



JST06/JST06i Series 6A TRIACs

DESCRIPTION:

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

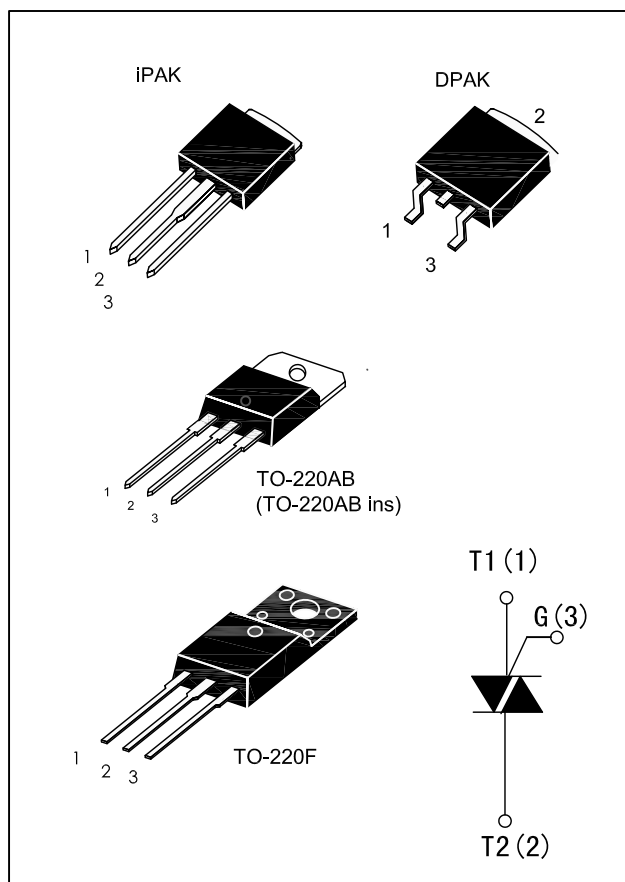
JST06/JST06i series triacs is suitable for general purpose AC switching. They can be used as an ON/OFF Function in applications such as static relays, heating regulation, induction motor starting circuits... or for phase control operation light dimmers, motorspeed controllers.

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	Tj=25°C	VDRM	600and800	V
Repetitive Peak Reverse Voltage	Tj=25°C	VRRM	600and800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms, Tj=25°C	VDSM	700and900	V
Non repetitive Peak Reverse Voltage		VRSM	700and900	
RMS on-state current (full sine wave)	DPAK iPAK Tc=100°C	IT(RMS)	6	A
	TO-220AB Tc=100°C			
	TO-220AB ins/TO-220F Tc=95°C			
Non repetitive surge peak on-state current (full cycle, Tj=25°C)	f = 60 Hz t=16.7ms	ITSM	60	A
	f = 50 Hz t=20ms		63	
I²t Value for fusing	tp=10ms	I²t	21	A²s
Critical rate of rise of on-state current IG=2×IGT, tr≤100 ns, f=120Hz, Tj=125°C		di/dt	50	A/μs
Peak gate current	tp=20us, Tj=125°C	IGM	4	A
Average gate power dissipation	Tj=125°C	PG(AV)	1	W

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)
 3 Quadrants

Symbol	Test Condition	Quadrant		JST06/JST06i				Unit
				TW	SW	CW	BW	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I-II-III	MAX.	5	10	35	50	mA
V_{GT}		I-II-III	MAX.		1.3			V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3\text{K}\Omega$ $T_j=125^{\circ}\text{C}$	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	$I_T=500\text{mA}$		MAX.	10	15	35	50	mA
dV/dt	$V_D=67\%V_{DRM}$ gate open $T_j=125^{\circ}\text{C}$		MIN.	20	40	400	1000	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=0.1\text{V}/\mu\text{s}$ $T_j=125^{\circ}\text{C}$	MIN.		3.4	6.5	---	---	A/mS
	$(dV/dt)_c=10\text{V}/\mu\text{s}$ $T_j=125^{\circ}\text{C}$			1.3	2.9	---	---	
	Without snubber $T_j=125^{\circ}\text{C}$				---	3.5	5.3	

 4 Quadrants

Symbol	Test Condition	Quadrant		JST06/JST06i						Unit
				T	D	S	A	C	B	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	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}	$V_D=V_{DRM}$ $R_L=3.3\text{K}\Omega$ $T_j=125^{\circ}\text{C}$	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	$I_T=500\text{mA}$		MAX.	15	15	25	25	25	50	mA
dV/dt	$V_D=67\%V_{DRM}$ gate open $T_j=125^{\circ}\text{C}$		MIN.	5	5	10	10	200	400	V/ μs
$(dV/dt)_c$	$(dI/dt)_c=1.8\text{A/ms}$ $T_j=125^{\circ}\text{C}$		MIN.	1	1	5	5	5	10	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=5.5A, t_p=380\mu s$	$T_j=25^{\circ}C$	1.55	V
I_{DRM} I_{RRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}C$	5	μA
		$T_j=125^{\circ}C$	1	mA

THERMAL RESISTANCES

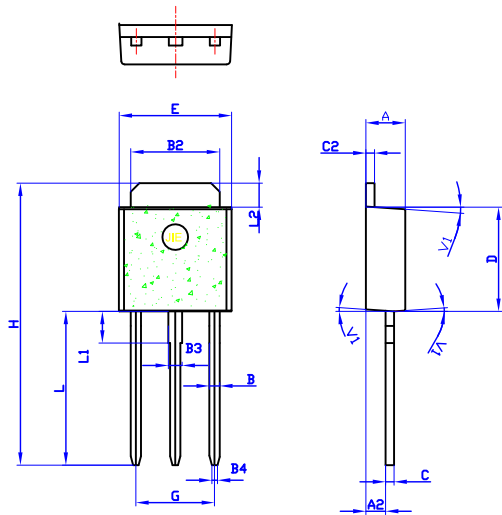
Symbol	Parameter		Value	Unit
$R_{th}(J-C)$	Junction to Case(AC)	DPAK/iPAK/TO-220AB	2.4	$^{\circ}C/W$
		TO-220F/TO-220AB ins	3.3	

ORDERING INFORMATION

Jie Jie Microelectronics CO.,Ltd TRIAC SERIES $I_{T(RMS)}: 06A$						
J	ST	06	(i)	- 800	B	T
				Package: F:TO-220F G:TO-220AB H:TO-251 K:TO-252		
				IGT Class 600:$V_{DRM}/V_{RRM} \geq 600V$ 800:$V_{DRM}/V_{RRM} \geq 800V$		
				INSULATED		

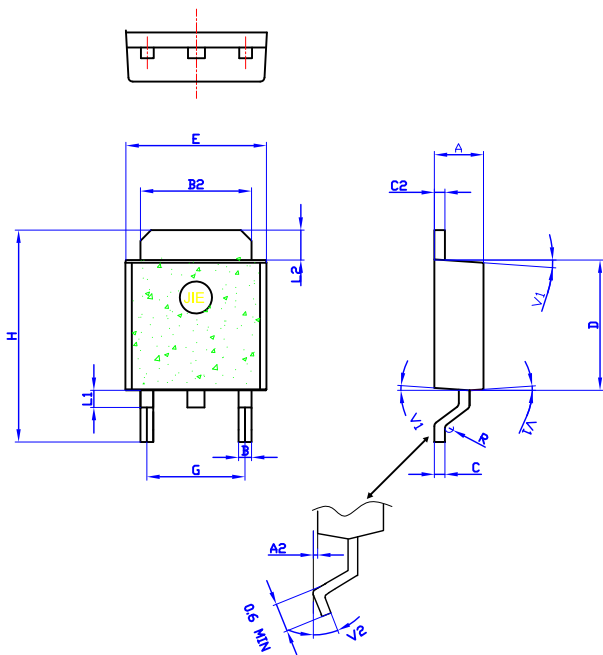
PACKAGE MECHANICAL DATA

iPAK



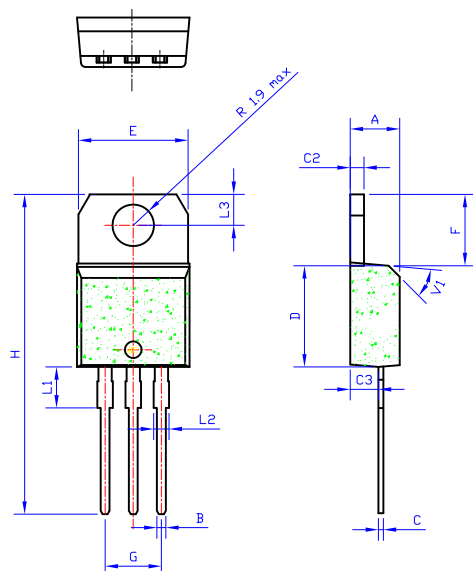
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.9		1.1	0.035		0.043
B	0.55		0.65	0.021		0.026
B2	5.1		5.4	0.200		0.212
B3	0.76		0.85	0.030		0.033
B4		0.32			0.013	
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		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



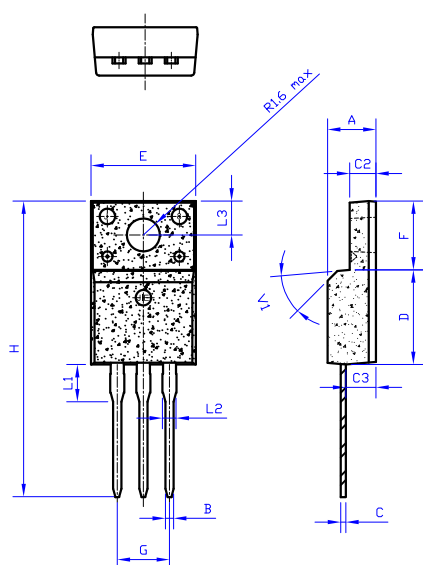
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.2		2.4	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.021		0.026
B2	5.1		5.4	0.200		0.212
C	0.45		0.62	0.017		0.024
C2	0.48		0.62	0.019		0.024
D	6		6.2	0.236		0.244
E	6.4		6.7	0.252		0.264
G	4.40		4.70	0.173		0.185
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)

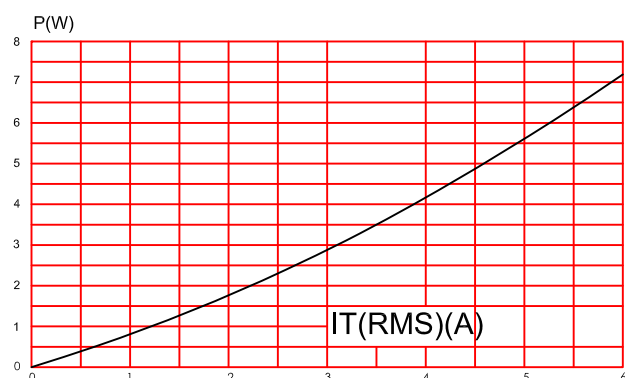


FIG.2: RMS on-state current versus case temperature(full cycle)

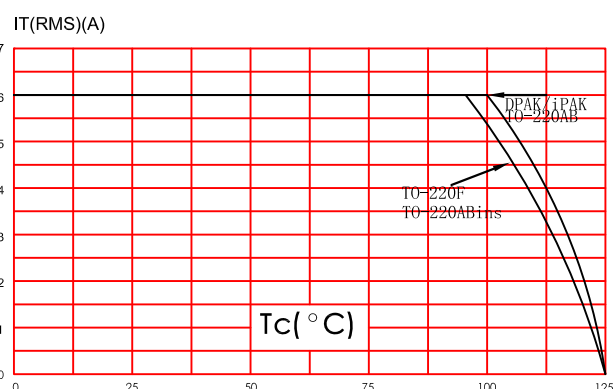


FIG.3: On-state characteristics (maximum values)

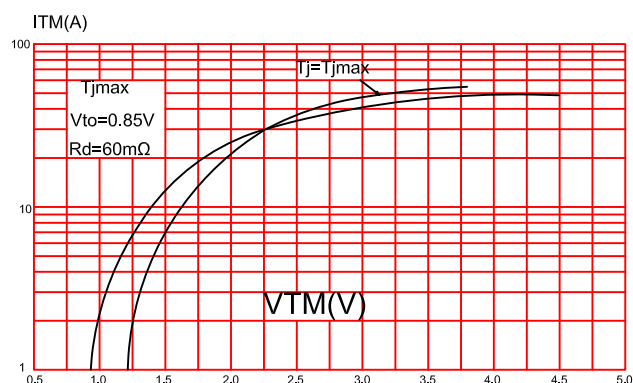


FIG.4: Surge peak on-state current versus number of cycles

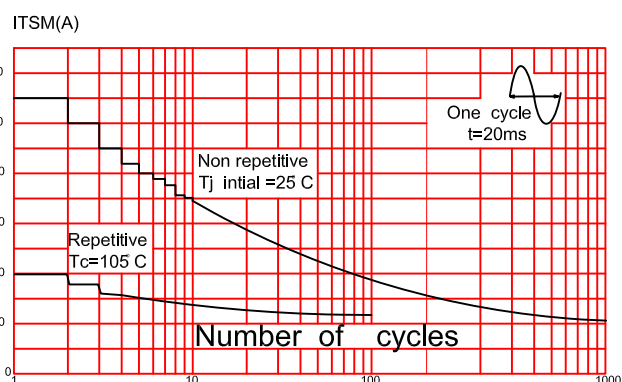


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t .

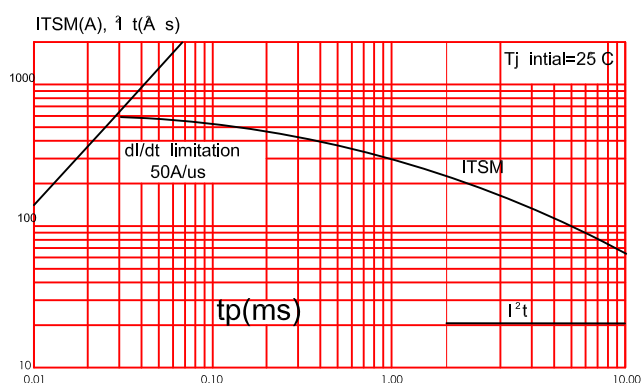


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature(typical values)

