



JST16 Series 16A TRIACs

Rev.6.0

DESCRIPTION:

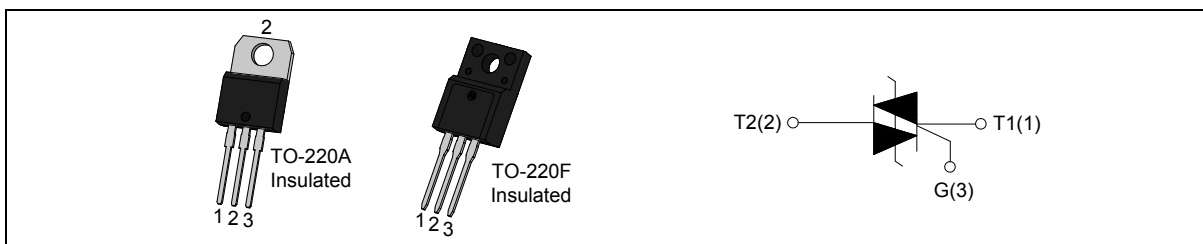
JST16 series provide high dv/dt rate with strong resistance to electromagnetic interface.

They are especially recommended for use on home appliances such as motor control of washing machine.

From all three terminals to external heatsink, JST16i provides insulation voltage rated at 2500V RMS, and JST16X provides insulation voltage rated at 2000V RMS, complying with UL standards (File ref: E252906). Packages TO-220A&F are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	800	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	°C
Operating junction temperature range	T_j	-40-125	°C
Repetitive peak off-state voltage($T_j=25^{\circ}C$)	V_{DRM}	800	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)	V_{RRM}	800	V
Non repetitive surge peak Off-state voltage	V_{DSM}	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage	V_{RSM}	$V_{RRM} + 100$	V
RMS on-state current	TO-220A(Ins)/ TO-220F(Ins) ($T_c=75^{\circ}C$)	$I_{T(RMS)}$	16 A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	160	A

I ² t value for fusing (tp=10ms)	I ² t	128	A ² s
Rate of rise of on-state current (I _G =2×I _{GT})	Di/dt	100	A/μs
Peak gate current	I _{GM}	4	A
Average gate power dissipation	P _{G(AV)}	1	W
Peak gate power	P _{GM}	5	W

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

3 Quadrants

Symbol	Test Condition	Quadrant		Value	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} T _j =125°C R _L =3.3KΩ	I - II -III	MIN	0.2	V
I _L	I _G =1.2I _{GT}	I -III	MAX	70	mA
		II		120	
I _H	I _T =100Ma		MAX	60	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	1000	V/μs
(dI/dt) _c	Without snubber T _j =125°C		MIN	14	A/ms

4 Quadrants

Symbol	Test Condition	Quadrant		Value	Unit
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	25	mA
		IV		50	
V _{GT}		I - II -III	MAX	1.3	V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	I - II -III	MIN	0.2	V
I _L	I _G =1.2I _{GT}	I -III-IV	MAX	50	mA
		II		80	
I _H	I _T =100mA		MAX	40	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	200	V/μs
(dV/dt) _c	(dI/dt) _c =7 A/ms T _j =125°C		MIN	5	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=24A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.5	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=125^\circ C$	0.5	mA

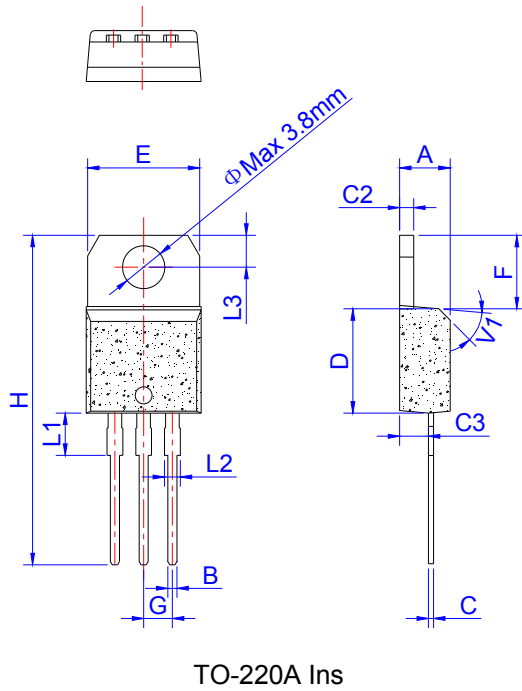
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A Ins	2.1	$^\circ C/W$
		TO-220F Ins	2.3	

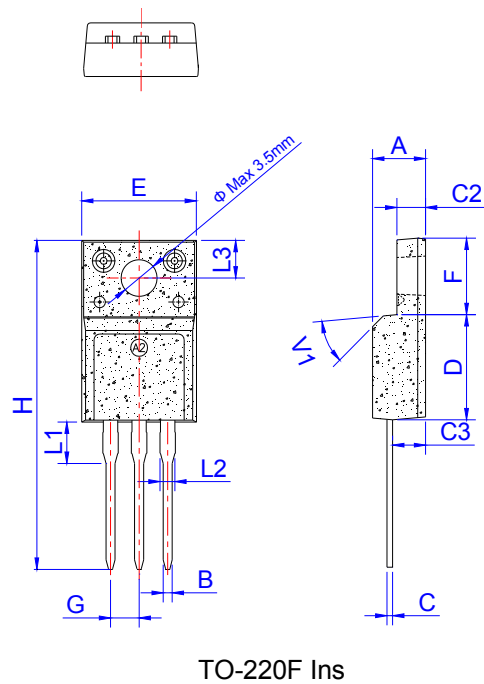
ORDERING INFORMATION

<p>J JieJie Microelectronics Co.,Ltd</p>	<p>ST Triacs</p>	<p>16 $I_{T(RMS)}:16A$</p>	<p>i i : TO-220A Ins X: TO-220F Ins</p>	<p>-800 800:$V_{DRM} / V_{RRM} \geq 800V$</p>	<p>BW BW:$I_{GT1-3} \leq 50mA$ C:$I_{GT1-3} \leq 25mA, I_{GT4} \leq 50mA$</p>
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PACKAGE MECHANICAL DATA

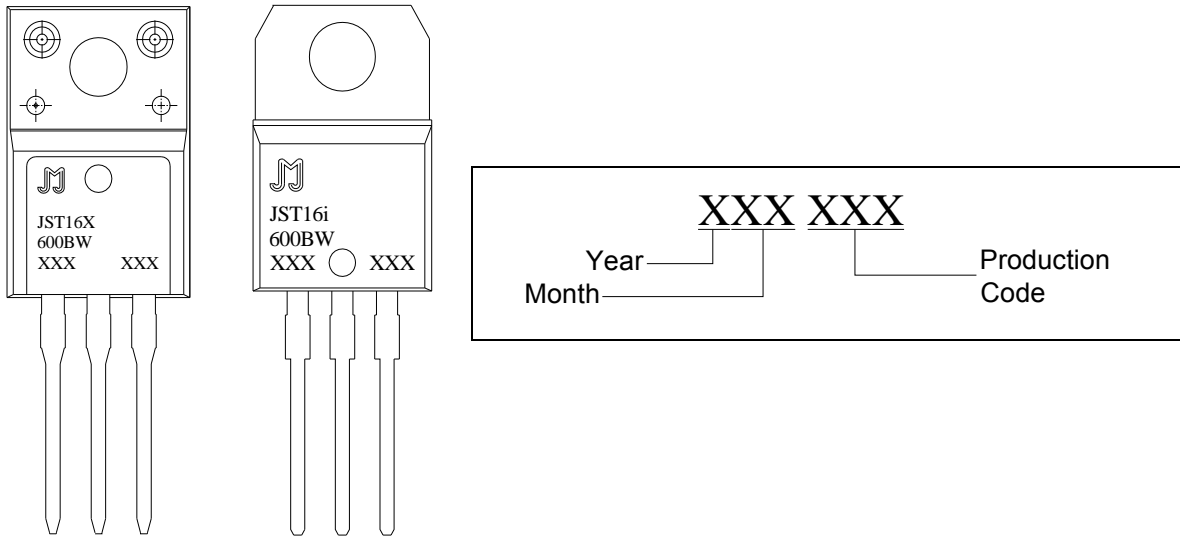


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

MARKING



PACKAGE INFORMATION

PACKAGE	WEIGHT (PER PCS)	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	2.308g	TUBE	50	1,000	8,000
TO-220F	2.093g	TUBE	50	1,000	8,000

FIG.1: Maximum power dissipation versus RMS on-state current

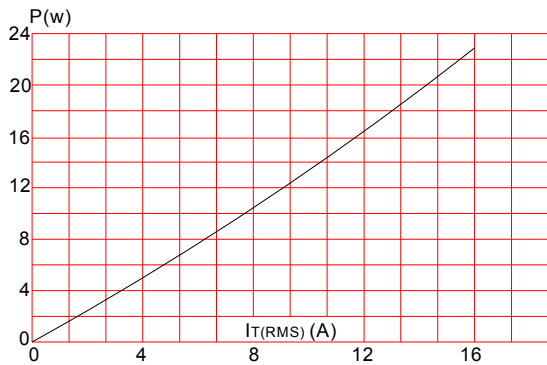


FIG.2: RMS on-state current versus case temperature

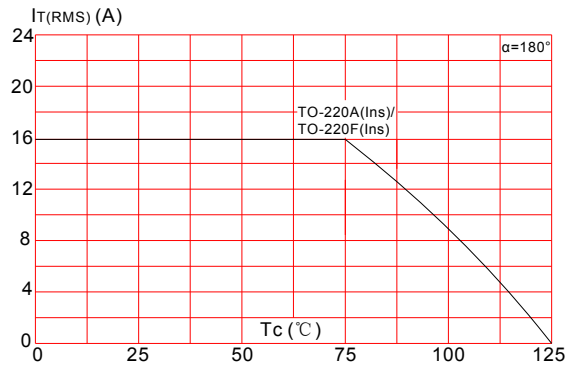


FIG.3: Surge peak on-state current versus number of cycles

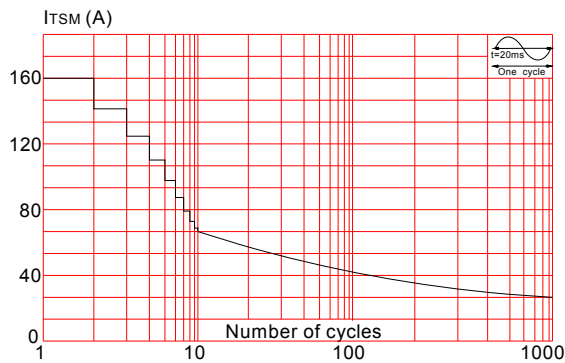


FIG.4: On-state characteristics (maximum values)

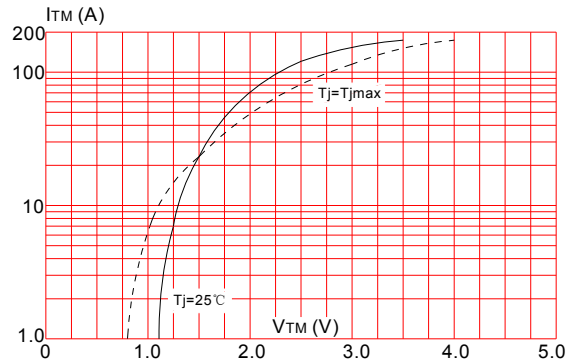


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of $\int i^2 t$ ($di/dt < 100\text{A}/\mu\text{s}$)

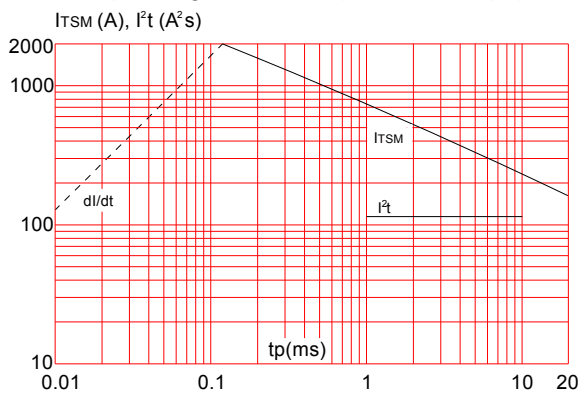
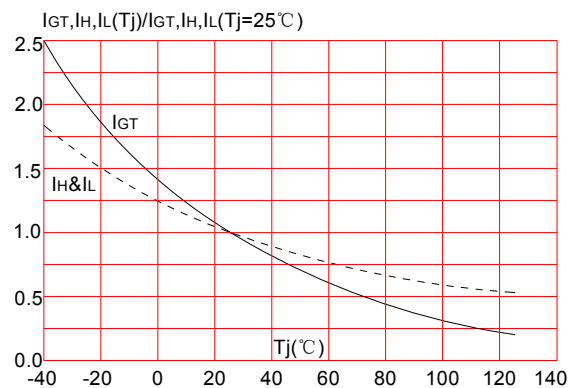



FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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