

## ACJT12 Series 12A TRIACs

Rev.6.0

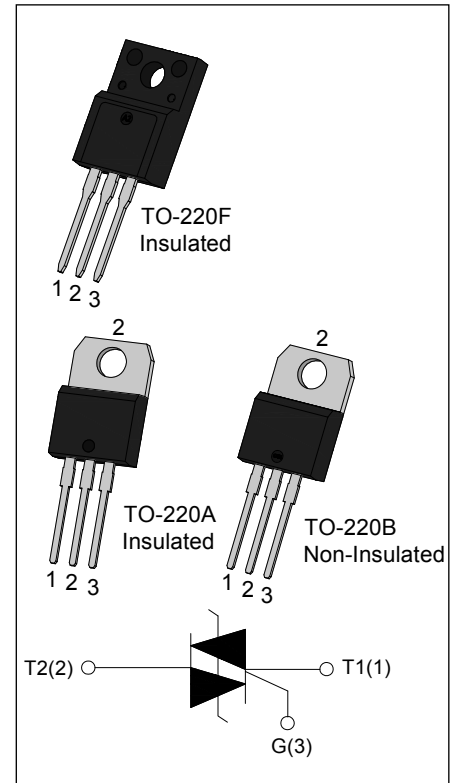
### DESCRIPTION:

The ACJT12 series of double mesa technology provide high interference immunity, They can be used as an static ON/OFF function in electrical control system, and used as a driver of low power and high inductance or resistive loads, such as jet pumps of dishwashers, fans of air-conditioner ...

From all three terminals to external heatsink, ACJT12xx-xxA provides a rated insulation voltage of 2500 V<sub>RMS</sub>, and ACJT12xx-xxF provides a rated insulation voltage of 2000 V<sub>RMS</sub>. All packages above are RoHS compliant. (2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
I <sub>T(RMS)</sub>	12	A
V <sub>DRM</sub> / V <sub>RPM</sub>	800/1000	V
I <sub>GT</sub>	≤10 or ≤35 or ≤50	mA



### ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T <sub>stg</sub>	-40-150	°C
Operating junction temperature range		T <sub>j</sub>	-40-125	°C
Repetitive peak off-state voltage( T <sub>j</sub> =25°C)		V <sub>DRM</sub>	800/1000	V
Repetitive peak reverse voltage( T <sub>j</sub> =25°C)		V <sub>RPM</sub>	800/1000	V
Non repetitive surge peak Off-state voltage		V <sub>DSM</sub>	V <sub>DRM</sub> +100	V
Non repetitive peak reverse voltage		V <sub>RSM</sub>	V <sub>RPM</sub> +100	V
RMS on-state current	TO-220A(Ins)/ TO-220F(Ins) (T <sub>c</sub> =70°C)	I <sub>T(RMS)</sub>	12	A
	TO-220B(Non-Ins) (T <sub>c</sub> =85°C)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I <sub>TSM</sub>	120	A
I <sup>2</sup> t value for fusing ( tp=10ms)		I <sup>2</sup> t	72	A <sup>2</sup> s

Rate of rise of on-state current ( $I_G=2\times I_{GT}$ )	$di_T/dt$	50	A/ $\mu$ s
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** ( $T_j=25^\circ\text{C}$  unless otherwise specified)

Symbol	Test Condition	Quadrant		Value			Unit
				ACJT1210	ACJT1235	ACJT1250	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	10	35	50	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	20	50	70	mA
		II		30	70	100	
$I_H$	$I_T=100\text{mA}$		MAX	15	45	60	mA
$dV/dt$	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	1000	1500	2000	V/ $\mu$ s

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=17\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.65	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	10	$\mu$ A
$I_{RRM}$		$T_j=125^\circ\text{C}$	3.0	mA

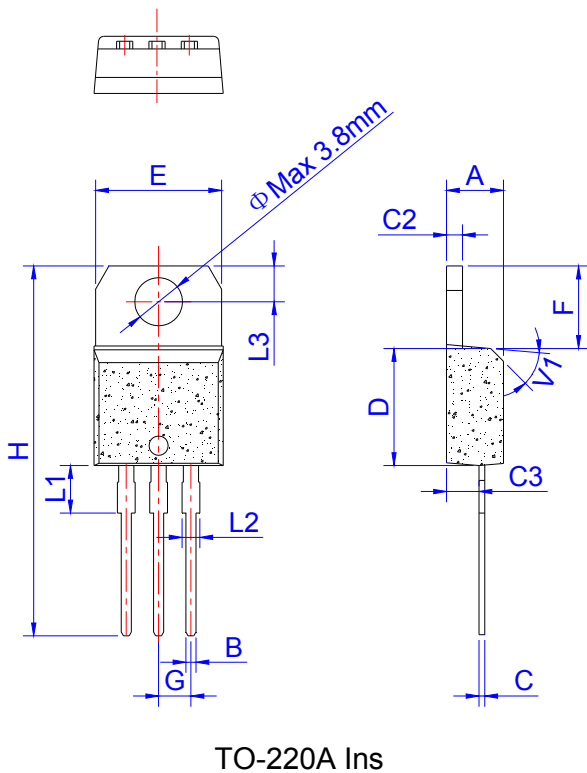
**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.7	$^\circ\text{C}/\text{W}$
		TO-220B(Non-Ins)	1.9	
		TO-220F(Ins)	2.9	

ORDERING INFORMATION

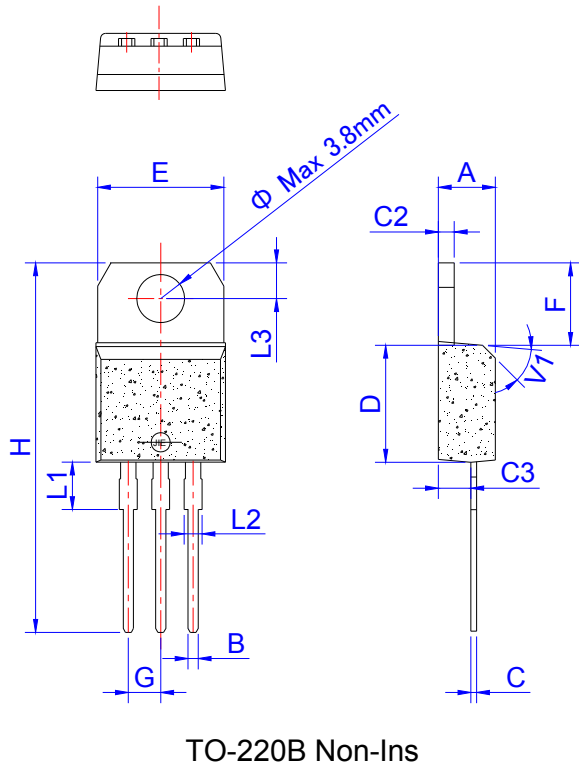
<p><b>AC</b></p> <p>AC switch</p> <p>JieJie Microelectronics Co.,Ltd</p>	<p><b>J</b></p>	<p><b>T</b></p> <p>Triacs</p> <p><math>I_{T(RMS)}:12A</math></p>	<p><b>12</b></p>	<p><b>10</b></p> <p>10: <math>I_{GT1-3} \leq 10mA</math>          35: <math>I_{GT1-3} \leq 35mA</math>          50: <math>I_{GT1-3} \leq 50mA</math></p>	<p><b>-08</b></p> <p>08: <math>V_{DRM} / V_{RRM} \geq 800V</math>          10: <math>V_{DRM} / V_{RRM} \geq 1000V</math></p>	<p><b>A</b></p> <p>A: TO-220A(Ins)          F: TO-220F(Ins)          B: TO-220B(Non-Ins)</p>
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PACKAGE MECHANICAL DATA

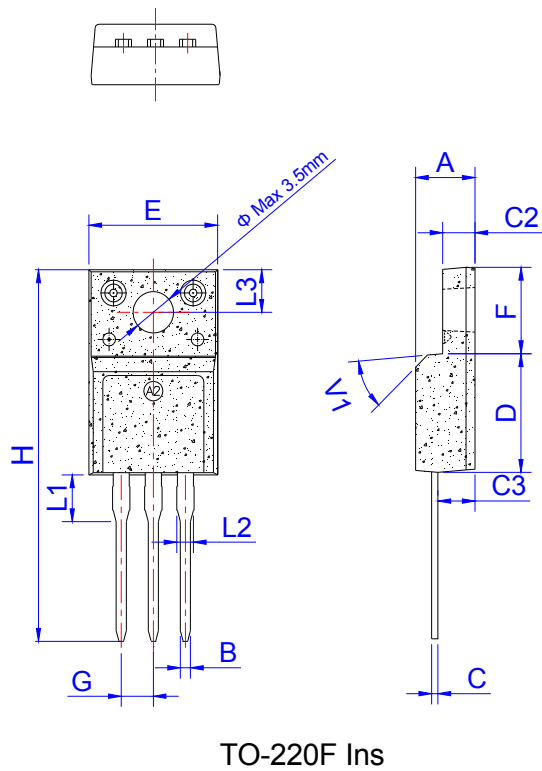


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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

PACKAGE MECHANICAL DATA



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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°	

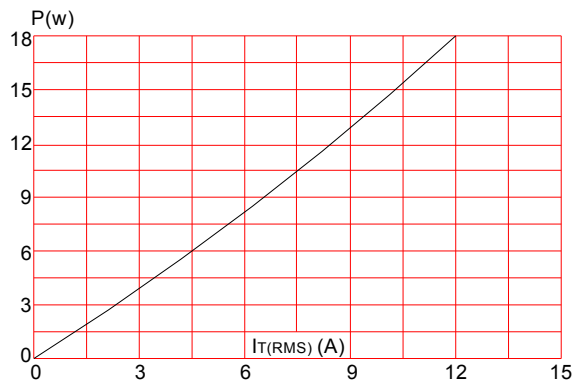


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G		2.54			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°	

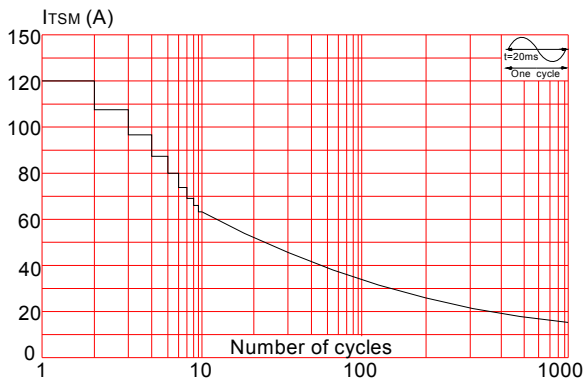
PACKAGE INFORMATION

PACKAGE	WEIGHT (PER PCS)	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	2.308g	TUBE	50	1,000	8,000
TO-220B	1.935g	TUBE	50	1,000	8,000
TO-220F	2.093g	TUBE	50	1,000	8,000

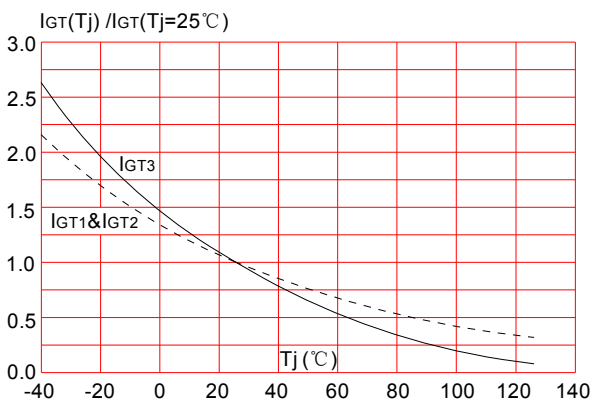
**FIG.1** Maximum power dissipation versus RMS on-state current



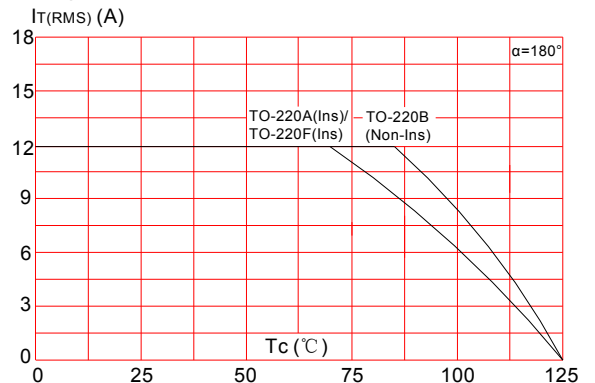
**FIG.3:** Surge peak on-state current versus number of cycles



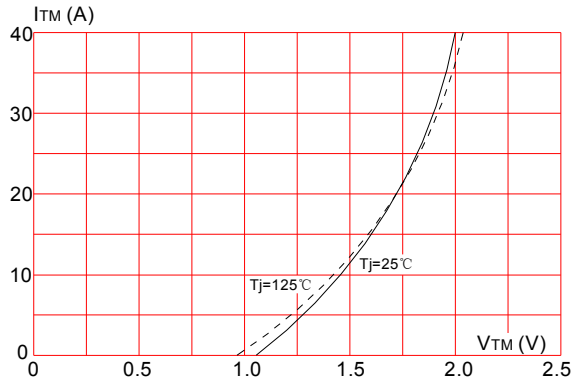
**FIG.5:** Relative variations of gate trigger current versus junction temperature



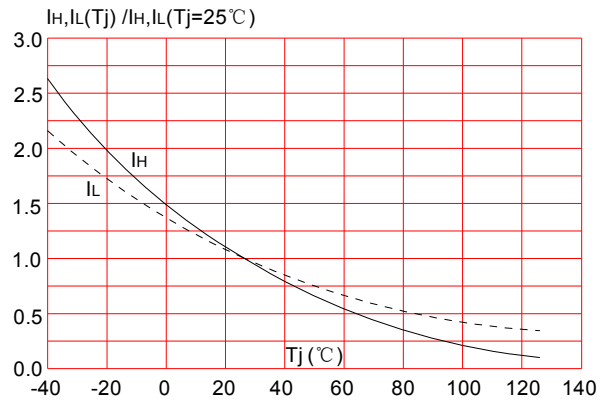
**FIG.2:** RMS on-state current versus case temperature



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



**FIG.6:** Relative variations of holding current, latching current versus junction temperature



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