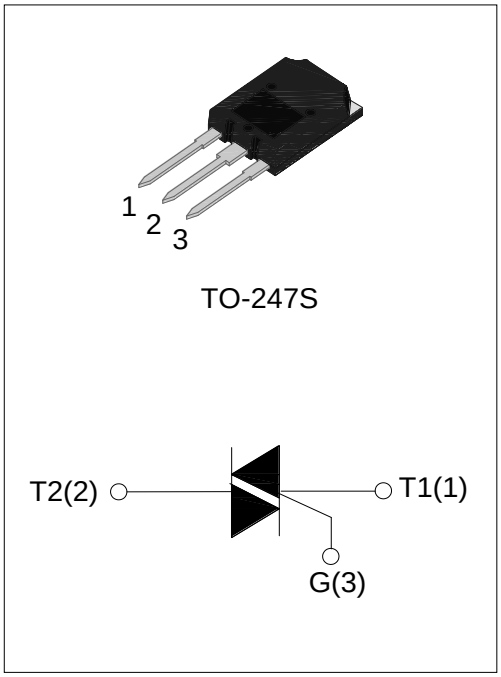
JST80 Series 80A TRIACs

Rev.2.0

DESCRIPTION:

JST80 series triacs, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	80	A
V_{DRM} /V_{RRM}	1000/1200/1600	V
V_{TM}	1.55	V

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}	1000/1200/1600	V
Repetitive peak reverse voltage (T_j=25℃)		V_{RRM}	1000/1200/1600	V
Non repetitive surge peak Off-state voltage		V_{DSM}	V_{DRM} +100	V
Non repetitive peak reverse voltage		V_{RSM}	V_{RRM} +100	V
RMS on-state current	TO-247S (T_C=70℃)	$I_{T(RMS)}$	80	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	800	A
I^2t value for fusing (tp=10ms)		I^2t	3200	A^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})		dI/dt	100	A/μs
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℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D =12V R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	50	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX	1.3	V
V_{GD}	V_D =V_{DRM} T_j =125℃ R_L =3.3KΩ	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 =100mA		MAX	60	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j =125℃		MIN	1000	V/μs
(dV/dt)c	Without snubber T_j=125℃		MIN	20	V/μs

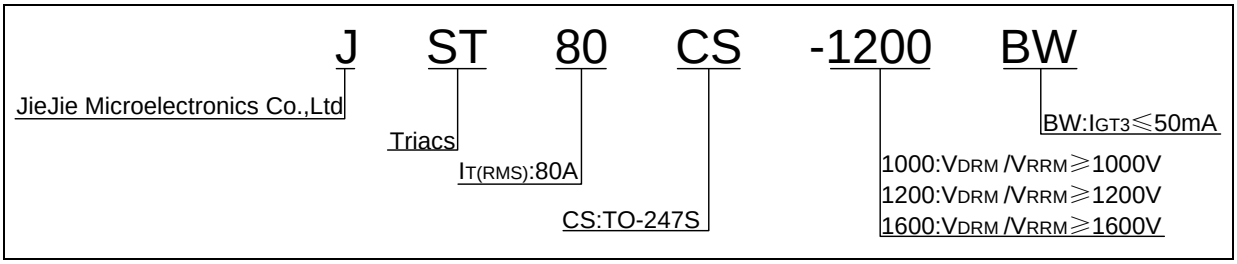
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM} =120A tp=380μs	T_j=25℃	1.55	V
I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	50	μA
I_{RRM}		T_j=125℃	10	mA

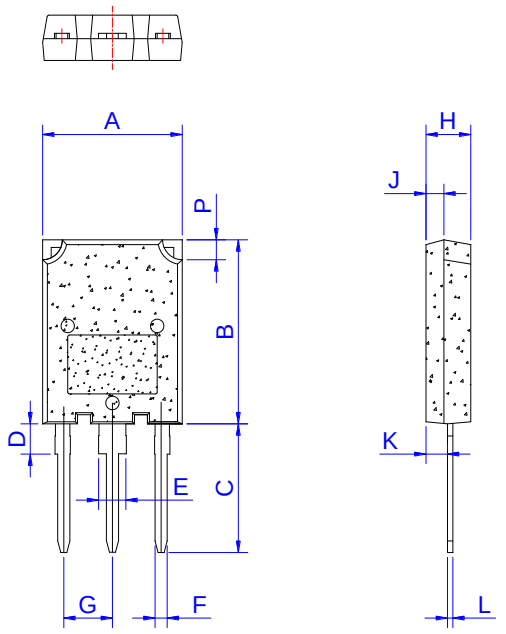
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-247S	0.45	℃/W

ORDERING INFORMATION



PACKAGE MECHANICAL DATA



TO-247S

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

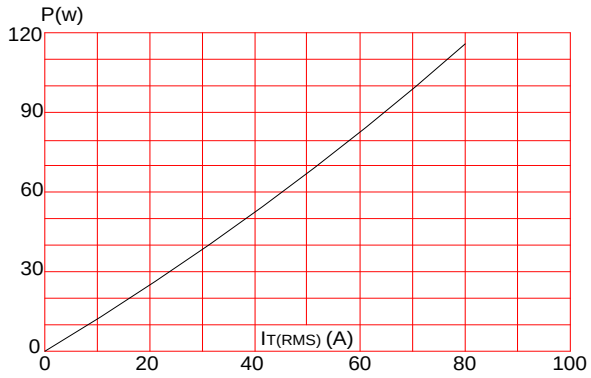


FIG.2: RMS on-state current versus case temperature

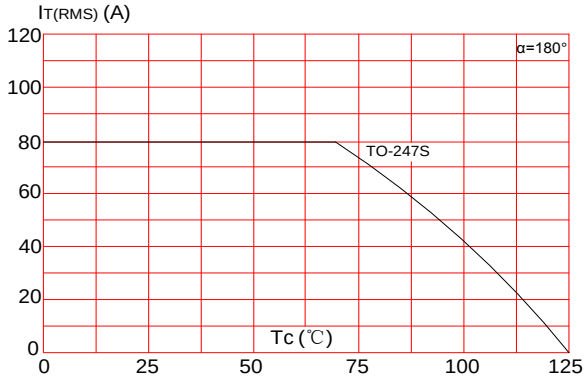


FIG.3: Surge peak on-state current versus number of cycles

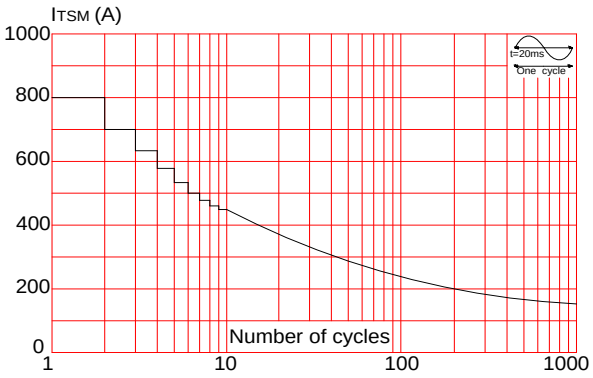


FIG.4: On-state characteristics (maximum values)

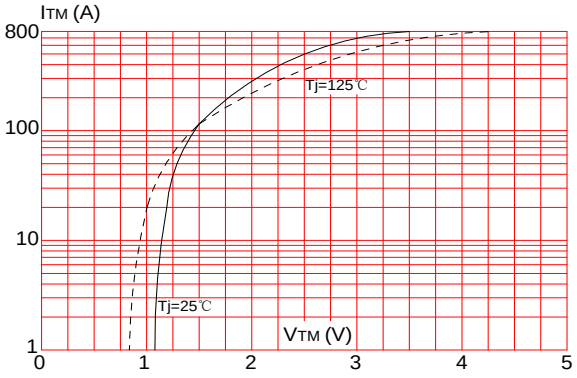


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (dI/dt < 100A/μs)

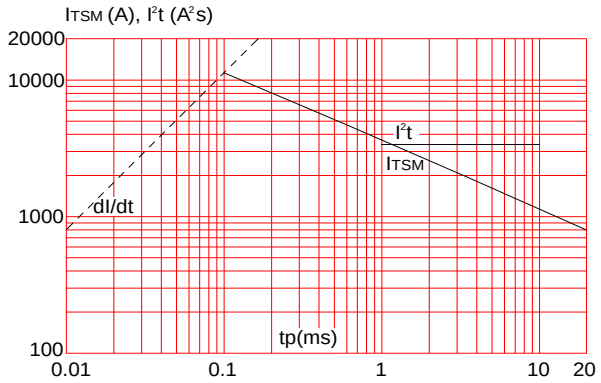
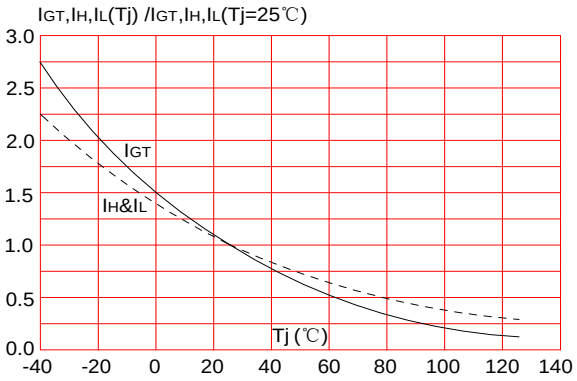


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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