

JST80IS-1600BW 80A TRIAC

Rev.A.1.1

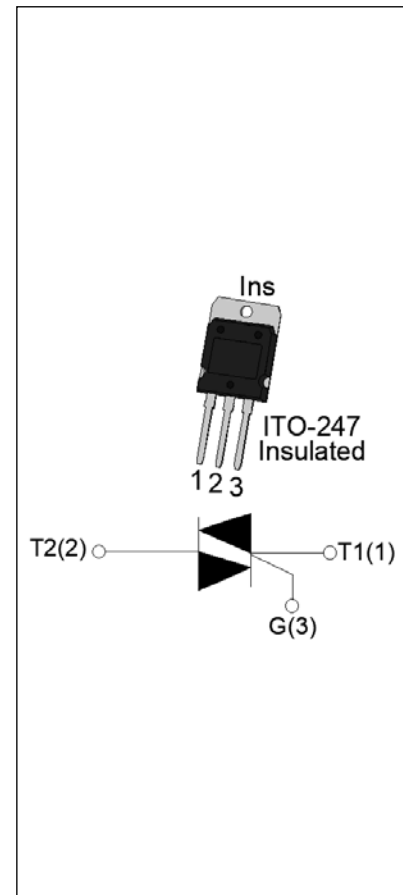
DESCRIPTION:

The JST80IS-1600BW 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.

JST80IS-1600BW snubberless triac is especially recommended for use on inductive loads. By using an internal ceramic pad, JST80IS-1600BW provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package ITO-247 is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	80	A
V_{DRM}/V_{RRM}	1600	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	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)	V_{DRM}	1600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	1600	V
RMS on-state current ($T_c \leq 90^\circ\text{C}$)	$I_{T(RMS)}$	80	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	800	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		880	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	3200	A ² s
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	A/ μs

Peak gate current ($t_p=20\mu s$, $T_j=125^\circ C$)	I_{GM}	10	A
Average gate power dissipation ($T_j=125^\circ C$)	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	25	W
Peak pulse voltage ($T_j=25^\circ C$; non-repetitive, off-state; FIG. 7)	V_{pp}	1	kV

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ C$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V$ $R_L=33\Omega$	I - II - III	MAX.	50	mA
V_{GT}		I - II - III	MAX.	1.3	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3k\Omega$	I - II - III	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I - III	MAX.	80	mA
		II		120	
I_H	$I_T=1A$		MAX.	70	mA
dV/dt	$V_D=1070V$ Gate Open $T_j=125^\circ C$		MIN.	1500	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=20V/\mu s$ $T_j=125^\circ C$		MIN.	28	A/ms
t_{on}	$I_G=80mA$ $I_A=400mA$ $I_R=40mA$ $T_j=25^\circ C$		TYP.	12	μs
t_{off}				80	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=120A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.9	V
V_{TO}	Threshold voltage	$T_j=125^\circ C$	0.71	V
R_D	Dynamic resistance	$T_j=125^\circ C$	23	$m\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	20	μA
I_{RRM}		$T_j=125^\circ C$	12	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	0.27	$^\circ C/W$
$R_{th(j-a)}$	junction to ambient (AC)	45	$^\circ C/W$

ORDERING INFORMATION

J	ST	80	IS	-1600	BW
JieJie Microelectronics Co., Ltd.	Triacs				
	$I_T(RMS):80A$				
		IS:ITO-247(Ins)			
					BW:IGT1-3≤50mA
				1600:V _{DRM} /V _{RRM} ≥1600V	

MARKING

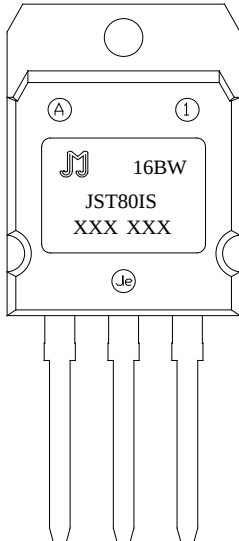
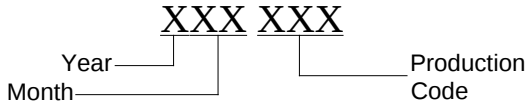
	
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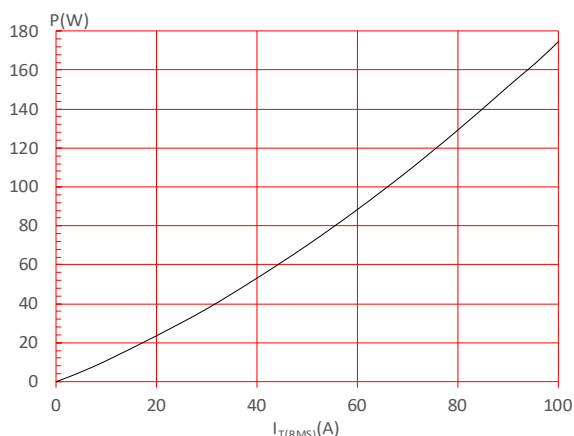
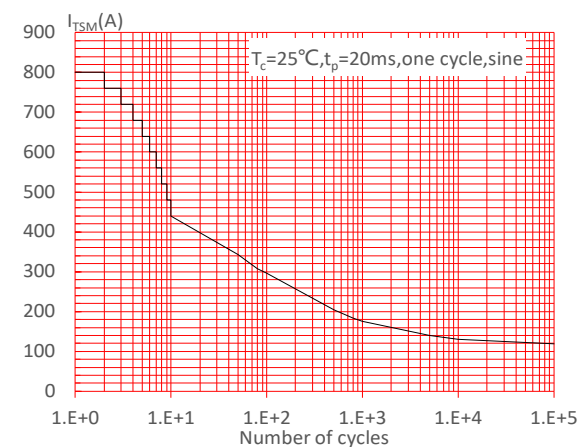
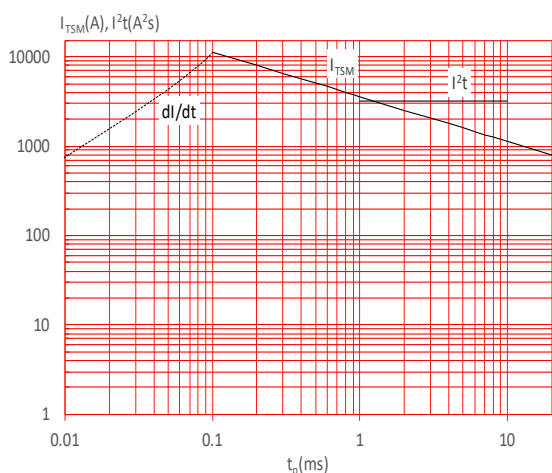
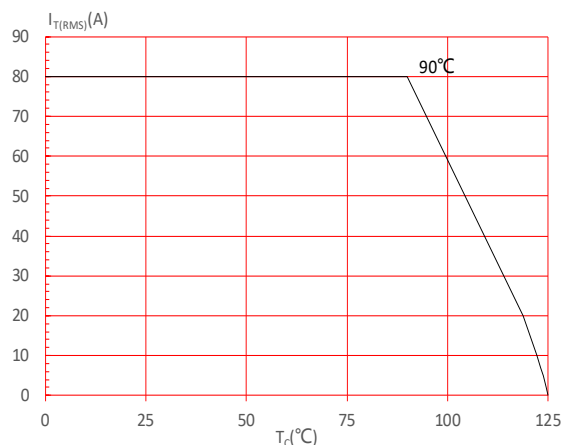
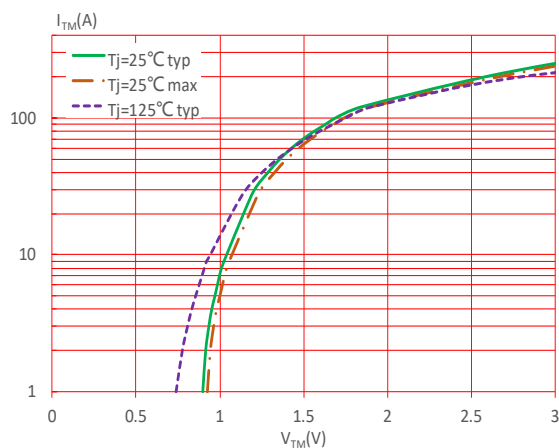
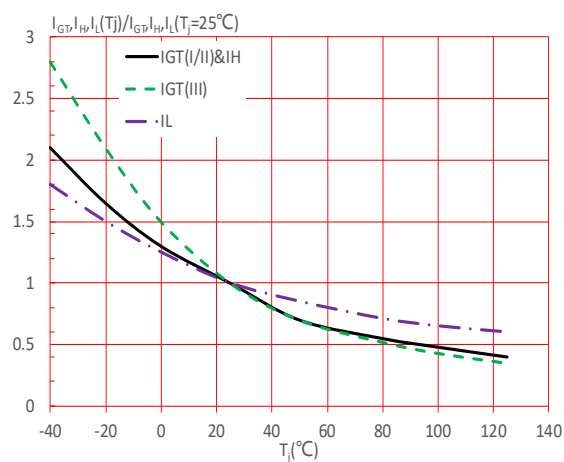
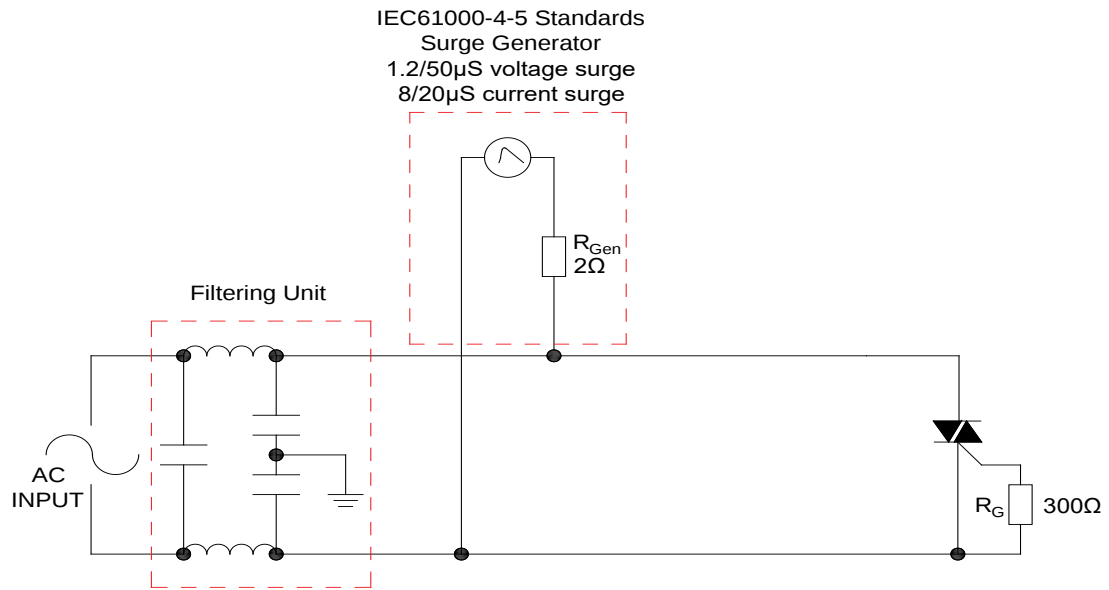
FIG.1: Maximum power dissipation versus RMS on-state current**FIG.3:** Surge peak on-state current versus number of cycles**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 100A/\mu s$)**FIG.2:** RMS on-state current versus case temperature**FIG.4:** On-state characteristic**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

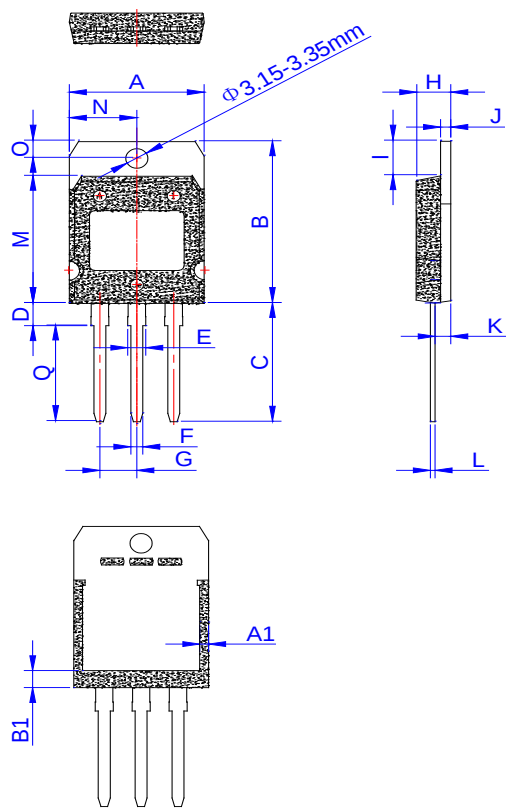
ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III			
JST80IS-1600BW	1600	50	ITO-247(Ins)	25	Tube

Document Revision History

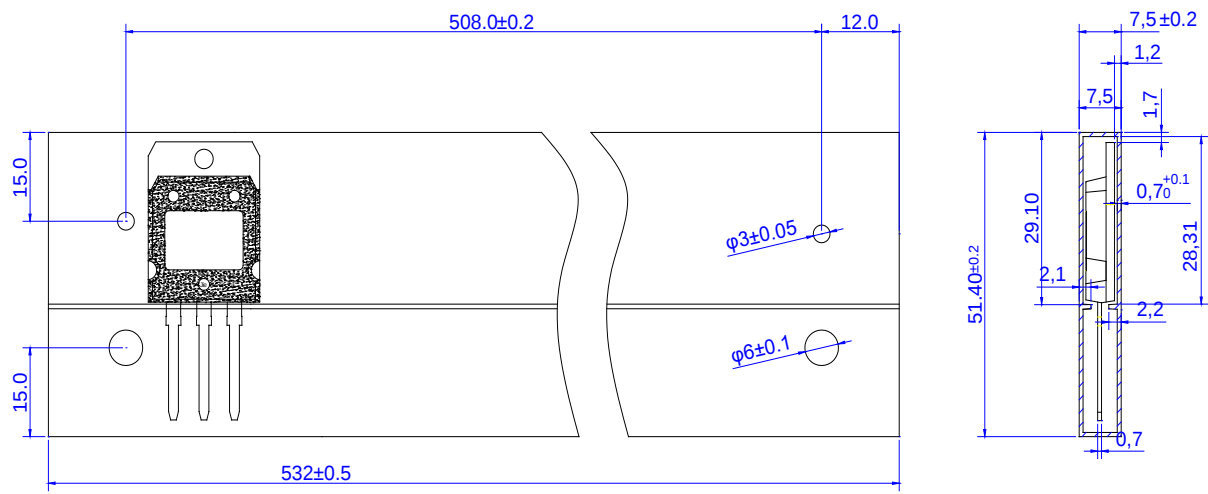
Date	Revision	Changes
Apr.11, 2023	A.1.0	Last updated
Oct.16, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	19.70		20.10	0.776		0.791
A1	1.10		1.50	0.043		0.059
B	26.90		27.30	1.059		1.075
B1	2.65		3.05	0.104		0.120
C	19.40		20.40	0.764		0.803
D	3.80		4.00	0.150		0.157
E	2.56		2.76	0.101		0.109
F	1.66		1.86	0.065		0.073
G	5.25		5.65	0.207		0.222
H	5.05		5.50	0.199		0.217
I	5.60		6.00	0.220		0.236
J	1.45		1.55	0.057		0.061
K	2.20		2.40	0.087		0.094
L	0.60		0.80	0.024		0.031
M	21.20		21.40	0.835		0.843
N	9.70		10.30	0.382		0.406
O	2.60		3.20	0.102		0.126
Q	15.80		16.20	0.622		0.638

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
ITO-247	TUBE	25	400	1,600

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