



JST06/JST06i Series 6A TRIACs

DESCRIPTION:

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

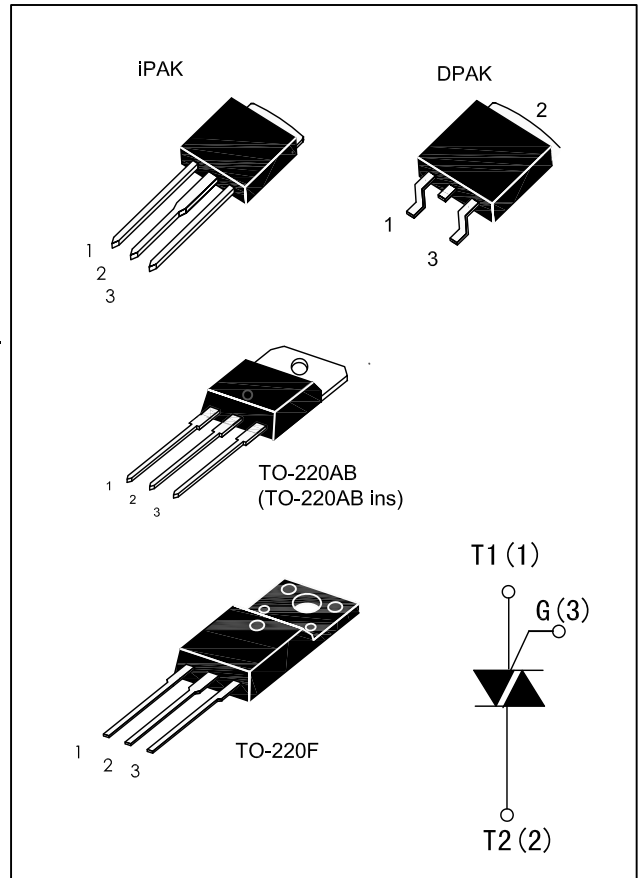
JST06/JST06i series triacs is suitable for general purpose AC switching. They can be used as an ON/OFF Function in applications such as static relays, heating regulation, induction motor starting circuits... or for phase control operation light dimmers, motorspeed controllers.

JST06/JST06i- $\times\times\times$ TW、 $\times\times\times$ SW、 $\times\times\times$ CW、 $\times\times\times$ BW are 3 Quadrants triacs, They are specially recommended for use on inductive loads.

The T0-220AB ins/T0-220F Family are 2500VRMS insulating voltage.

MAIN FEATURES

Symbol	Value	Unit
IT(RMS)	6	A
VDRM/VRRM	600 and 800	V
IGT(Q1)	5 to 50	mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	Tstg	-40 to +150	°C	
Operating junction temperature range	Tj	-40 to +125	°C	
Repetitive Peak Off-state Voltage	VDRM	Tj=25°C	600and800	
Repetitive Peak Reverse Voltage		Tj=25°C		600and800
Non repetitive Surge Peak Off-state Voltage	VDSM	tp=10ms, Tj=25°C	700and900	
Non repetitive Peak Reverse Voltage				VRSM
RMS on-state current (full sine wave)	IT(RMS)	DPAK iPAK Tc=100°C	6	
		TO-220AB Tc=100°C		A
		TO-220AB ins/TO-220F Tc=95°C		
Non repetitive surge peak on-state current (full cycle, Tj=25°C)	ITSM	f = 60 Hz t=16.7ms	60	
		f = 50 Hz t=20ms	63	
I ² t Value for fusing	I ² t	tp=10ms	21	
Critical rate of rise of on-state current IG=2×IGT, tr≤100 ns, f=120Hz, Tj=125°C	di/dt		50	
Peak gate current tp=20us, Tj=125°C	IGM		4	
Average gate power dissipation Tj=125°C	PG(AV)		1	

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

● 3 Quadrants

Symbol	Test Condition	Quadrant		JST06/JST06i				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 T _j =125°C	I-II-III	MIN.		0.2			V
I _L	I _G =1.2I _{GT}	I-III	MAX.	10	25	50	70	mA
		II	MAX.	15	30	60	80	mA
I _H	I _T =500mA		MAX.	10	15	35	50	mA
dV/dt	V _D =67%V _{DRM} gate open T _j =125°C		MIN.	20	40	400	1000	V/μs
(dI/dt) _c	(dV/dt) _c =0.1V/μs T _j =125°C		MIN.	3.4	6.5	---	---	A/ms
	(dV/dt) _c =10V/μs T _j =125°C			1.3	2.9	---	---	
	Without snubber T _j =125°C				---	3.5	5.3	

● 4 Quadrants

Symbol	Test Condition	Quadrant		JST06/JST06i						Unit
				T	D	S	A	C	B	
I _{GT}	V _D =12V R _L =33Ω	I-II-III IV	MAX.	5 5	5 10	10 10	10 25	25 50	50 100	mA
V _{GT}		ALL	MAX.	1.5						V
V _{GD}	V _D =V _{DRM} R _L =3.3KΩ T _j =125°C	ALL	MIN.	0.2						V
I _L	I _G =1.2I _{GT}	I-III-IV	MAX.	10	10	20	20	40	50	mA
		II	MAX.	20	20	40	40	80	100	mA
I _H	I _T =500mA		MAX.	15	15	25	25	25	50	mA
dV/dt	V _D =67%V _{DRM} gate open T _j =125°C		MIN.	5	5	10	10	200	400	V/μs
(dV/dt) _c	(dI/dt) _c =1.8A/ms T _j =125°C		MIN.	1	1	5	5	5	10	V/μs

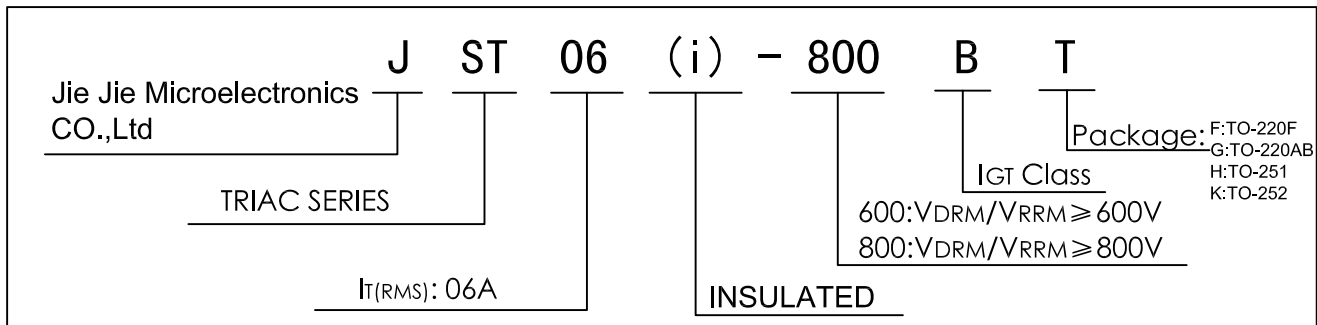
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =5.5A, 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	1	mA

THERMAL RESISTANCES

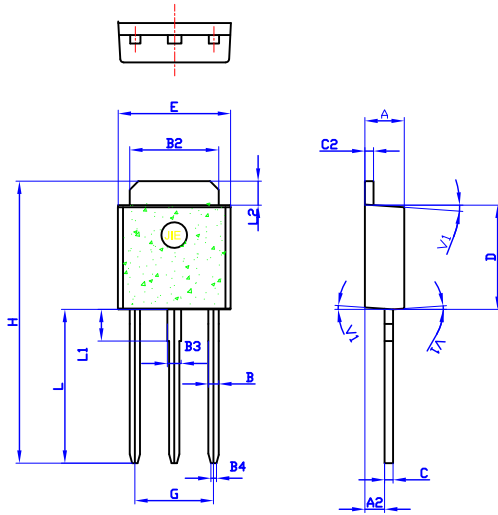
Symbol	Parameter		Value	Unit
R _{th} (J -C)	Junction to Case(AC)	DPAK/iPAK/TO-220AB	2.4	°C/W
		TO-220F/TO-220AB ins	3.3	

ORDERING INFORMATION



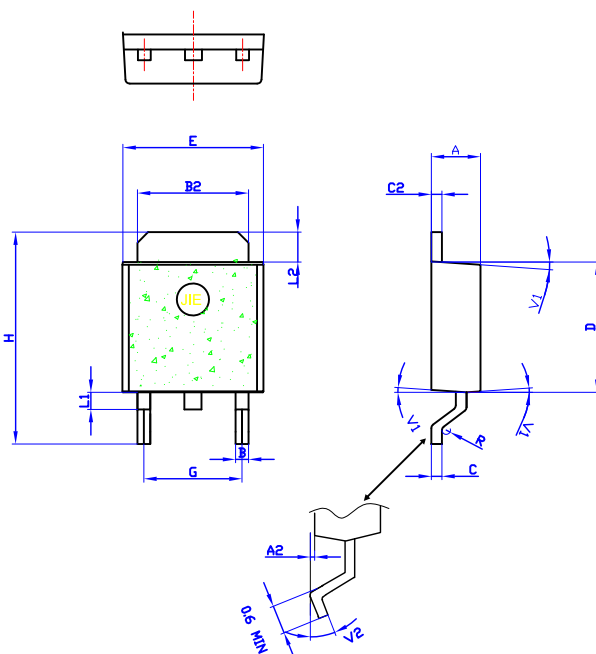
PACKAGE MECHANICAL DATA

iPAK



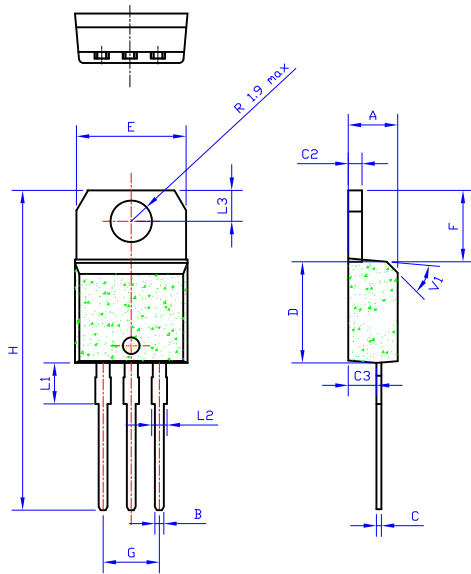
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.9		1.1	0.035		0.043
B	0.55		0.65	0.021		0.026
B2	5.1		5.4	0.200		0.212
B3	0.76		0.85	0.030		0.033
B4		0.32			0.013	
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		6.7	0.252		0.264
G	4.4		4.7	0.173		0.185
H	16.0		16.7	0.630		0.658
L	8.9		9.4	0.350		0.370
L1	1.8		1.9	0.071		0.075
L2	1.37		1.5	0.054		0.059
V1		4°			4°	

DPAK



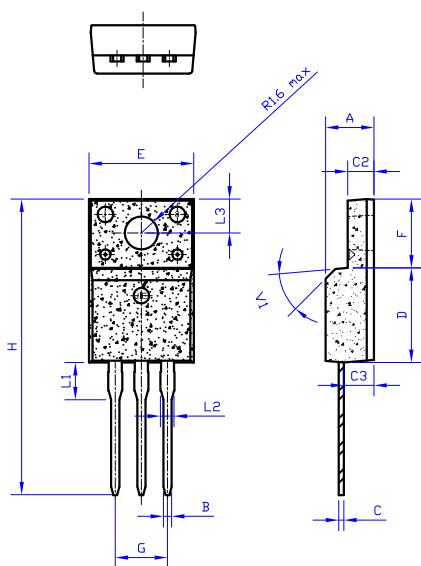
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.021		0.026
B2	5.1		5.4	0.200		0.212
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		6.7	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.1	0.368		0.397
L1		0.8			0.031	
L2	1.37		1.5	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°

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	0.46		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°	

TO-220F



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.8	0.173		0.189
B	0.74	0.8	0.83	0.029	0.031	0.033
C	0.5		0.75	0.020		0.030
C2	2.4		2.7	0.094		0.106
C3	2.6		3.0	0.102		0.118
D	8.8		9.3	0.346		0.367
E	9.7		10.3	0.382		0.406
F	6.4		6.8	0.252		0.268
G	5.0		5.2	0.197		0.205
H	28.0		29.8	11.0		11.7
L1		3.63			0.143	
L2	1.14		1.7	0.044		0.067
L3		3.3			0.130	
V1		40°			40°	

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

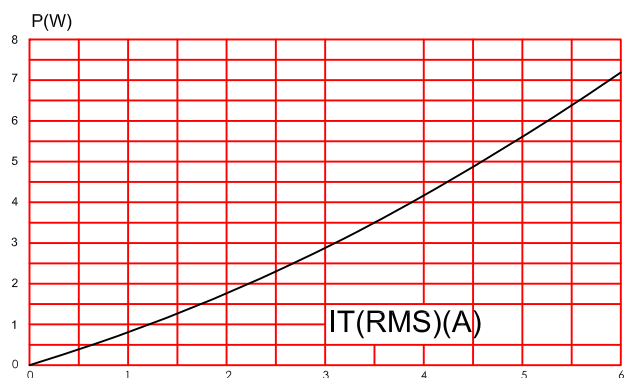


FIG.2: RMS on-state current versus case temperature(full cycle)

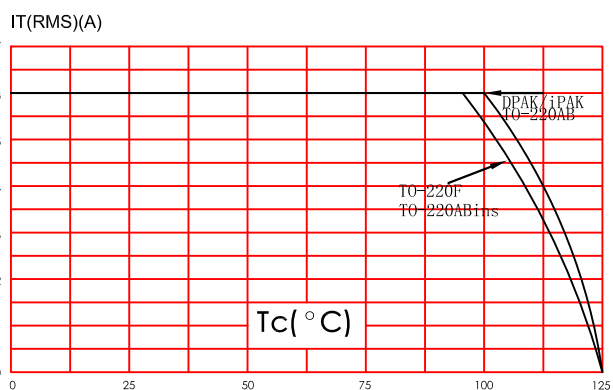


FIG.3: On-state characteristics (maximum values)

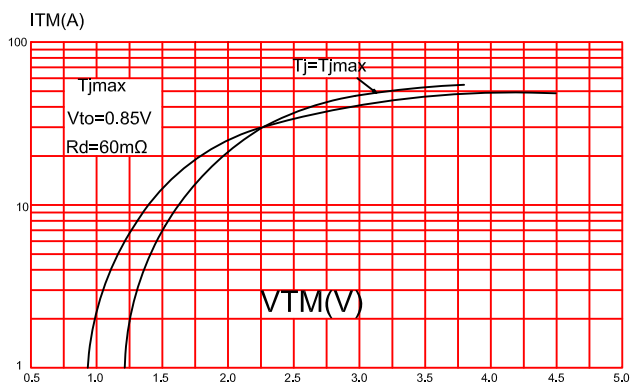


FIG.4: Surge peak on-state current versus number of cycles

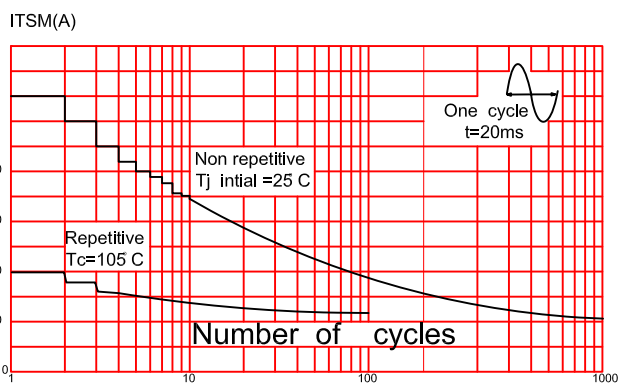


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of $I^2 t$.

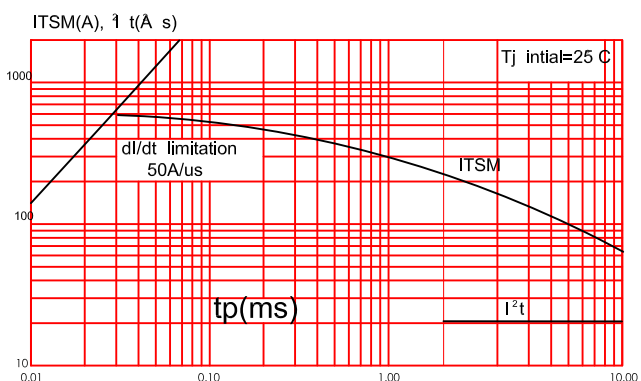


FIG.6: Relative variations of gate trigg current, holding current and latching current versus junction temperature(typical values)

