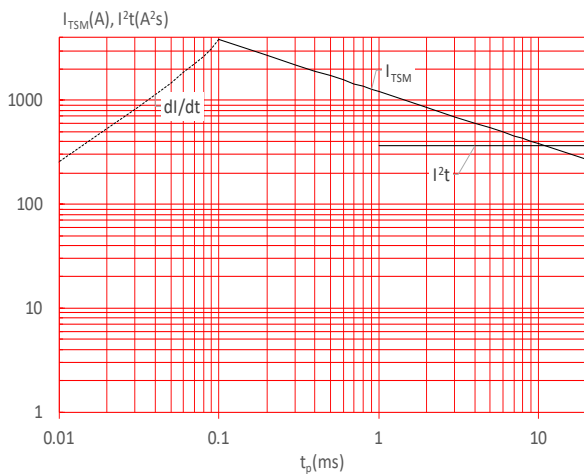
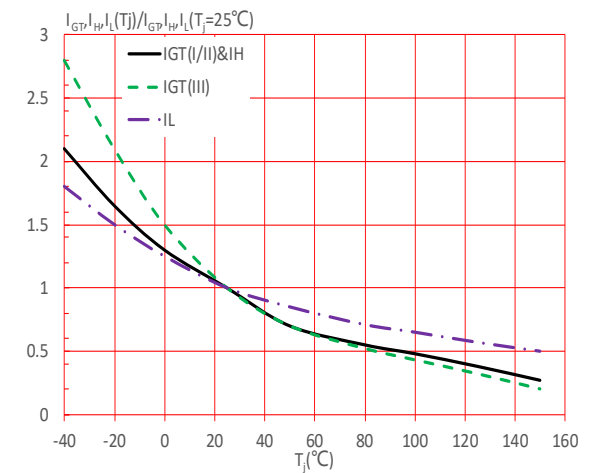
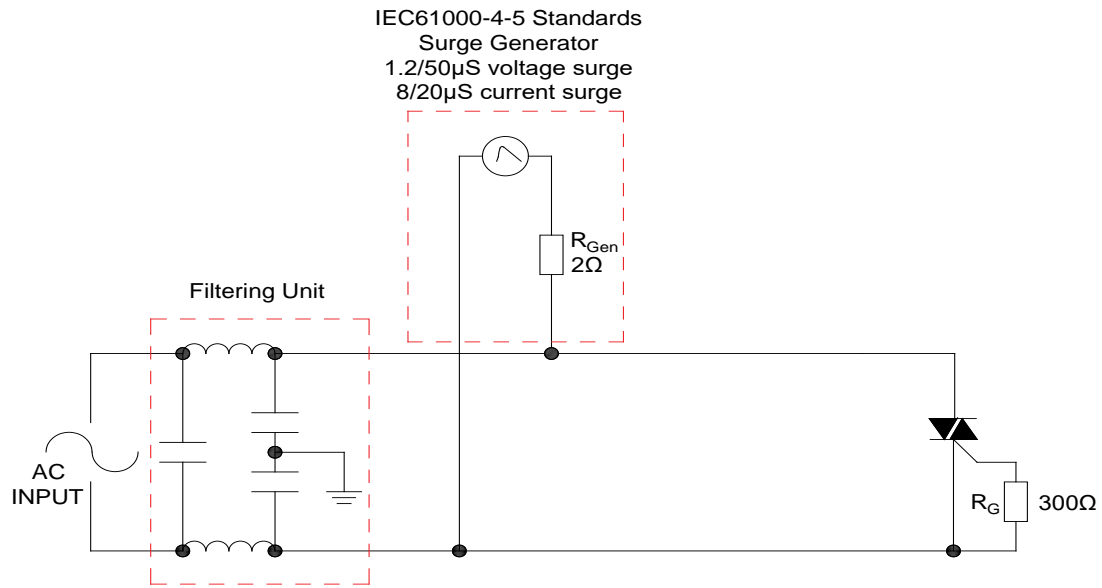
**FIG.1** Maximum power dissipation versus RMS on-state current

**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  $t_p < 20\text{ms}$ , 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


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



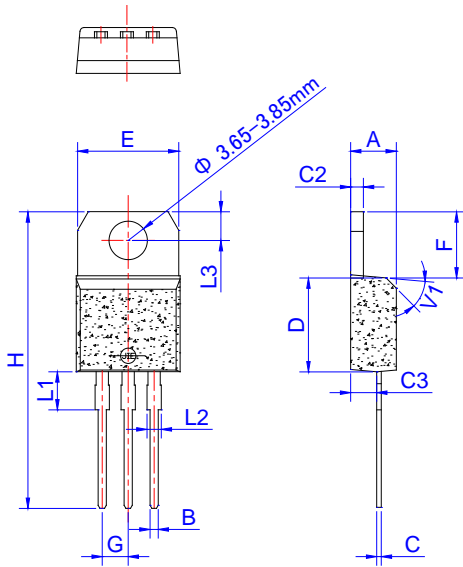
## LEAD FORMING AND SOLDERING

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

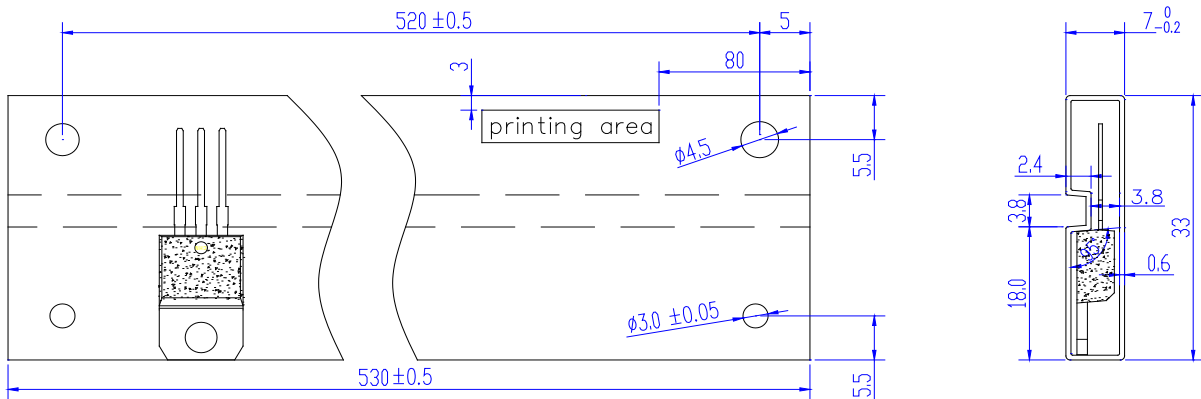


**ORDERING INFORMATION**

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III			
T3050H-6B-US	600	50	TO-220B	50	Tube

**PACKAGE MECHANICAL DATA**


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.88	0.028		0.035
C	0.46		0.55	0.018		0.022
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G	2.40	2.54	2.70	0.094	0.100	0.106
H	28.0		29.8	1.102		1.173
L1	3.50		4.10	0.138		0.161
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

**DELIVERY MODE**


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



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