



JST16 Series 16A TRIACs

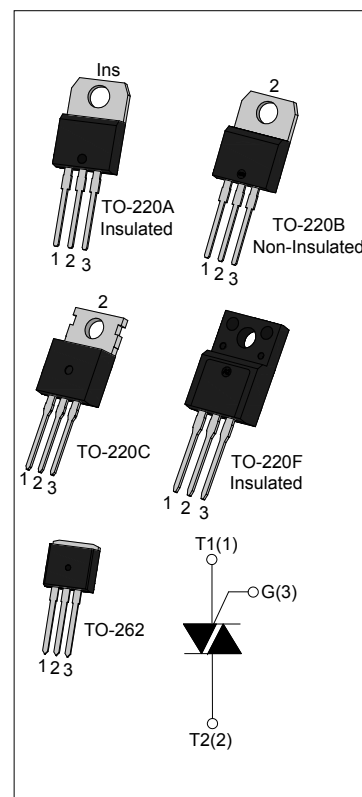
Rev.6.0

DESCRIPTION:

With high ability to withstand the shock loading of large current, JST16 series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load. From all three terminals to external heatsink, JST16A provides a rated insulation voltage of 2500 V_{RMS}, and JST16F provides a rated insulation voltage of 2000V_{RMS}, complying with UL standards (File ref: E252906). All the packages are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	600/800/1200	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 ($T_j=25^{\circ}\text{C}$)		V_{DRM}	600/800/1200	V
Repetitive peak reverse voltage ($T_j=25^{\circ}\text{C}$)		V_{RRM}	600/800/1200	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) ($T_c=75^{\circ}\text{C}$)	$I_{T(RMS)}$	16	A
	TO-220B(Non-Ins)/ TO-220C ($T_c=95^{\circ}\text{C}$)			
	TO-262 ($T_c=70^{\circ}\text{C}$)			
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)		I_{TSM}	160	A

I ² t value for fusing (tp=10ms)	I ² t	128	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT})	dI/dt	50	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
				BW	CW	SW	TW	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	50	35	10	5	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	50	30	15	mA
		II		80	60	40	20	
I _H	I _T =100mA		MAX	60	40	25	15	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	1000	500	200	100	V/μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				B	C	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	50	25	mA
		IV		70	50	
V _{GT}		ALL	MAX	1.5		V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	ALL	MIN	0.2		V
I _L	I _G =1.2I _{GT}	I -III-IV	MAX	70	50	mA
		II		100	80	
I _H	I _T =100mA		MAX	60	40	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	500	200	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)			Unit
			-600V	-800V	-1200V	
V_{TM}	$I_{TM}=22.5A$ $t_p=380\mu s$	$T_j=25^{\circ}C$	1.5			V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}C$	5	5	10	μA
I_{RRM}		$T_j=125^{\circ}C$	1	1	2	mA

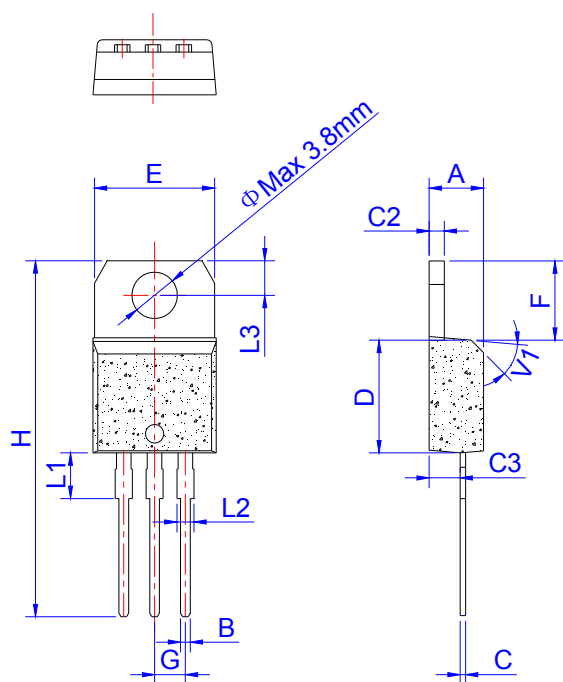
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.1	$^{\circ}C/W$
		TO-220B(Non-Ins)/ TO-220C	1.2	
		TO-220F(Ins)	2.3	
		TO-262	2.5	

ORDERING INFORMATION

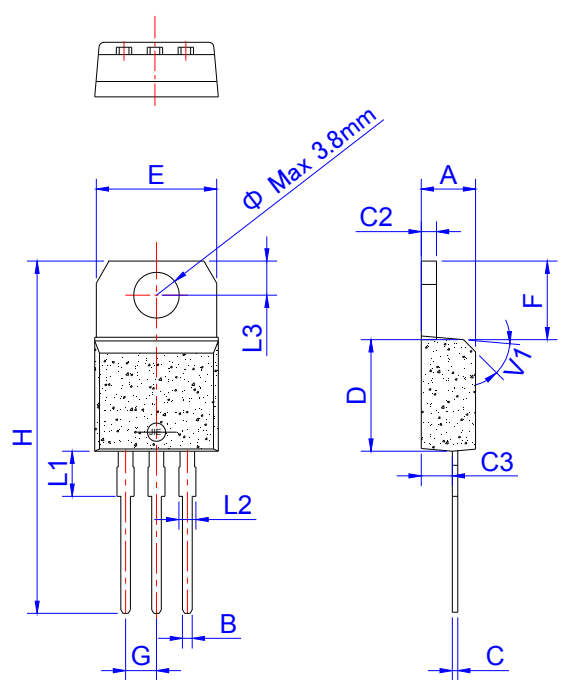
JieJie Microelectronics Co.,Ltd	J	ST	16	A	-600	BW
	Triacs	$I_{T(RMS)}:16A$	D:TO-262 C:TO-220C A:TO-220A(Ins) F:TO-220F(Ins) B:TO-220B(Non-Ins)		600: $V_{DRM}/V_{RRM}\geq 600V$ 800: $V_{DRM}/V_{RRM}\geq 800V$ 1200: $V_{DRM}/V_{RRM}\geq 1200V$	BW: $I_{GT1-3}\leq 50mA$ CW: $I_{GT1-3}\leq 35mA$ SW: $I_{GT1-3}\leq 10mA$ TW: $I_{GT1-3}\leq 5mA$ B: $I_{GT1-3}\leq 50mA$ $I_{GT4}\leq 70mA$ C: $I_{GT1-3}\leq 25mA$ $I_{GT4}\leq 50mA$

PACKAGE MECHANICAL DATA



TO-220A Ins

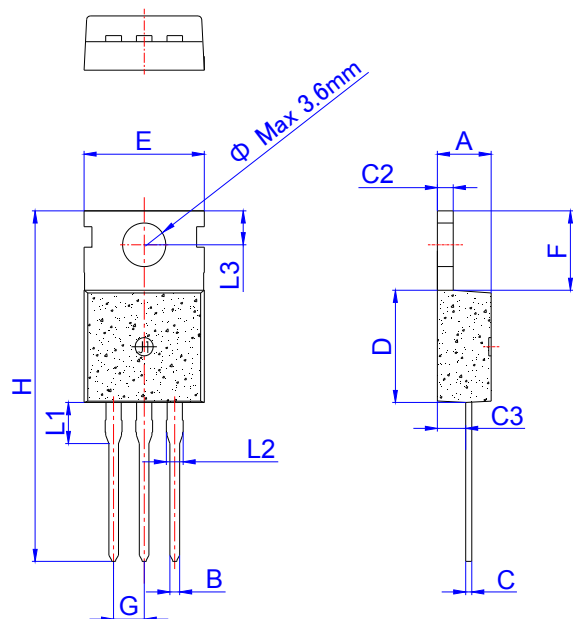
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
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°	



TO-220B Non-Ins

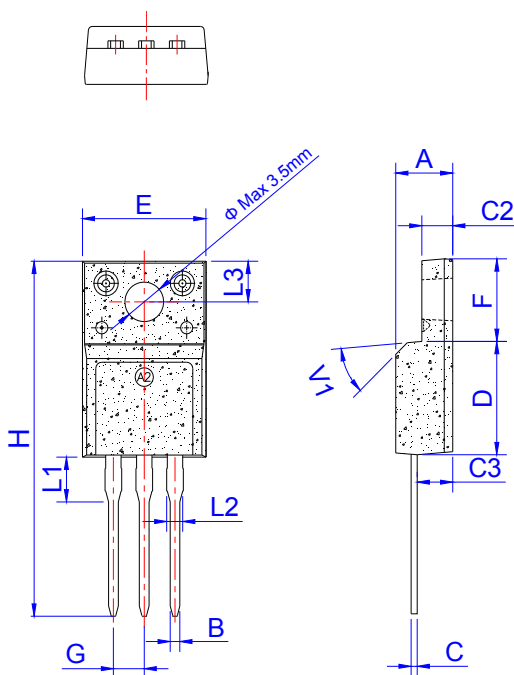
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
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°	

PACKAGE MECHANICAL DATA



TO-220C

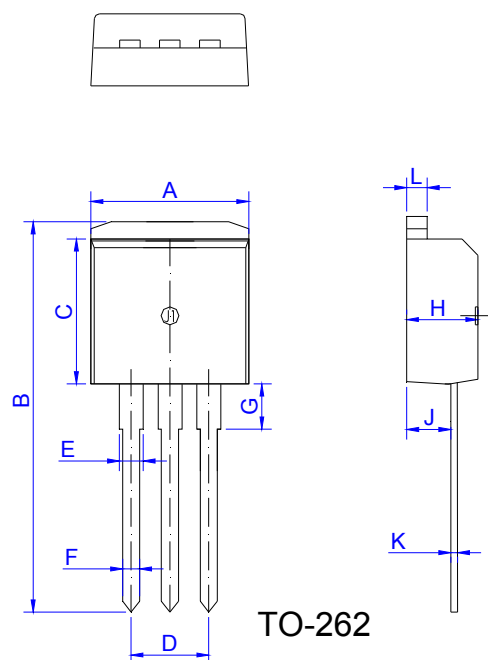
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
Φ		3.6			0.142	



TO-220F Ins

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°	

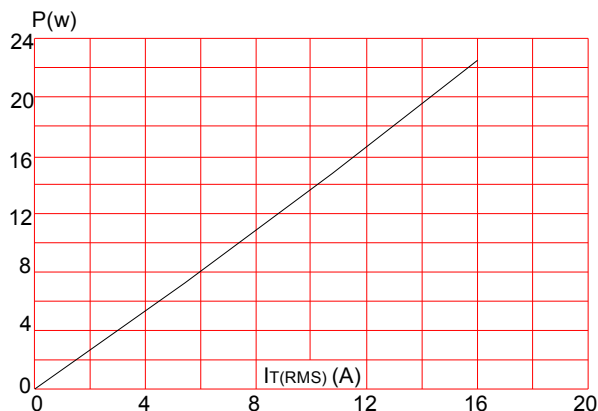
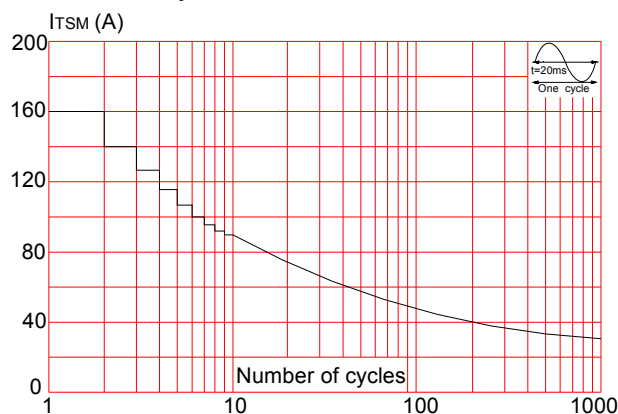
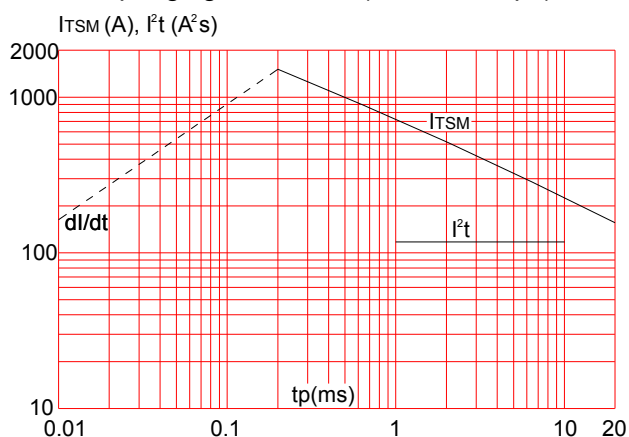
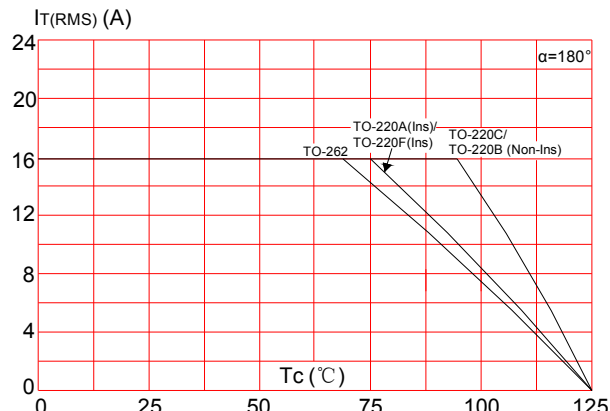
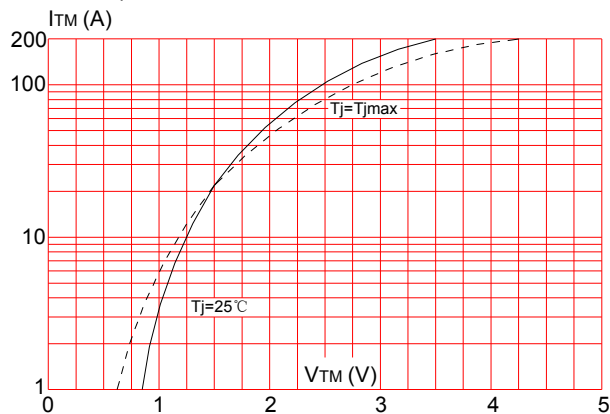
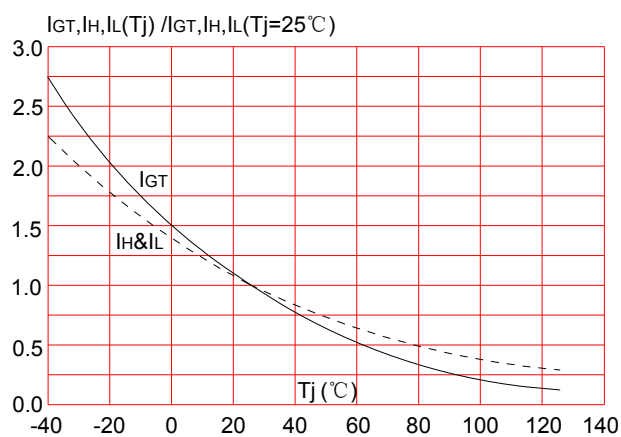
PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.95		10.20	0.392		0.402
B	23.85		24.05	0.939		0.947
C	9.40		9.60	0.370		0.378
D	5.00		5.20	0.197		0.205
E	1.35		1.40	0.053		0.055
F	0.80		0.85	0.031		0.033
G	2.70		3.40	0.106		0.134
H	4.45		4.55	0.175		0.179
J	2.30		2.50	0.091		0.098
K	0.48		0.52	0.019		0.020
L	1.30		1.35	0.051		0.053

PACKAGE INFORMATION

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	TUBE	50	1,000	5,000
TO-220B	TUBE	50	1,000	5,000
TO-220C	TUBE	50	1,000	5,000
TO-220F	TUBE	50	1,000	5,000
TO-262	TUBE	50	1,000	5,000

FIG.1 Maximum power dissipation versus RMS on-state current**FIG.3:** Surge peak on-state current versus number of cycles**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)**FIG.2:** RMS on-state current versus case temperature**FIG.4:** On-state characteristics (maximum values)**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

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