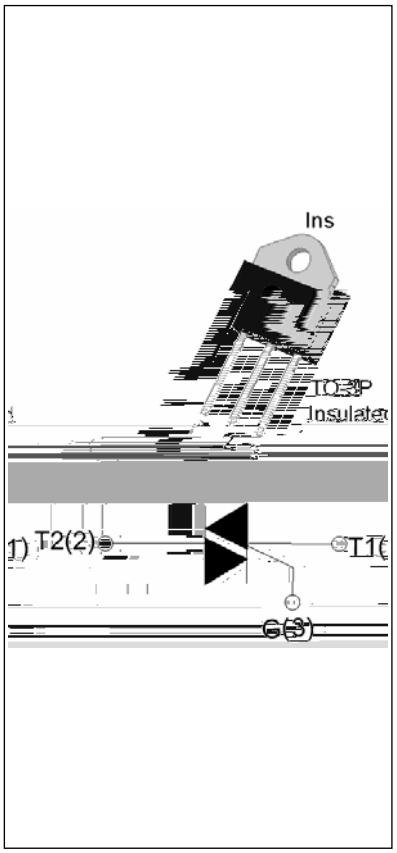
JST30Z-600CW 30A TRIAC

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)	V_{DRM}	600	V
Repetitive peak reverse voltage (T_j=25)	V_{RRM}	600	V
RMS on-state current (T_C 79)	$I_{T(RMS)}$	30	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25)	I_{TSM}	300	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25)		330	
I^2t value for fusing (t_p=10ms , T_j=25)	I^2t	450	A^2s
Critical rate of rise of on-state current (I_G=2 I_{GT} , f=100Hz , T_j=125)	dI/dt	100	A/μs
Peak gate current (t_p=20μs , T_j=125)	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 =33Ω	- -	MAX.	35	mA
V_{GT}		- -	MAX.	1.3	V
V_{GD}	V_D =V_{DRM} T_j=125 R_L =3.3kΩ	- -	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/μs 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	

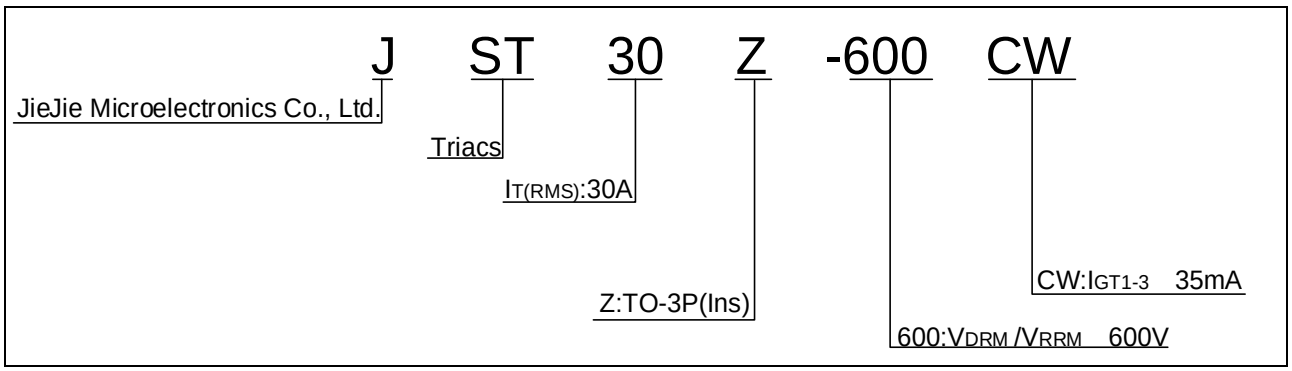
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM} =42A t_p=380μs	T_j=25	1.5	V
V_{TO}	Threshold voltage	T_j=125	0.72	V
R_D	Dynamic resistance	T_j=125	25	mΩ
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



MARKING

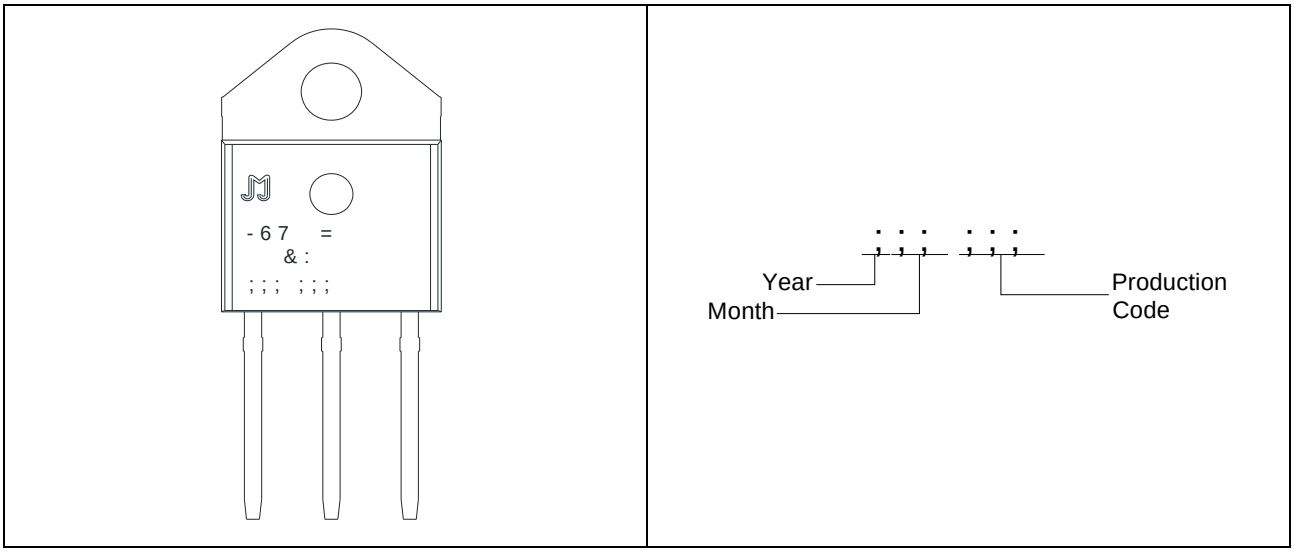


FIG.1: Maximum power dissipation versus RMS on-state current

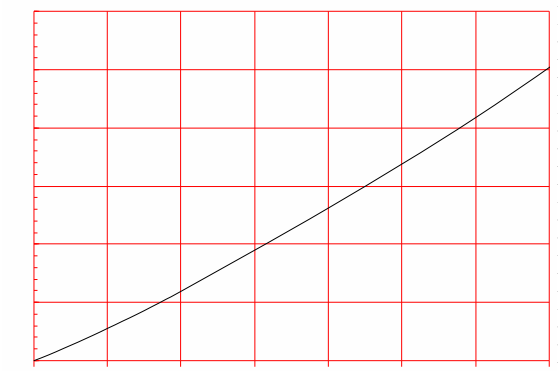
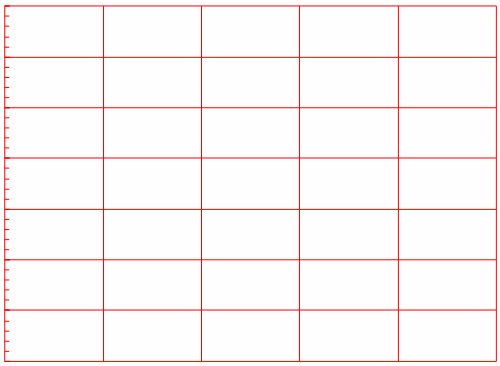
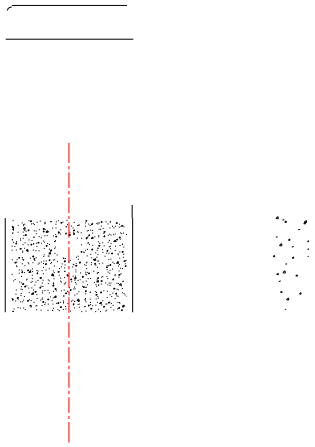


FIG.2: RMS on-state current versus case temperature



JST30Z-600CW

PACKAGE MECHANICAL DATA



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