JST06A/JST06B Series 6A TRIACs

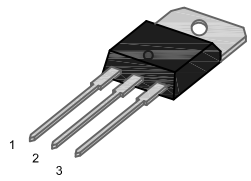
DESCRIPTION:

High current density due to mesa technology; Glass Passivation.

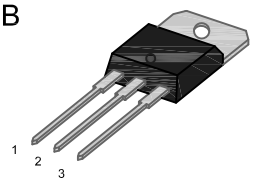
JST06A/JST06B series triacs is suitable for general purpose AC switching. They can be used as an ON/OFF Function in applications such as static relays, heating regulation, induction motor stating circuits... or for phase contol operation light dimmers, motorspeed controllers.

JST06A/JST06B-xxxTW、xxxSW、-xxxCW、-xxxBW are 3 Quadrants triacs, They are specially recommended for use on inductive loads.

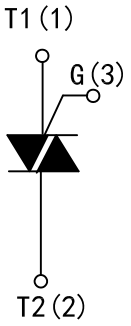
JST06A series provides a 2500V RMS isolation voltage from all three terminals to extemal heetsink complying with UL standards (File ref.:E252906).



JST06B(TO-220B non-insulated)



JST06A(TO-220A insulated)
UL file:E252906



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	6	A
V_{DRM}/V_{RRM}	600 and 800	V
V_{TM}	1.55	V

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	˚C
Operrating junction temperature range		Tj	-40 to +125	˚C
Repetitive Peak Off-state Voltage	Tj=25˚C	V_{DRM}	600 and 800	V
Repetitive Peak Reverse Voltage	Tj=25˚C	V_{RRM}	600 and 800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25˚C	V_{DSM}	700 and 900	V
Non repetitive Peak Reverse Voltage		V_{RSM}	700 and 900	
RMS on-state current (full sine wave)	JST06B Tc=110˚C	$I_{T(RMS)}$	6	A
	JST06A Tc=105˚C			
Non repetitive surge peak on-state current (full cycle,Tj=25˚C)	f=60Hz、t=16.7ms	I_{TSM}	63	A
	f=50 Hz、t=20ms		60	
I^2t Value for fusing	tp=10ms	I^2t	20	A^2s
Critical rate of rise of on-state current $I_G=2\times I_{GT}$, tr≤100 ns, f=120Hz, Tj=125˚C		dI/dt	50	A/μs
Peak gate current	tp=20us,Tj=125˚C	I_{GM}	4	A
Peak gate power	tp=20us,Tj=125˚C	P_{GM}	5	W
Average gate power dissipation	Tj=125˚C	$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS(Tj=25℃ unless otherwise specified)

● 3 Quadrants

Symbol	Test Condition	Quadrant		JST06A/JST06B				Unit
				TW	SW	CW	BW	
I_{GT}	V_D=12V R_L=33Ω	I-II-III	MAX.	5	10	35	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.	15	20	50	70	mA
		II	MAX.	25	35	60	80	mA
I_H	I_T =100mA		MAX.	10	15	40	60	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	20	40	400	1000	V/μs
(dV/dt)c	(dI/dt)c=1.7A/ms Tj=125℃		MIN.	0.5	1	10	25	V/μs

● 4 Quadrants

Symbol	Test Condition	Quadrant		JST06A/JST06B				Unit
				D	A	C	B	
I_{GT}	V_D=12V R_L=33Ω	I-II-III IV	MAX.	5 10	10 25	25 50	50 100	mA
V_{GT}		ALL	MAX.	1.3				V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj =125℃	ALL	MIN.	0.2				V
I_L	I_G=1.2I_{GT}	I-III-IV	MAX.	10	20	40	60	mA
		II	MAX.	20	40	60	90	mA
I_H	I_T =100mA		MAX.	10	25	30	60	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	10	20	200	400	V/μs
(dV/dt)c	(dI/dt)c=2.7A/ms Tj=125℃		MIN.	1	2	5	10	V/μs

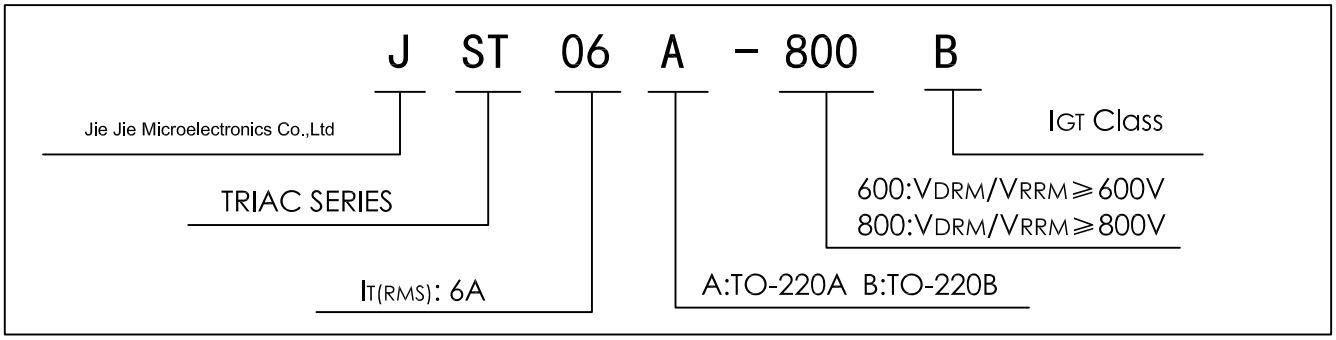
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=8.5A,tp=380μs	Tj=25℃	1.55	V
I_{DRM} I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}	Tj=25℃	5	μA
		Tj=125℃	1	mA

THERMAL RESISTANCES

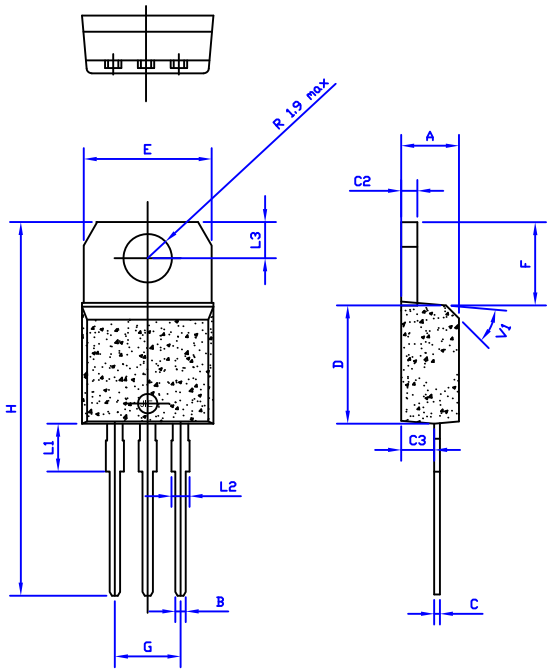
Symbol	Parameter		Value	Unit
$R_{th(J-C)}$	Junction to Case(AC)	JST06B	1.8	℃/W
		JST06A	2.7	
$R_{th(j-a)}$	Junction to ambient (S=1cm²)	JST06A	60	℃/W
		JST06B	60	

ORDERING INFORMATION



PACKAGE MECHANICAL DATA

TO-220A insulated package and TO-220B non-insulated package



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.61		0.88	0.024		0.034
C	0.46		0.70	0.018		0.027
C2	1.23		1.32	0.048		0.051
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.338		0.382
E	9.8		10.4	0.386		0.409
F	6.2		6.6	0.244		0.259
G	4.8		5.4	0.189		0.213
H	28.0		29.8	11.0		11.7
L1		3.75			0.147	
L2	1.14		1.7	0.044		0.066
L3	2.65		2.95	0.104		0.116
V1		40°			40°	

Marking:

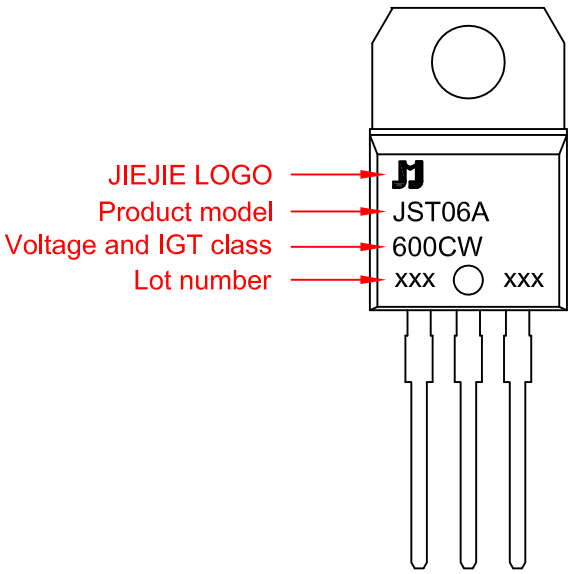


FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

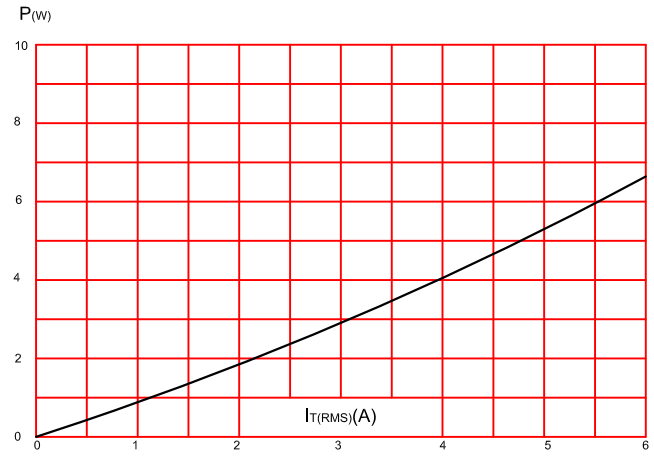


FIG.2:RMS on-state current versus case temperature(full cycle)

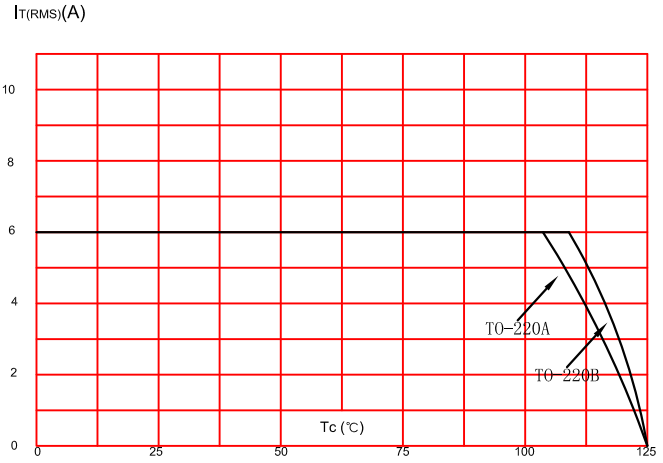


FIG.3:On-state characteristics (maximum values).

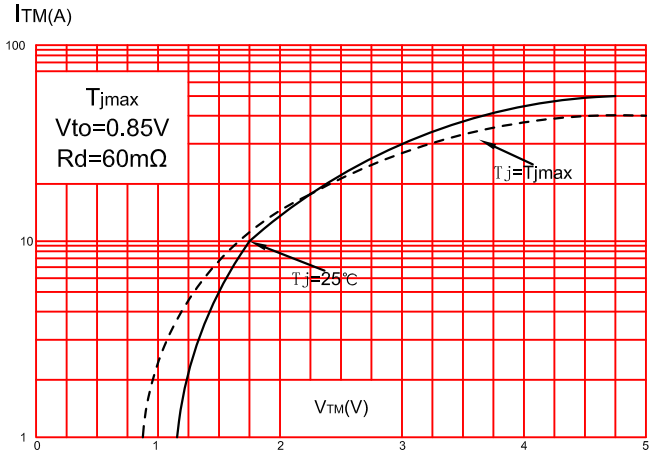


FIG.4:Surge peak on-state current versus number of cycles.

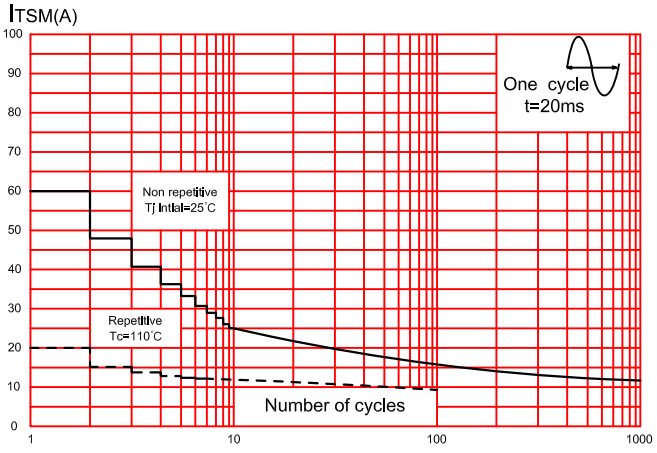


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

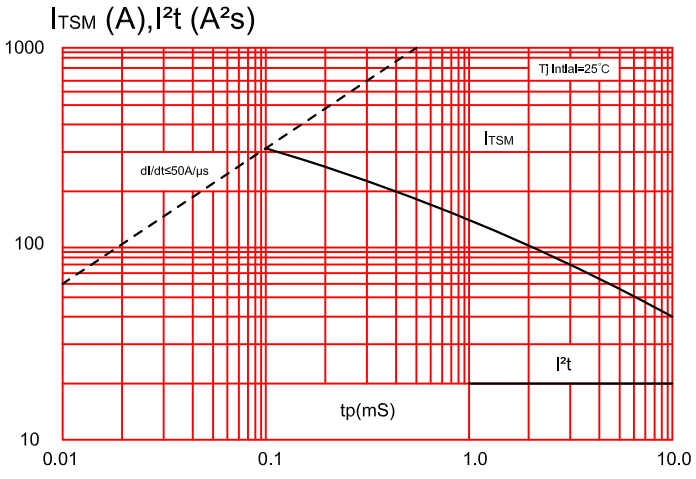


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)