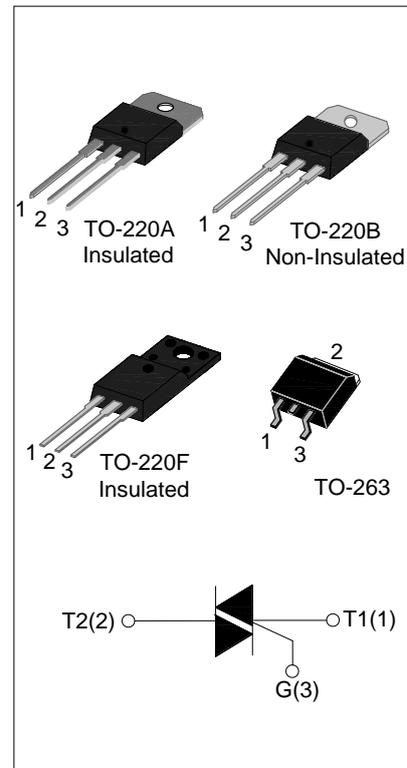




DESCRIPTION:

With high ability to withstand the shock loading of large current, JST24 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, JST24A provide a rated insulation voltage of 2500 V_{RMS}, and JST24F provide a rated insulation voltage of 2000 V_{RMS}, complying with UL standards (File ref: E252906).



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
V_{DRM}/V_{RRM}	600 and 800 and 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) ($T_C=75^\circ\text{C}$)	$I_{T(RMS)}$	25	A
	TO-220B(Non-Ins) ($T_C=90^\circ\text{C}$)			
	TO-263 ($T_C=100^\circ\text{C}$)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	250	A
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	340	A^2s

Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	dI/dt	50	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W

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

V_{DRM}/V_{RRM} : 600/800V

Symbol	Test Condition	Quadrant		JST24-600/800V		Unit
				BW	CW	
I_{GT}	$V_D = 12\text{V } R_L = 33\Omega$	I - II - III	MAX	50	35	mA
V_{GT}		I - II - III	MAX	1.3		V
V_{GD}	$V_D = V_{DRM} T_j = 125^\circ\text{C}$ $R_L = 3.3\text{K}\Omega$	I - II - III	MIN	0.2		V
I_L	$I_G = 1.2I_{GT}$	I - III	MAX	80	70	mA
		II		100	80	
I_H	$I_T = 100\text{mA}$		MAX	75	50	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ\text{C}$		MIN	1000	500	V/ μ s

V_{DRM}/V_{RRM} : 1200V

Symbol	Test Condition	Quadrant		JST24-1200V		Unit
				BW	CW	
I_{GT}	$V_D = 12\text{V } R_L = 33\Omega$	I - II - III	MAX	50	35	mA
V_{GT}		I - II - III	MAX	1.5		V
V_{GD}	$V_D = V_{DRM} T_j = 125^\circ\text{C}$ $R_L = 3.3\text{K}\Omega$	I - II - III	MIN	0.2		V
I_L	$I_G = 1.2I_{GT}$	I - III	MAX	90	70	mA
		II		100	80	
I_H	$I_T = 100\text{mA}$		MAX	80	60	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ\text{C}$		MIN	1500	1000	V/ μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=35A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.5	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=125^\circ C$	3	mA

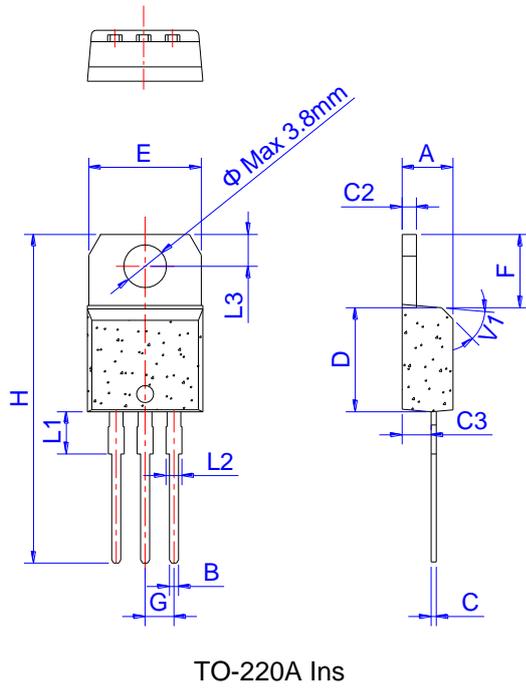
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	1.5	$^\circ C/W$
		TO-220B(Non-Ins)	0.9	
		TO-220F(Ins)	1.7	
		TO-263	0.85	

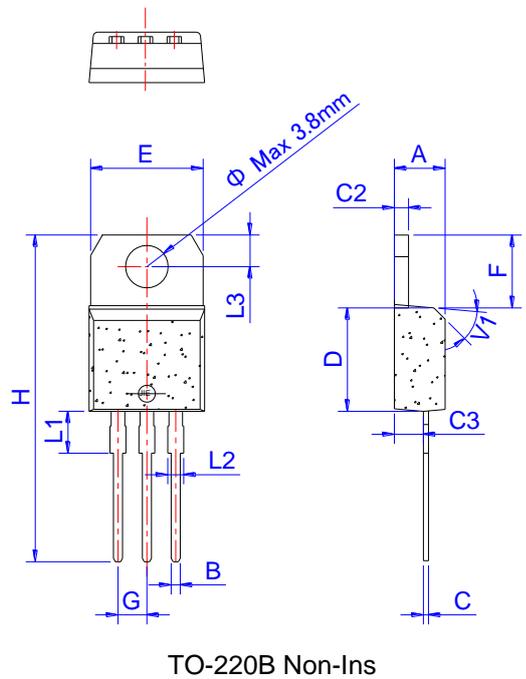
ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p>ST</p> <p>Triacs</p> <p>$I_{T(RMS)}:25A$</p> <p>E:TO-263 A:TO-220A(Ins) F:TO-220F(Ins) B:TO-220B(Non-Ins)</p>	<p>24</p>	<p>A</p>	<p>-600</p> <p>600:$V_{DRM}/V_{RRM} \geq 600V$ 800:$V_{DRM}/V_{RRM} \geq 800V$ 1200:$V_{DRM}/V_{RRM} \geq 1200V$</p>	<p>BW</p> <p>BW:$I_{GT3} \leq 50mA$ CW:$I_{GT3} \leq 35mA$</p>	<p>-US</p>
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PACKAGE MECHANICAL DATA

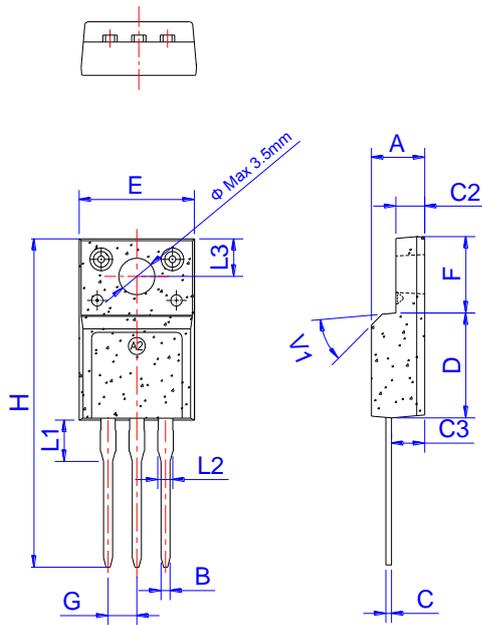


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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



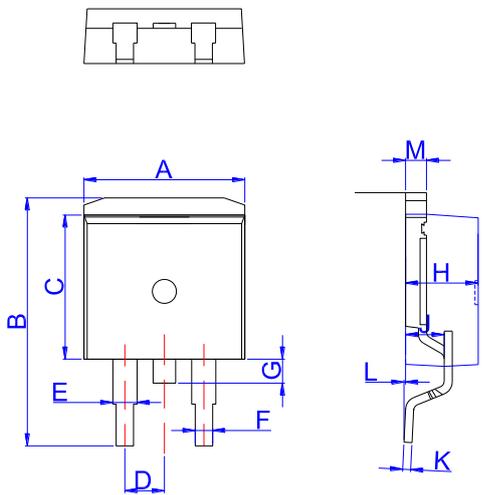
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	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



TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053

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

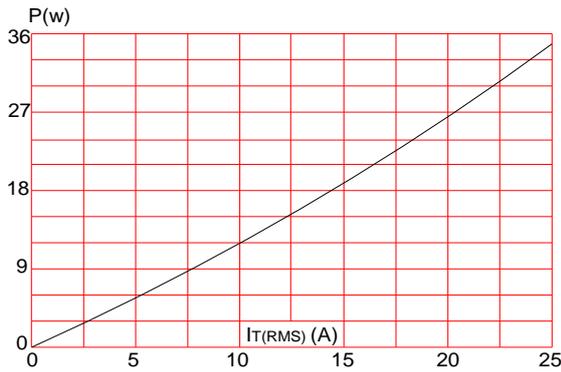


FIG.3: Surge peak on-state current versus number of cycles

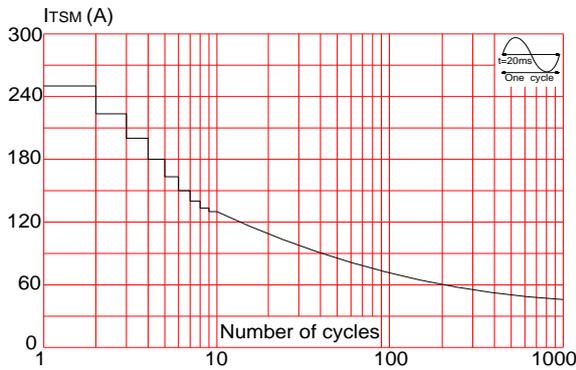


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

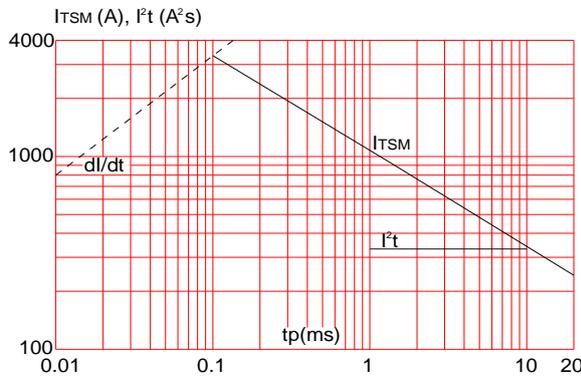


FIG.2: RMS on-state current versus case temperature

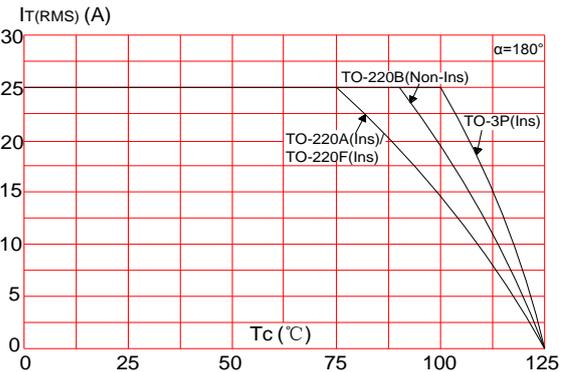


FIG.4: On-state characteristics (maximum values)

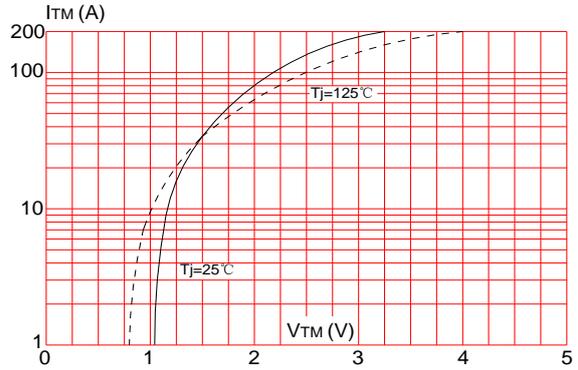
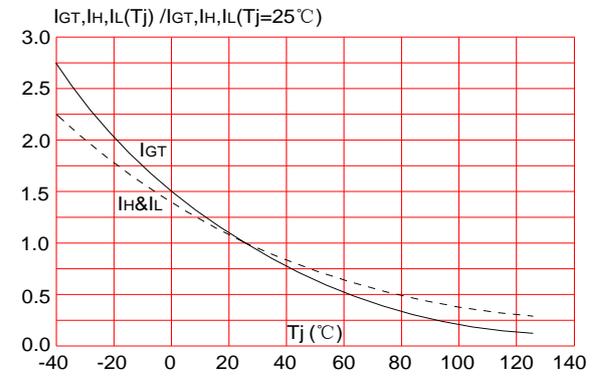


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



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SUGGESTED REPLACEMENTS

<u>ST</u>	<u>NXP</u>	<u>JieJie</u>
T2535-600G		JST24E-600CW
	BTA225B-600B	JST24E-600BW
T2535-800G		JST24E-800CW
	BTA225B-800B	JST24E-800BW
		JST24E-1200CW
T2550-12G		JST24E-1200BW
BTA24-600CW		JST24A-600CW
BTA24-600BW		JST24A-600BW
BTA24-800CW	BTA425Y-800CT	JST24A-800CW
BTA24-800BW	BTA425Y-800BT	JST24A-800BW
		JST24A-1200CW
		JST24A-1200BW
BTB24-600CW		JST24B-600CW
BTB24-600BW	BTA225-600B	JST24B-600BW
BTB24-800CW	BTA225-800C	JST24B-800CW
BTB24-800BW	BTA225-800B	JST24B-800BW
		JST24B-1200CW
T2550-12T		JST24B-1200BW
		JST24F-600CW
		JST24F-600BW
		JST24F-800CW
	BTA425X-800BT	JST24F-800BW
		JST24F-1200CW
		JST24F-1200BW