JST40i、JST41i Series 40A TRIACs

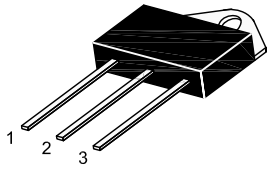
DESCRIPTION:

High current density due to double mesa technology; SIPOS and Glass Passivation.

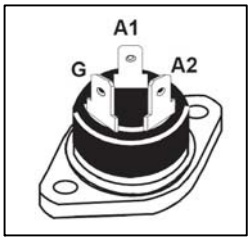
JST40i、JST41i Series triacs is suitable for general purpose AC switching. They can be used as an ON/OFF Function in applications such as static relays, heating regulation, induction motor stating circuits... or for phase contol operation light dimmers, motorspeed controllers.

JST40i、JST41i Series are 3 Quadrants triacs, They are specially recommended for use on inductive loads.

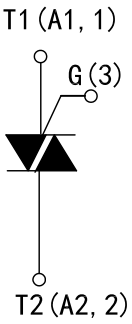
JST40i、JST41i are isolated internally, they provides a 2500V RMS isolation voltage from all three terminals to extemal heetsink.



TO-P3
Insulated
JST41i



RD91
Insulated
JST40i



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM}/V_{RRM}	600 / 800 / 1200	V
$I_{GT(Q1、Q2、Q3)}$	5 to 50	mA

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	℃
Operrating junction temperature range		Tj	-40 to +125	℃
Repetitive Peak Off-state Voltage	Tj=25℃	V_{DRM}	600 / 800 /1200	V
Repetitive Peak Reverse Voltage	Tj=25℃	V_{RRM}	600 / 800 /1200	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25℃	V_{DSM}	V_{DRM}+100	V
Non repetitive Peak Reverse Voltage		V_{RSM}	V_{RRM}+100	
RMS on-state current (full sine wave)	TO-P3 Tc=80℃	$I_{T(RMS)}$	40	A
	RD91 Tc=80℃			
Non repetitive surge peak on-state current (full cycle,Tj=25℃)	f = 60 Hz t=16.7ms	I_{TSM}	420	A
	f = 50 Hz t=20ms		400	
I²t Value for fusing	tp=10ms	I²t	880	A²s
Critical rate of rise of on-state current I_G=2×I_{GT}, tr≤100 ns, f=120Hz, Tj=125℃		dI /dt	50	A/μs
Peak gate current tp=20us,Tj=125℃		I_{GM}	8	A
Average gate power dissipation Tj=125℃		$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS(Tj=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Limits BW(B)	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} R_L=3.3KΩ Tj =125℃	I-II-III	MIN.	0.2	V
I_L	I_G=1.2I_{GT}	I-III	MAX.	80	mA
		II	MAX.	100	mA
I_H	I_T =100mA		MAX.	60	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	1000	V/μs
(dI/dt)c	Without snubber Tj=125℃		MIN.	20	A/ms

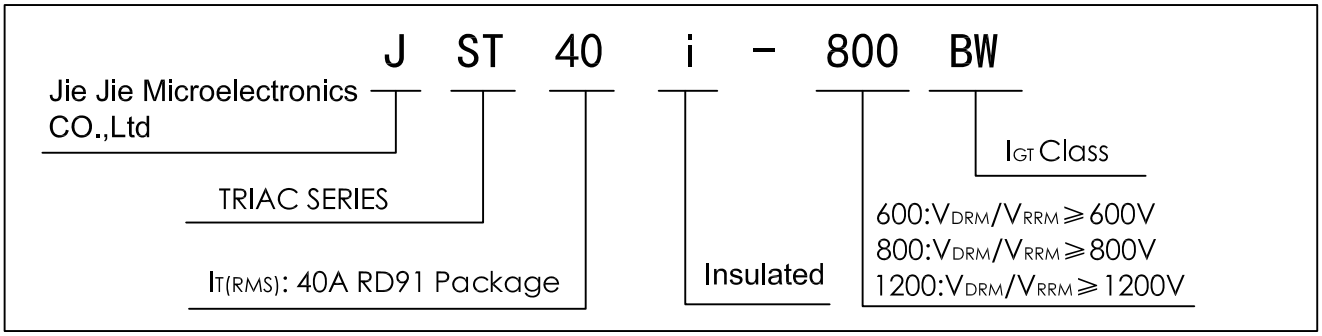
STATIC CHARACTERISTICS

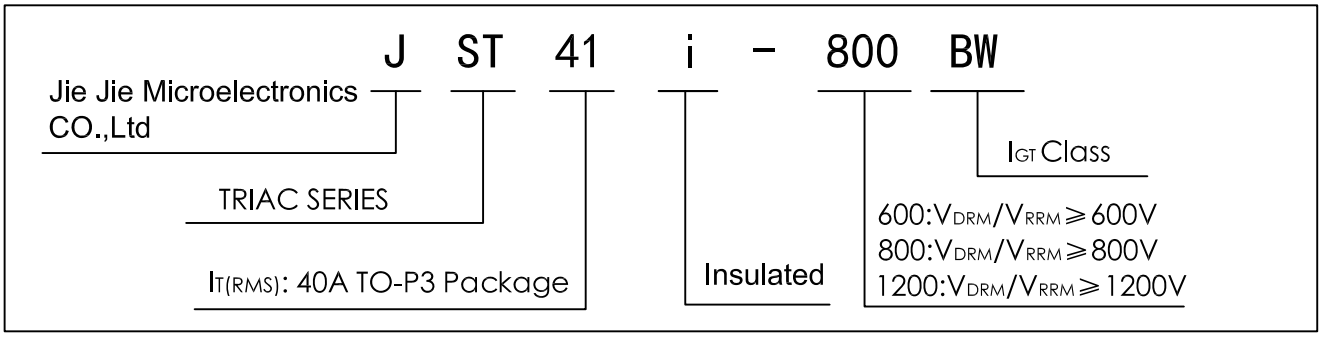
Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=60A,tp=380μs	Tj=25℃	1.55	V
I_{DRM} I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}	Tj=25℃	10	μA
		Tj=125℃	5	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(J-C)}$	Junction to Case(AC)	TO-P3	0.9	℃/W
		RD91	0.9	

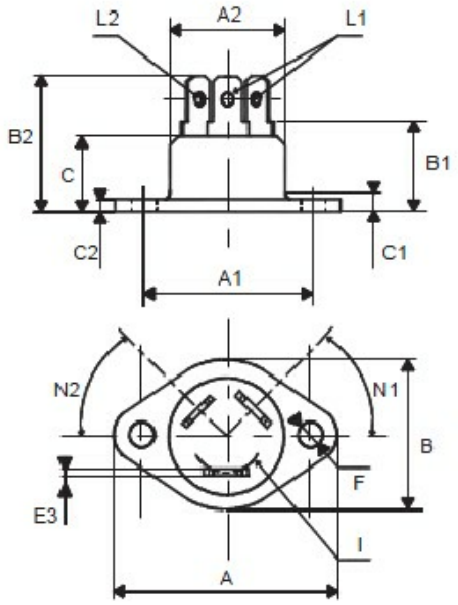
ORDERING INFORMATION





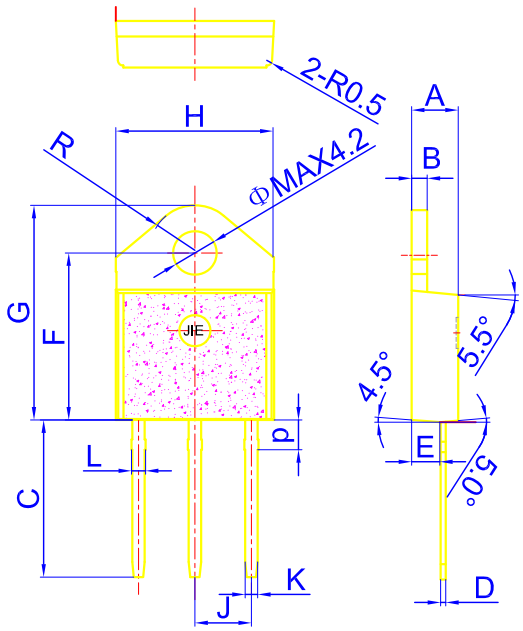
PACKAGE MECHANICAL DATA

RD91 Package



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A		40.00		1.575
A1	29.90	30.30	1.177	1.193
A2		22.00		0.867
B		27.00		1.063
B1	13.50	16.50	0.531	0.650
B2		24.00		0.945
C		14.00		0.551
C1		3.50		0.138
C2	1.95	3.00	0.077	0.118
E3	0.70	0.90	0.027	0.035
F	4.00	4.50	0.157	0.177
I	11.20	13.60	0.441	0.535
L1	3.10	3.50	0.122	0.138
L2	1.70	1.90	0.067	0.075
N1	33°	43°	33°	43°
N2	28°	38°	28°	38°

TO-P3 Package



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.6	0.565		0.614
D	0.5		0.7	0.020		0.028
E	2.7		2.9	0.106		0.114
F	15.8		16.5	0.622		0.650
G	20.4		21.1	0.815		0.831
H	15.1		15.5	0.594		0.610
J	5.4		5.65	0.213		0.222
K	1.2		1.4	0.047		0.055
L	1.35		1.50	0.053		0.059
P	2.8		3.0	0.110		0.118
R		4.6			0.181	

FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

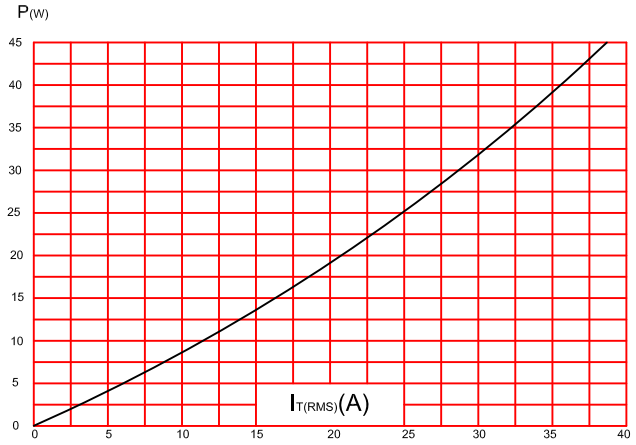


FIG.2:RMS on-state current versus case temperature(full cycle)

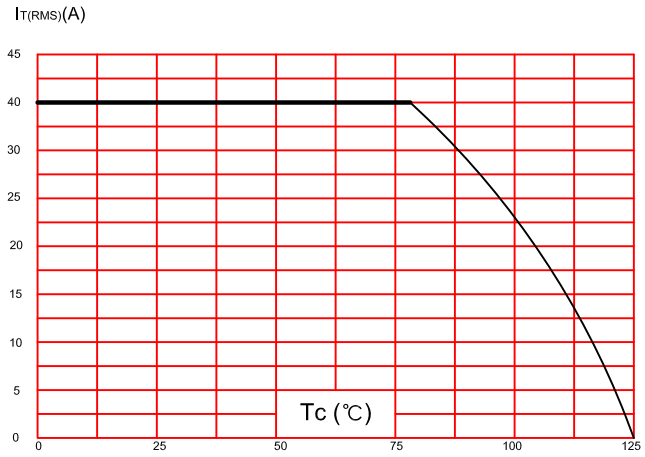


FIG.3:On-state characteristics (maximum values).

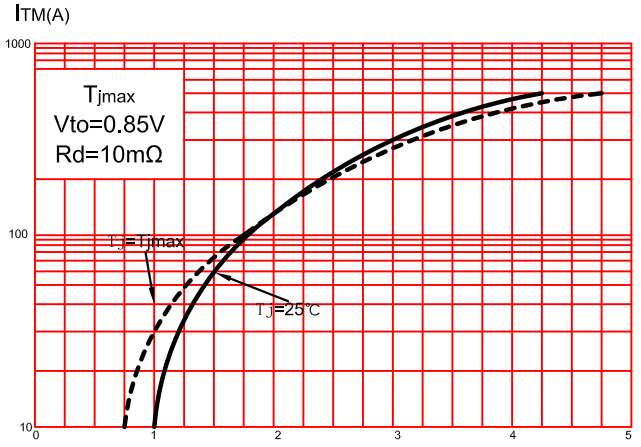


FIG.4:Surge peak on-state current versus number of cycles.

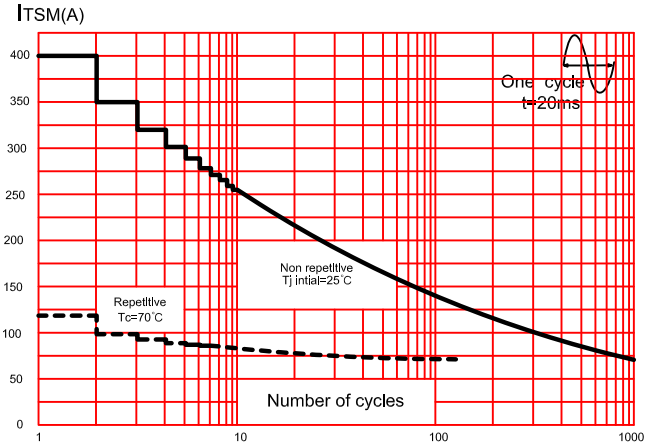


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

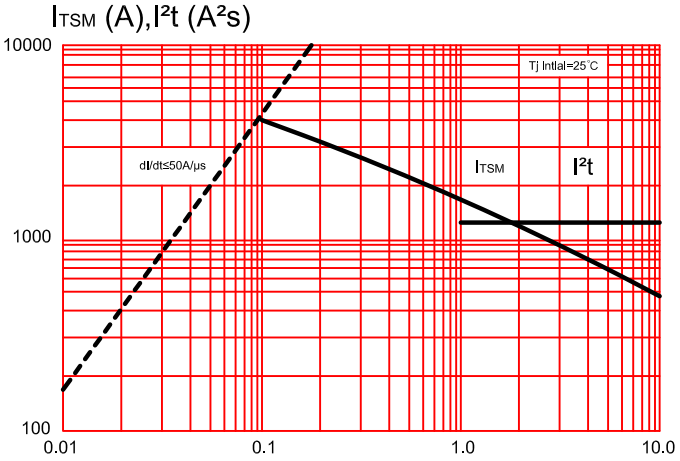


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)