

JST80CS-1200BW 80A TRIAC

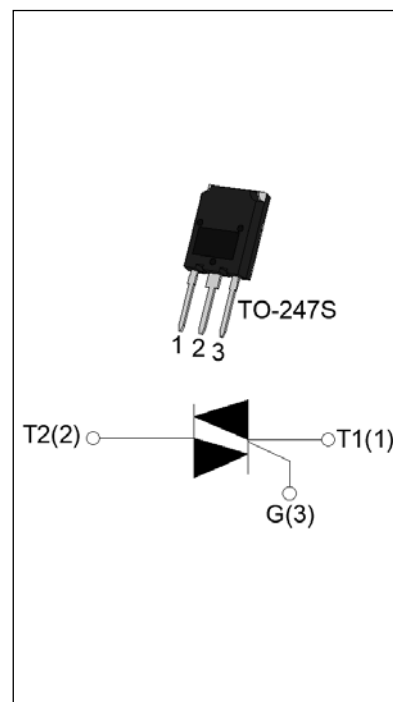
Rev.A.1.1

DESCRIPTION:

The JST80CS-1200BW 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. JST80CS-1200BW snubberless triac is especially recommended for use on inductive loads. Package TO-247S is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	80	A
V_{DRM}/V_{RRM}	1200	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 ($T_j=25^{\circ}C$)	V_{DRM}	1200	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	1200	V
RMS on-state current ($T_c \leq 86^{\circ}C$)	$I_{T(RMS)}$	80	A
Non repetitive surge peak on-state current (full cycle , $t_p=20ms$, $T_j=25^{\circ}C$)	I_{TSM}	800	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6ms$, $T_j=25^{\circ}C$)		880	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	3200	A ² s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100Hz$, $T_j=125^{\circ}C$)	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 ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	1	kV
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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 -III	MAX.	80	mA
		II		120	
I_H	$I_T=1\text{A}$		MAX.	70	mA
dV/dt	$V_D=800\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	2000	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=20\text{V}/\mu\text{s}$ $T_j=125^{\circ}\text{C}$		MIN.	25	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.	8	μs
t_{off}				60	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=120\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.9	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.71	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	23	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	15	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	10	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	0.3	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	45	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

J	ST	80	CS	-1200	BW
JieJie Microelectronics Co., Ltd.	Triacs	$I_T(RMS):80A$			
			$CS:TO-247S$		
				$1200:V_{DRM}/V_{RRM} \geq 1200V$	$BW:I_{GT1-3} \leq 50mA$

MARKING

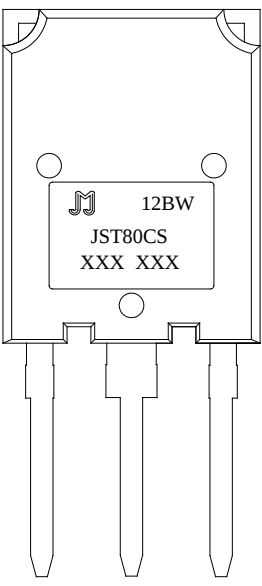
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FIG.1: Maximum power dissipation versus RMS on-state current

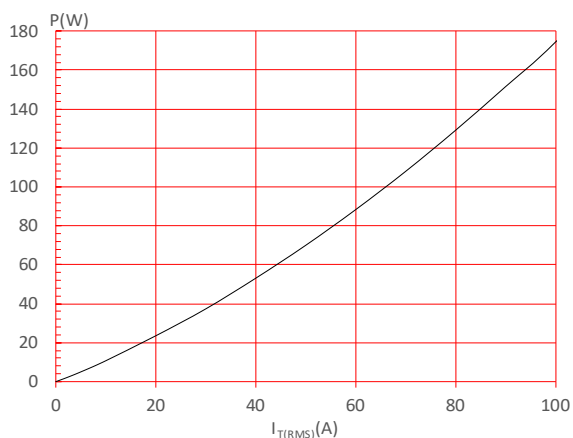


FIG.3: Surge peak on-state current versus number of cycles

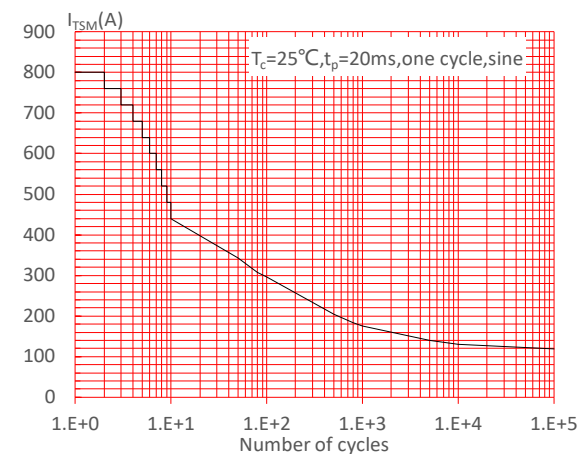


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

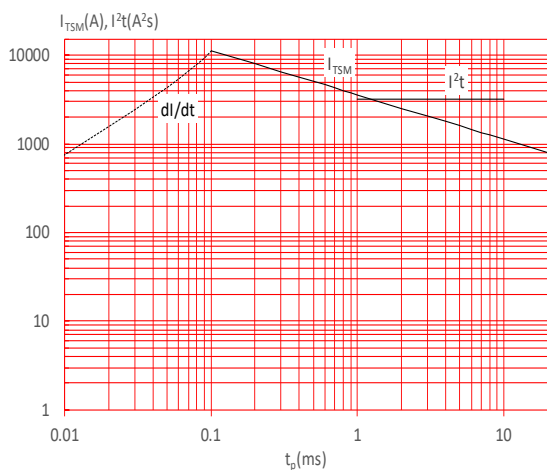


FIG.2: RMS on-state current versus case temperature

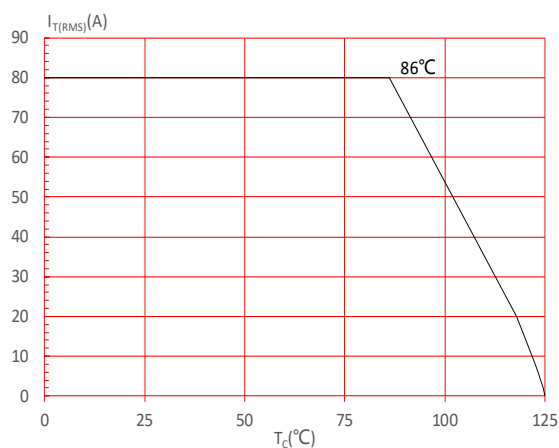


FIG.4: On-state characteristic

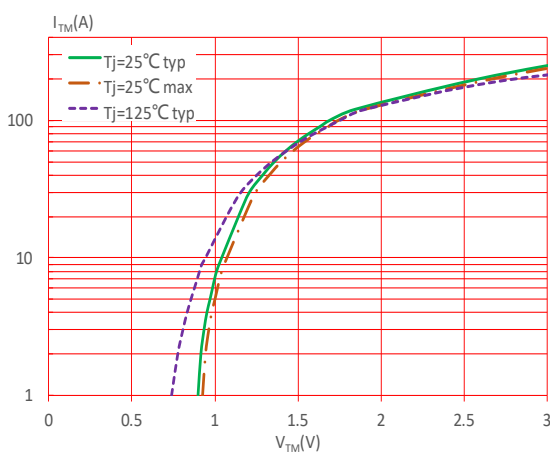


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

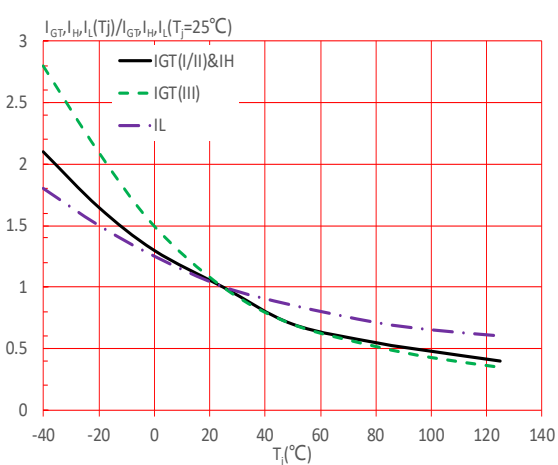
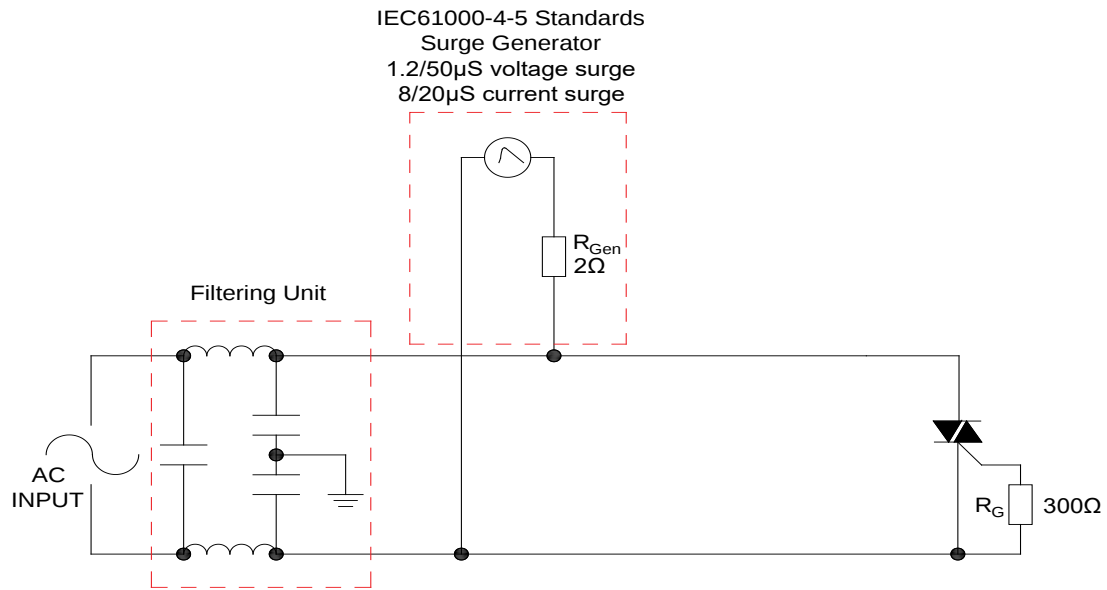


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards

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			
JST80CS-1200BW	1200	50	TO-247S	30	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

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