



JST16/JST16i Series 16A TRIACs

DESCRIPTION:

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

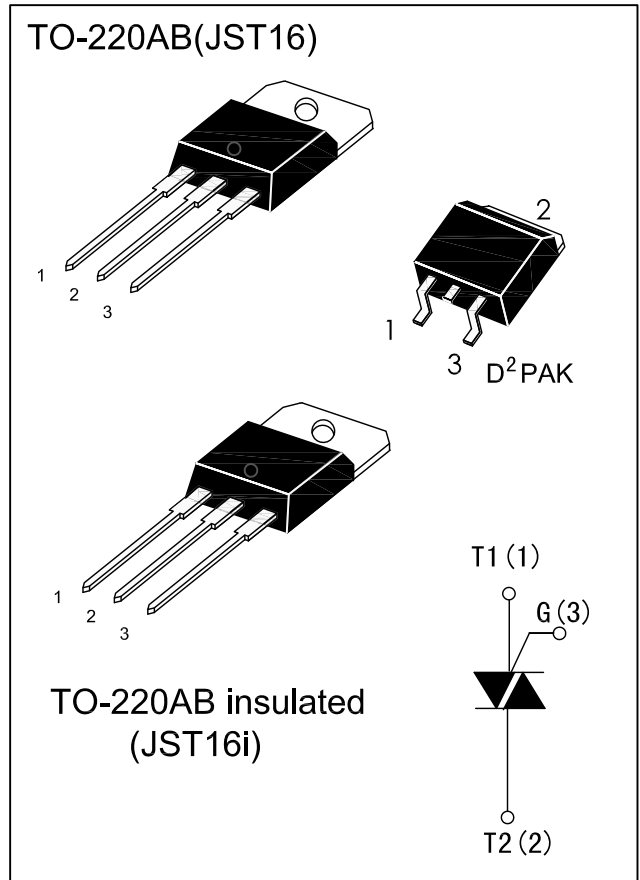
JST16/JST16i series triacs is suitable for general purpose AC switching. They can be used as an ON/OFF Function in applications such as static relays, heating regulation, induction motor starting circuits... or for phase control operation light dimmers, motorspeed controllers.

JST16/JST16i- $\times\times\times$ SW、 $-\times\times\times$ CW、 $-\times\times\times$ BW are 3 Quadrants triacs, They are specially recommended for use on inductive loads.

JST16i are isolated internally, they provides a 2500V RMS isolation voltage from all three terminals to external heatsink.

MAIN FEATURES

Symbol	Value	Unit
IT(RMS)	16	A
VDRM/VRRM	600 and 800	V
V _{TM}	≤ 1.55	V



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T _{stg}	-40 to +150	°C
Operating junction temperature range		T _j	-40 to +125	°C
Repetitive Peak Off-state Voltage	T _j =25°C	V _{DRM}	600and800	V
Repetitive Peak Reverse Voltage	T _j =25°C	V _{RSM}	600and800	
Non repetitive Surge Peak Off-state Voltage	t _p =10ms, T _j =25°C	V _{DSM}	700and900	V
Non repetitive Peak Reverse Voltage		V _{RSM}	700and900	
RMS on-state current (full sine wave)	D ² PAK T _c =100°C	I _{T(RMS)}	16	A
	TO-220B T _c =100°C			
	TO-220AB Ins T _c =85°C			
Non repetitive surge peak on-state current (full cycle, T _j =25°C)	f = 60 Hz t=16.7ms	I _{TSM}	168	A
	f = 50 Hz t=20ms		160	
I ² t Value for fusing	t _p =10ms	I ² t	144	A ² s
Critical rate of rise of on-state current I _G =2×I _{GT} , t _r ≤100 ns, f=120Hz, T _j =125°C		di / dt	50	A/μs
Peak gate current	t _p =20us, T _j =125°C	I _{GM}	4	A
Average gate power dissipation	T _j =125°C	PG(AV)	1	W

ELECTRICAL CHARACTERISTICS(Tj=25°C unless otherwise specified)

● 3 Quadrants

Symbol	Test Condition	Quadrant		JST16/JST16i			Unit
				SW	CW	BW	
IGT	VD=12V RL=33Ω	I-II-III	MAX.	10	35	50	mA
VGT		I-II-III	MAX.	1.3			V
VGD	VD=VDRM RL=3.3KΩ Tj =125°C	I-II-III	MIN.	0.2			V
IL	IG=1.2IGT	I-III	MAX.	25	50	70	mA
		II	MAX.	30	60	80	mA
IH	IT =500mA		MAX.	15	35	50	mA
dV/dt	VD=67%VDRM gate open Tj=125°C		MIN.	40	500	1000	V/μs
(dl/dt)c	(dV/dt)c=0.1V/μs Tj=125°C		MIN.	8.5	---	---	A/mS
	(dV/dt)c=10V/μs Tj=125°C			3.0	---	---	
	Without snubber Tj=125°C			----	8.5	14	

● 4 Quadrants

Symbol	Test Condition	Quadrant		JST16/JST16i		Unit
				C	B	
IGT	VD=12V RL=33Ω	I-II-III IV	MAX.	25 50	50 100	mA
VGT		ALL	MAX.	1.3		V
VGD	VD=VDRM RL=3.3KΩ Tj =125°C	ALL	MIN.	0.2		V
IL	IG=1.2IGT	I-III-IV	MAX.	40	60	mA
		II	MAX.	80	120	mA
IH	IT =500mA		MAX.	25	50	mA
dV/dt	VD=67%VDRM gate open Tj=125°C		MIN.	200	400	V/μs
(dV/dt)c	(dl/dt)c=7A/ms Tj=125°C		MIN.	5	10	V/μs

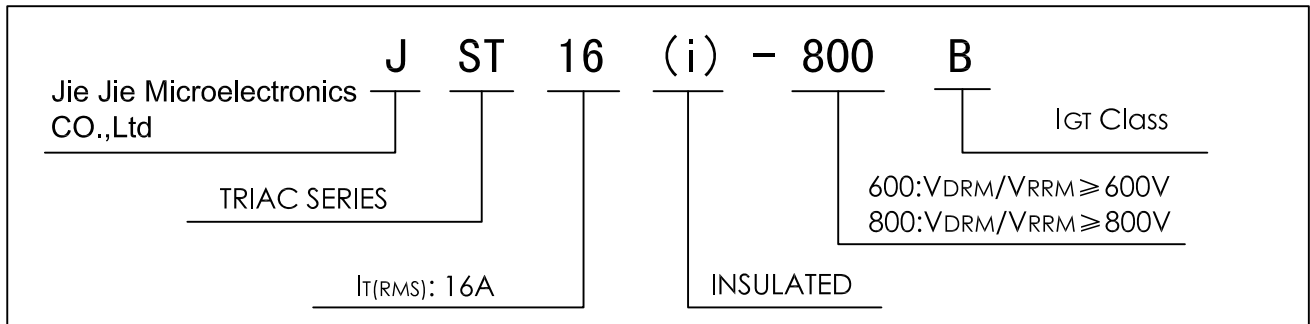
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =22.5A, t _p =380μs	T _j =25°C	1.55	V
I _{DRM} I _{RRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	5	μA
		T _j =125°C	2	mA

THERMAL RESISTANCES

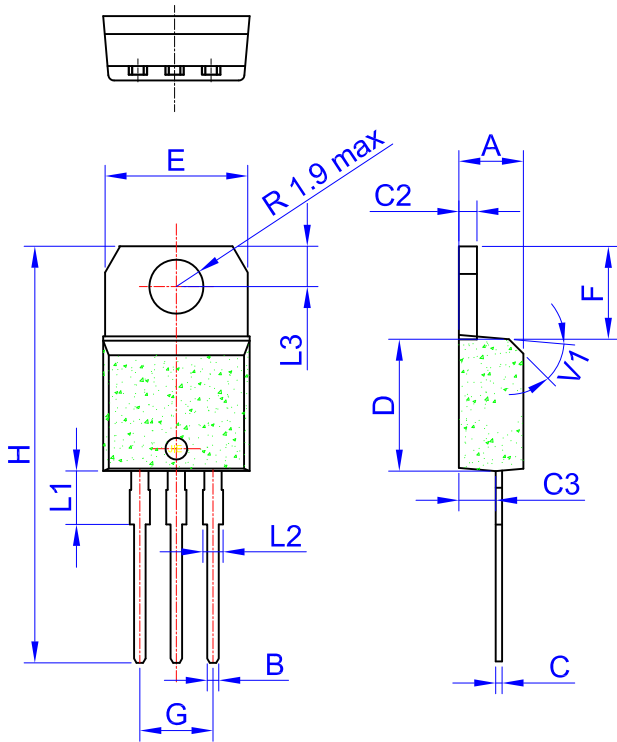
Symbol	Parameter		Value	Unit
R _{th} (J-C)	Junction to Case(AC)	D ² PAK/TO-220AB	1.2	°C/W
		TO-220AB INSULATED	2.1	

ORDERING INFORMATION



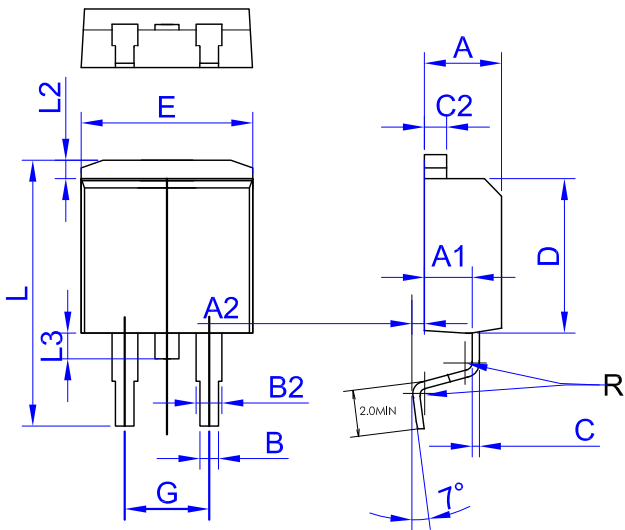
PACKAGE MECHANICAL DATA

TO-220AB



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	0.49		0.70	0.019		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	10		10.4	0.393		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°	

D²PAK



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.60	0.169		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
B	0.70		0.93	0.027		0.037
B2	1.25	1.40		0.048	0.055	
C	0.45		0.60	0.017		0.024
C2	1.21		1.36	0.047		0.054
D	8.95		9.35	0.352		0.368
E	10.0		10.28	0.393		0.405
G	4.88		5.28	0.192		0.208
L	15.0		15.85	0.590		0.624
L2	1.27		1.40	0.050		0.055
L3	1.40		1.75	0.055		0.069
R		0.40			0.016	

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

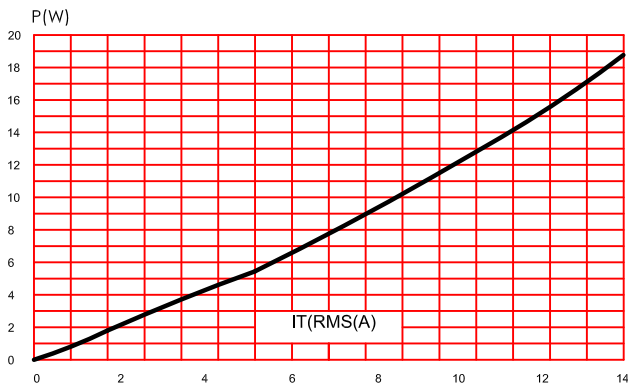


FIG.2: RMS on-state current versus case temperature(full cycle)

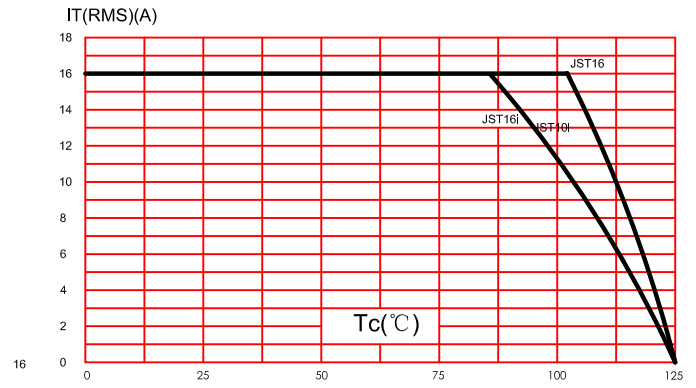


FIG.3: On-state characteristics (maximum values)

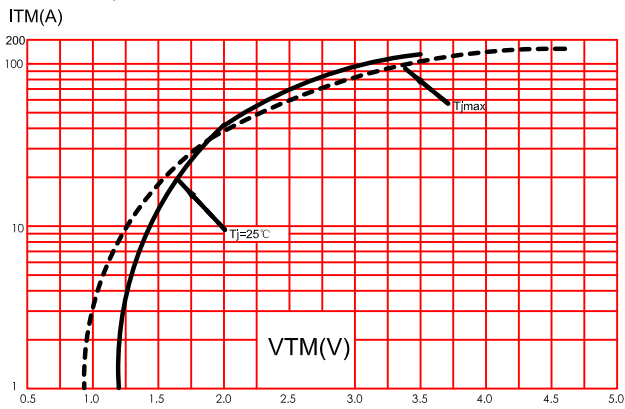


FIG.4: Surge peak on-state current versus number of cycles.

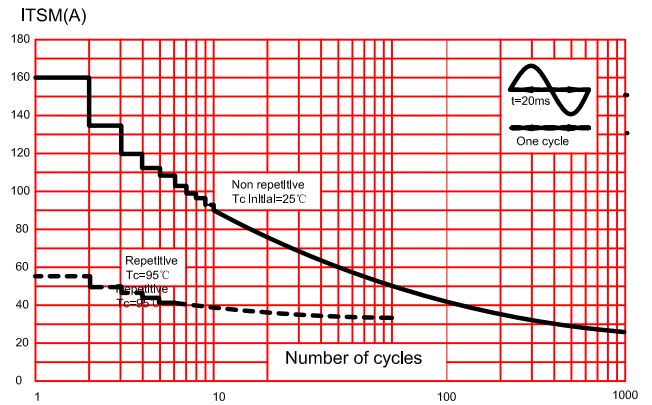


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t

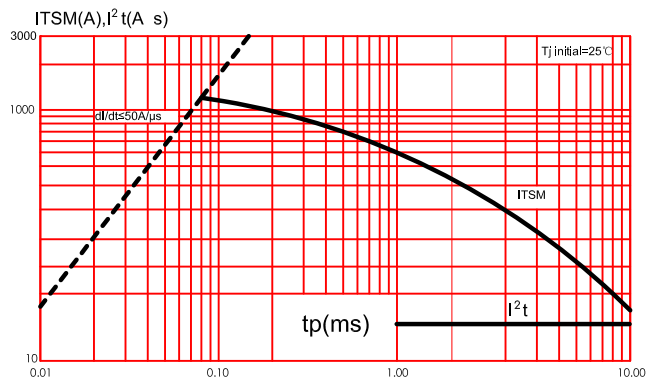


FIG.6: Relative variation of gate trigger current, holding current and latching current versus junction temperature(typical values).

