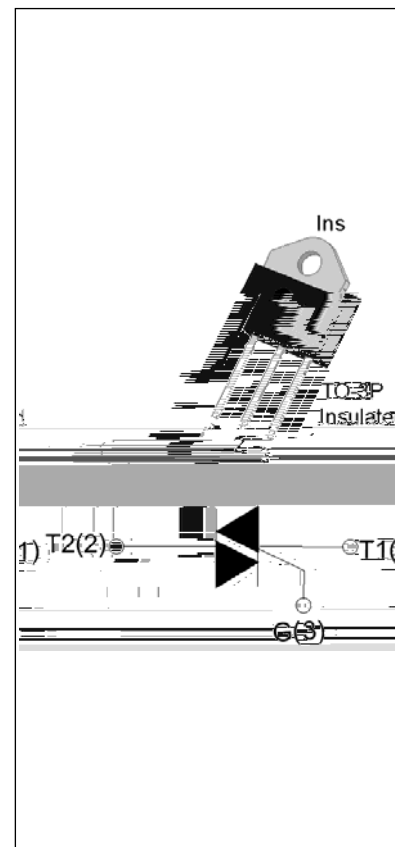


JST30Z-600CW 30A TRIAC

Rev.A.1.1

DESCRIPTION:

The JST30Z-600CW 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. JST30Z-600CW snubberless triac is especially recommended for use on inductive loads. By using an internal ceramic pad, JST30Z-600CW provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-3P is RoHS compliant.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	30	A
V_{DRM}/V_{RRM}	600	V
$I_{GT} / /$	35/35/35	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-125	
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 ($T_C \leq 79^\circ\text{C}$)	$I_{T(RMS)}$	30	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	300	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		330	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	450	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	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 ($T_j=125$)	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25$; non-repetitive, off-state; FIG. 7)	V_{pp}	2.5	kV

ELECTRICAL CHARACTERISTICS ($T_j=25$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V$ $R_L=33\Omega$	- -	MAX.	35	mA
V_{GT}		- -	MAX.	1.3	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125$ $R_L=3.3k\Omega$	- -	MIN.	0.15	V
I_L	$I_G=1.2I_{GT}$	-	MAX.	70	mA
				80	
I_H	$I_T=500mA$		MAX.	50	mA
dV/dt	$V_D=400V$ Gate Open $T_j=125$		MIN.	1500	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=20V/\mu s$ $T_j=125$		MIN.	15	A/ms
t_{on}	$I_G=40mA$ $I_A=200mA$ $I_R=20mA$ $T_j=25$		TYP.	7	μs
t_{off}				50	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=42A$ $t_p=380\mu s$	$T_j=25$	1.5	V
V_{TO}	Threshold voltage	$T_j=125$	0.72	V
R_D	Dynamic resistance	$T_j=125$	25	$m\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25$	5	μA
I_{RRM}		$T_j=125$	1.5	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.1	/W
$R_{th(j-a)}$	junction to ambient (AC)	50	/W

ORDERING INFORMATION

<u>J</u>	<u>ST</u>	<u>30</u>	<u>Z</u>	<u>-600</u>	<u>CW</u>
JieJie Microelectronics Co., Ltd.	Triacs	$I_{T(RMS)}:30A$	$Z:TO-3P(Ins)$	$600:V_{DRM}/V_{RRM} \geq 600V$	$CW:I_{GT1-3} \leq 35mA$

MARKING

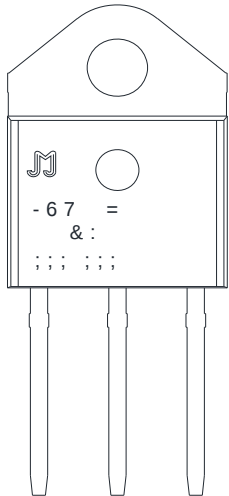
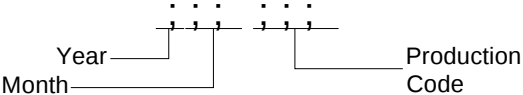
	
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FIG.1: Maximum power dissipation versus RMS on-state current

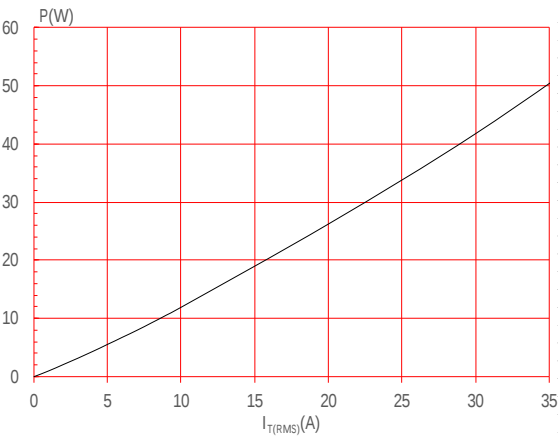
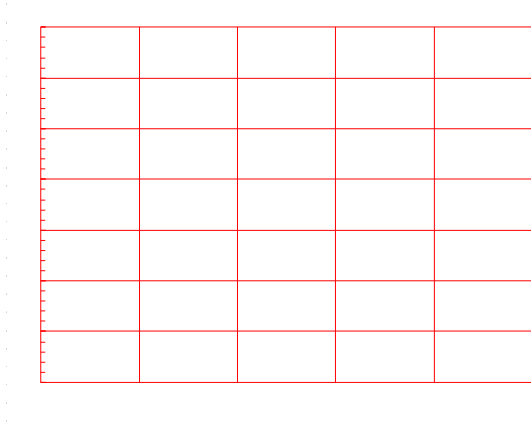
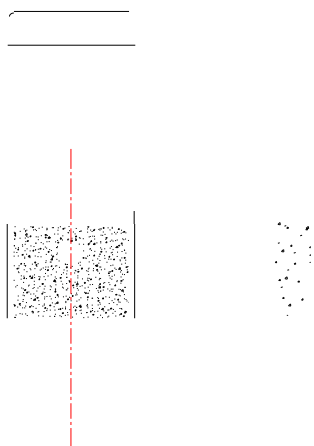


FIG.2: RMS on-state current versus case temperature



JST30Z-600CW

PACKAGE MECHANICAL DATA



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