



## JST100 Series 100A TRIACs

Rev.2.0

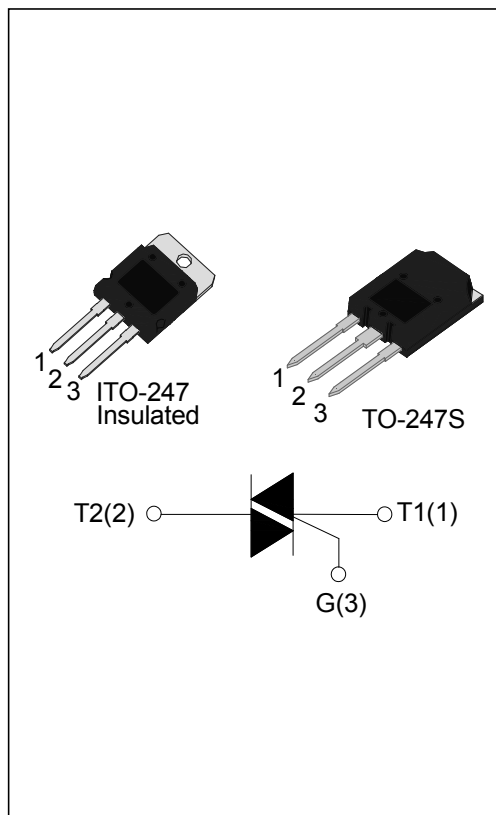
### DESCRIPTION:

JST100 Series triacs provide good commutation capability, which is suitable for general purpose AC switching and voltage regulation, and can be used in static relays, heating regulation, induction motor starting circuits.

From all three pins to external heatsink, JST100IS triacs provide an insulation voltage of 2500 V<sub>RMS</sub>. ,complying with UL standards (File ref: E252906)

### MAIN FEATURES

Symbol	Value	Unit
V <sub>DRM</sub> /V <sub>RRM</sub>	1200/1600	V
I <sub>T(RMS)</sub>	100	A
I <sub>GT1-3</sub>	≤50	mA



### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T <sub>stg</sub>	-40-150	°C
Operating junction temperature range	T <sub>j</sub>	-40-125	°C
Repetitive peak off-state voltage (T <sub>j</sub> =25°C)	V <sub>DRM</sub>	1200/1600	V
Repetitive peak reverse voltage (T <sub>j</sub> =25°C)	V <sub>RRM</sub>	1200/1600	V
Non repetitive surge peak Off-state voltage	V <sub>DSM</sub>	V <sub>DRM</sub> + 100	V
Non repetitive peak reverse voltage	V <sub>RSM</sub>	V <sub>RRM</sub> + 100	V
RMS on-state current	ITO-247(Ins) (T <sub>c</sub> =70°C)	100	A
	TO-247S (T <sub>c</sub> =90°C)		
Non repetitive surge peak on-state current (tp=20ms)	I <sub>TSM</sub>	1100	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	5500	A <sup>2</sup> s

Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	dI/dt	100	A/ $\mu$ s
Peak gate current	$I_{GM}$	8	A
Average gate power dissipation	$P_{G(AV)}$	2	W
Peak gate power	$P_{GM}$	10	W

**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
$V_{GD}$	$V_D = V_{DRM}$ $T_j = 125^\circ\text{C}$ $R_L = 3.3\text{K}\Omega$	I - II - III	MIN	0.2	V
$I_L$	$I_G = 1.2I_{GT}$	I - II - III	MAX	180	mA
$I_H$	$I_T = 100\text{mA}$		MAX	100	mA
dV/dt	$V_D = 2/3V_{DRM}$ $T_j = 125^\circ\text{C}$ Gate Open		MIN	1500	V/ $\mu$ s

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM} = 150\text{A}$ $t_p = 380\mu\text{s}$	$T_j = 25^\circ\text{C}$	1.5	V
$I_{DRM}$	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ\text{C}$	20	$\mu\text{A}$
$I_{RRM}$		$T_j = 125^\circ\text{C}$	12	mA

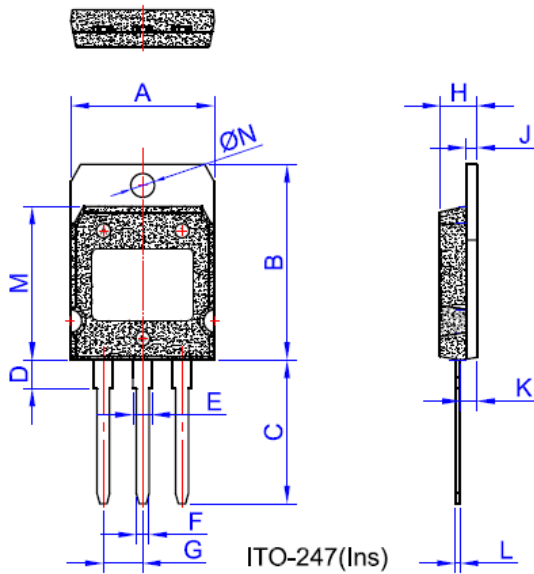
**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	ITO-247(Ins)	0.30	$^\circ\text{C}/\text{W}$
		TO-247S	0.27	

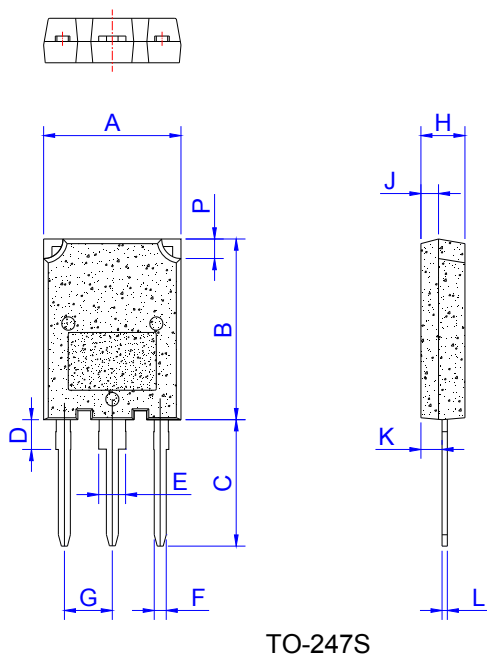
## ORDERING INFORMATION

J	ST	100	IS	-1200	BW
JieJie Microelectronics Co.,Ltd		Triacs			BW: $I_{GT1-3} \leq 50mA$
		$I_{T(RMS)}: 100A$			1200: $V_{DRM} / V_{RRM} \geq 1200V$ 1600: $V_{DRM} / V_{RRM} \geq 1600V$
			CS: TO-247S IS: ITO-247(Ins)		

## PACKAGE MECHANICAL DATA

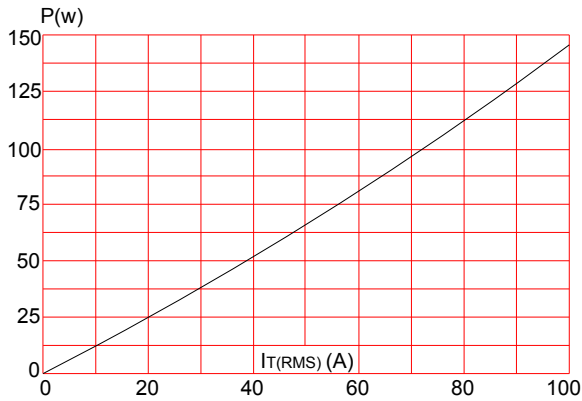


Ref	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	19.7	19.9	20.1	0.776	0.783	0.791
B	26.9	27.1	27.3	1.059	1.067	1.075
C	19.4	19.9	20.4	0.764	0.783	0.803
D	3.8	3.9	4.0	0.15	0.154	0.157
E	2.56	2.66	2.76	0.101	0.105	0.109
F	1.66	1.76	1.86	0.065	0.069	0.073
G		5.45			0.215	
H	5.05	5.10	5.5	0.199	0.201	0.217
J	1.45	1.50	1.55	0.057	0.059	0.061
K	2.20	2.30	2.40	0.087	0.091	0.094
L	0.60	0.70	0.80	0.024	0.028	0.031
M	21.2	21.3	21.4	0.835	0.839	0.843
ØN	3.20	3.30	3.40	0.126	0.130	0.134

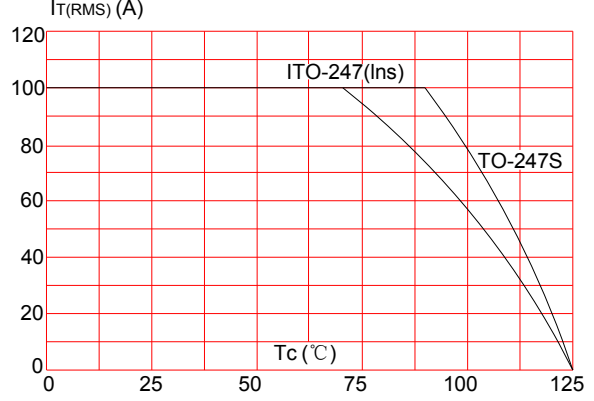


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.1		16.1	0.594		0.634
B	19.8		20.8	0.78		0.819
C	13.8		14.8	0.543		0.583
D	3.00		4.00	0.118		0.157
E	2.75		3.35	0.108		0.132
F	1.30		1.50	0.051		0.059
G	5.10		5.80	0.201		0.228
H	4.50		5.50	0.177		0.217
J	1.45		2.15	0.057		0.085
K	1.90		2.80	0.075		0.110
L	0.55		0.80	0.022		0.031
P	2.00		2.40	0.079		0.094

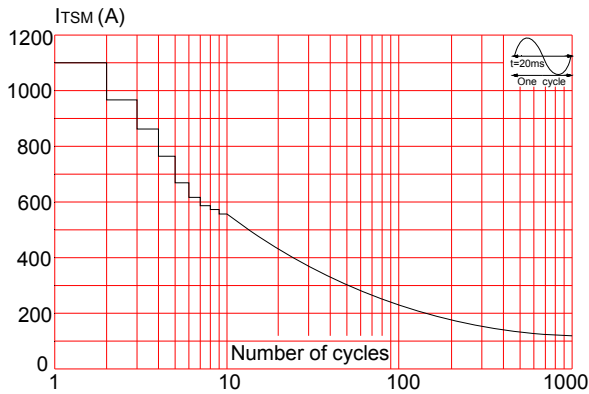
**FIG.1:** Maximum power dissipation versus RMS on-state current



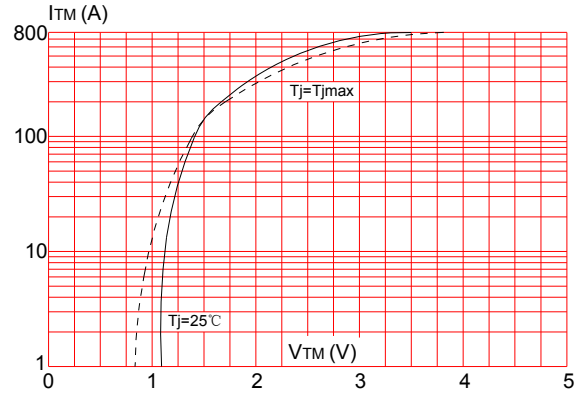
**FIG.2:** RMS on-state current versus case temperature



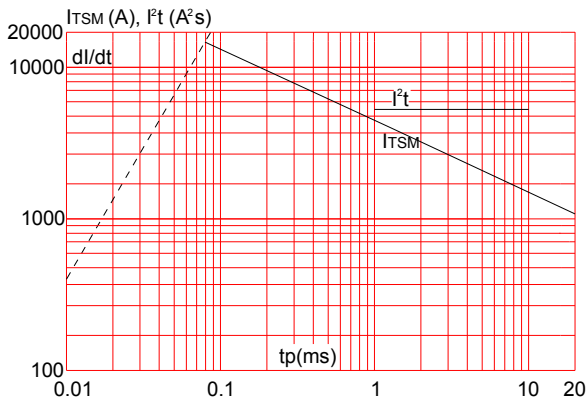
**FIG.3:** Surge peak on-state current versus number of cycles



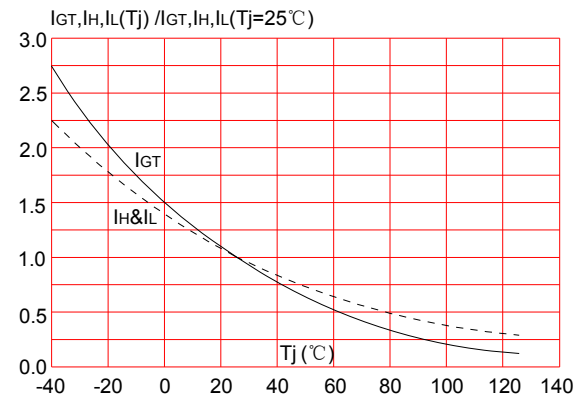
**FIG.4:** On-state characteristics (maximum values)




**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



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