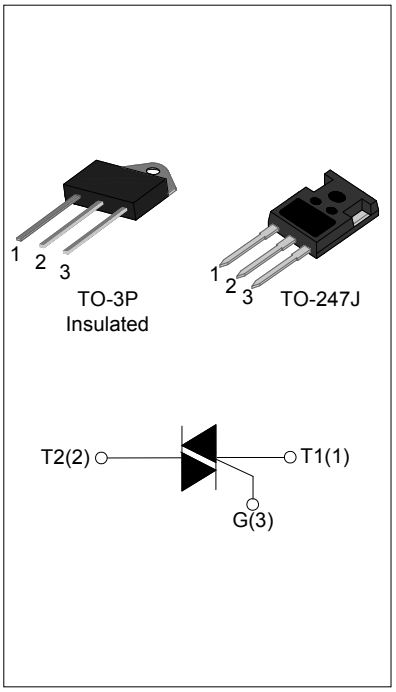
JST26 Series 25A TRIACs

Rev.1.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JST26 series 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. From all three terminals to external heatsink, JST26Z provide a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906).



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
V_{DRM} /V_{RRM}	600/800	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}	600/800	V
Repetitive peak reverse voltage (T_j=25℃)		V_{RRM}	600/800	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-3P(Ins) (T_C=100℃)	$I_{T(RMS)}$	25	A
	TO-247J (T_C=110℃)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	250	A
I^2t value for fusing (tp=10ms)		I^2t	340	A^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})		dI/dt	50	A/μs

Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				BW	CW	
I_{GT}	V_D =12V R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	50	35	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	70	mA
		Ⅱ		100	80	
I_H	I_T =100mA		MAX	75	50	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j =125℃		MIN	1000	500	V/μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D =12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	50	mA
		Ⅳ		70	
V_{GT}		ALL	MAX	1.3	V
V_{GD}	V_D =V_{DRM} T_j =125℃ R_L =3.3KΩ	ALL	MIN	0.2	V
I_L	I_G =1.2I_{GT}	Ⅰ-Ⅲ	MAX	90	mA
		Ⅱ-Ⅳ		100	
I_H	I_T =100mA		MAX	80	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃		MIN	500	V/μs

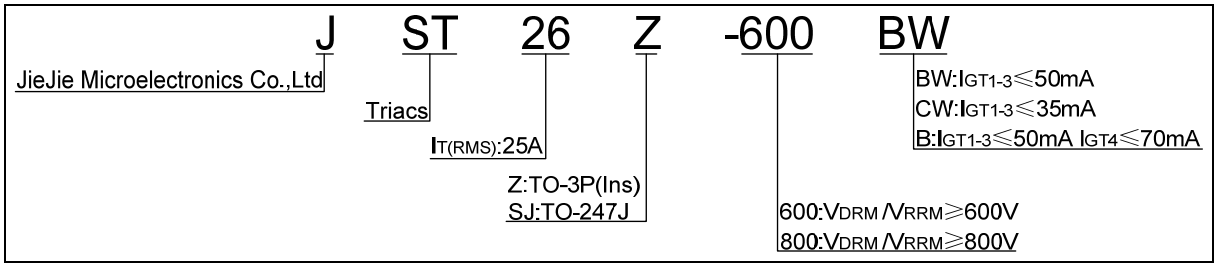
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM} =35A tp=380μs	T_j=25℃	1.5	V
I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	3	mA

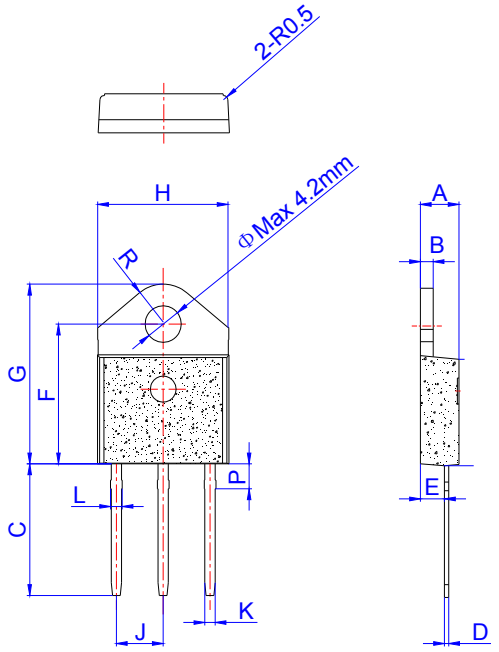
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-3P(Ins)	1.0	℃/W
		TO-247J	0.9	

ORDERING INFORMATION

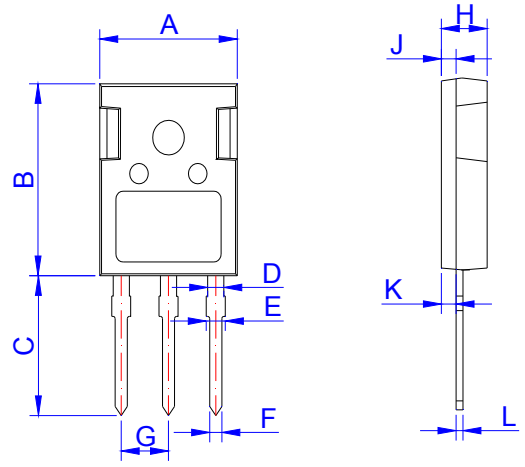


PACKAGE MECHANICAL DATA



TO-3P Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	



TO-247J

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	22.20	0.819	0.828	0.874
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G		5.44			0.214	
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031

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

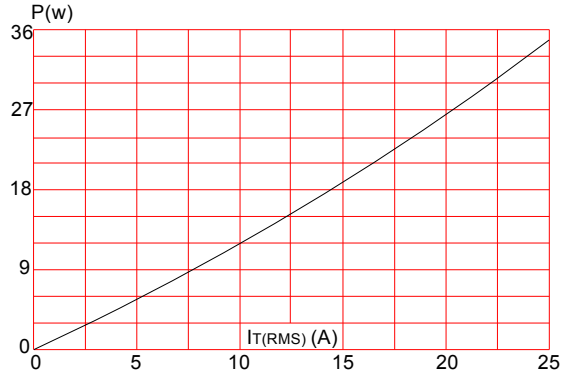


FIG.2: RMS on-state current versus case temperature

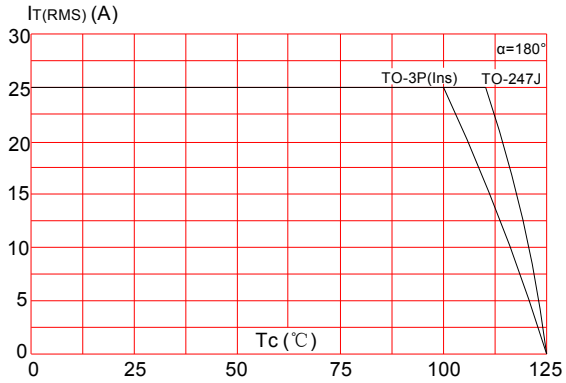


FIG.3: Surge peak on-state current versus number of cycles

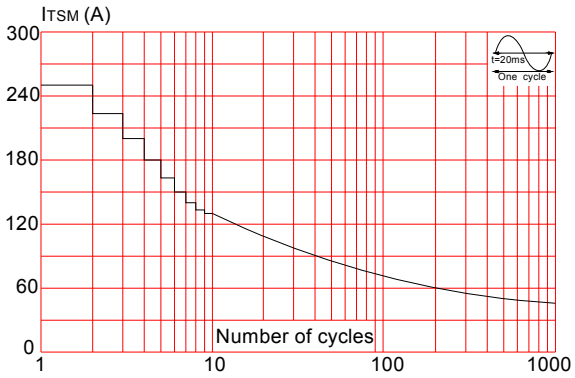


FIG.4: On-state characteristics (maximum values)

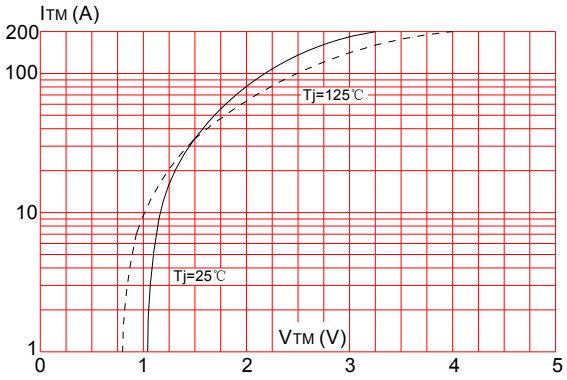


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (dI/dt < 50A/μs)

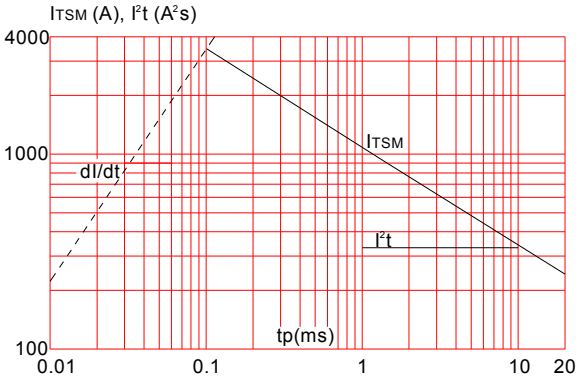
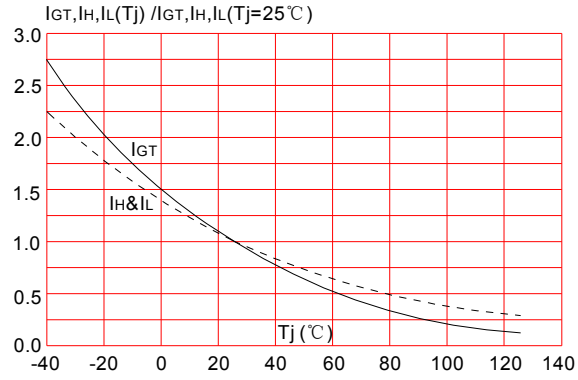


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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