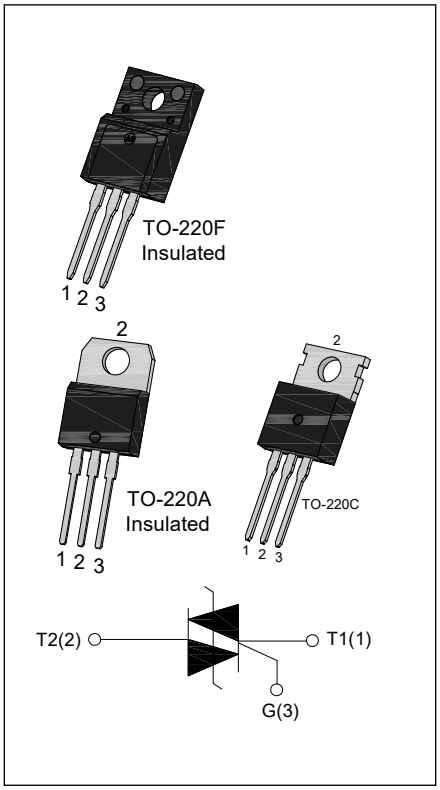
ACJT12 Series 12A TRIACs

Rev.7.0

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_{RMS}, and ACJT12xx-xxF provides a rated insulation voltage of 2000 V_{RMS}.
All packages above are RoHS compliant. (2011/65/EU)



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM} /V_{RRM}	800/1000	V
I_{GT}	≤10 or ≤35 or ≤50	mA

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	℃
Operating junction temperature range		T_j	-40-125	℃
Repetitive peak off-state voltage(T_j=25℃)		V_{DRM}	800/1000	V
Repetitive peak reverse voltage(T_j=25℃)		V_{RRM}	800/1000	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=70℃)	$I_{T(RMS)}$	12	A
	TO-220C (T_C=85℃)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	120	A
I^2t value for fusing (tp=10ms)		I^2t	72	A^2s

Rate of rise of on-state current (I_G=2×I_{GT})	dI_T/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℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value			Unit
				ACJT1210	ACJT1235	ACJT1250	
I_{GT}	V_D=12V R_L=33Ω	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℃ R_L=3.3KΩ	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=100mA		MAX	15	45	60	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃		MIN	1000	1500	2000	V/μs

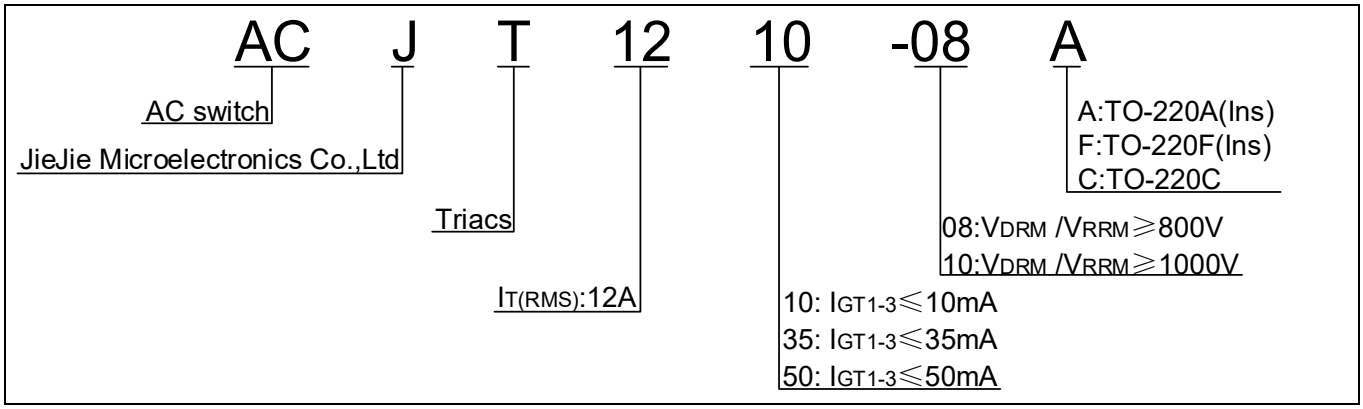
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=17A tp=380μs	T_j=25℃	1.65	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	10	μA
I_{RRM}		T_j=125℃	3.0	mA

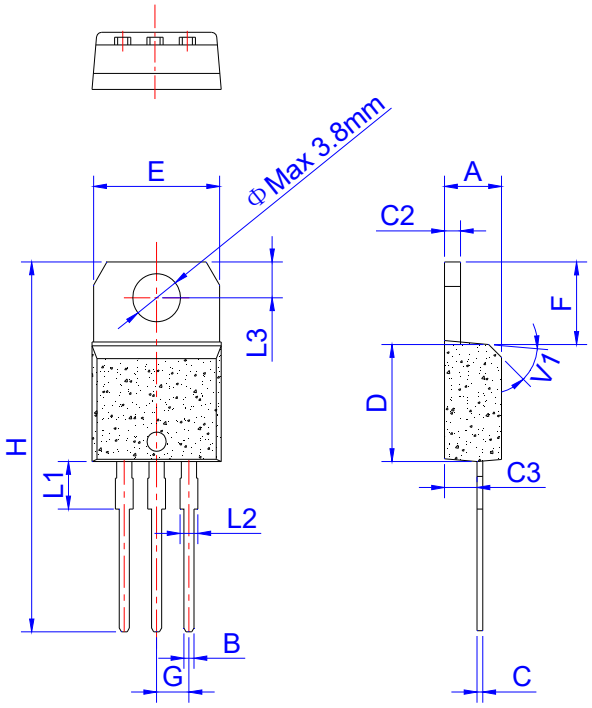
THERMAL RESISTANCES

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

ORDERING INFORMATION



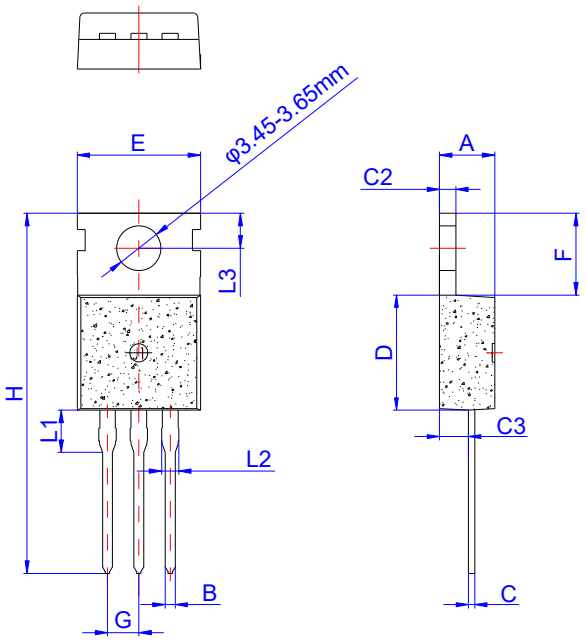
PACKAGE MECHANICAL DATA



TO-220A Ins

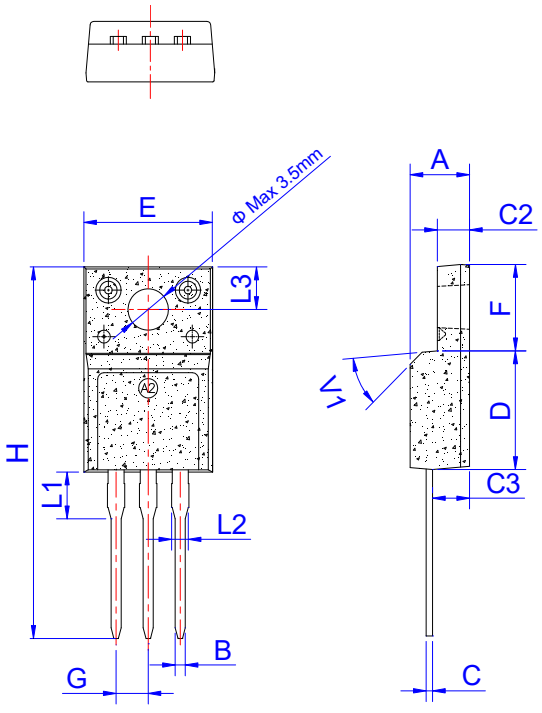
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	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

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	1.25		1.35	0.049		0.053
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	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1	2.70		3.30	0.106		0.130
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116



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 INFORMATION

PACKAGE	WEIGHT (PER PCS)	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	2.308g	TUBE	50	1,000	5,000
TO-220C	1.935g	TUBE	50	1,000	5,000
TO-220F	2.093g	TUBE	50	1,000	5,000

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

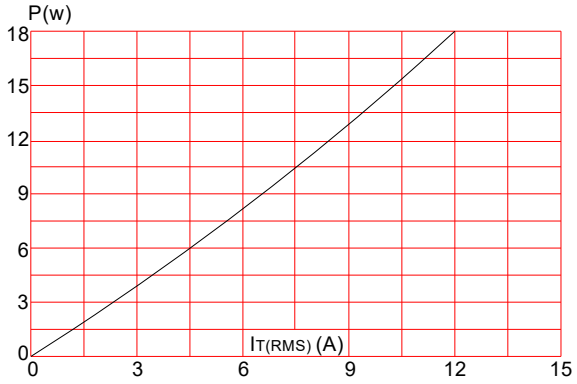


FIG.2: RMS on-state current versus case temperature

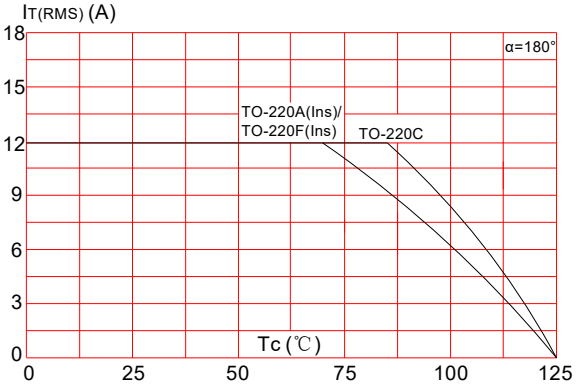


FIG.3: Surge peak on-state current versus number of cycles

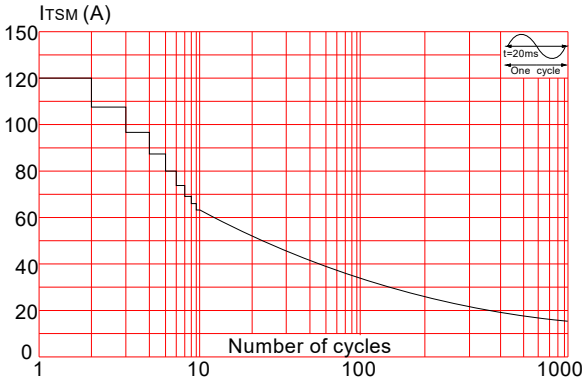


FIG.4: On-state characteristics (maximum values)

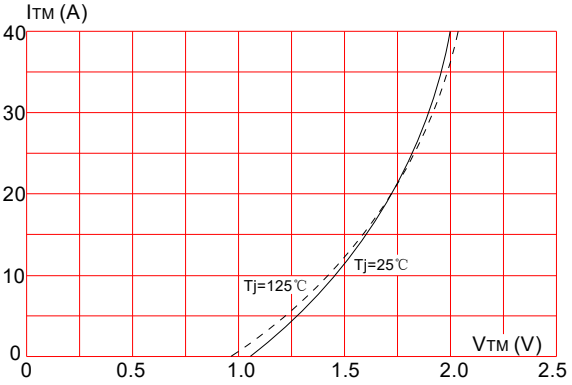


FIG.5: Relative variations of gate trigger current versus junction temperature

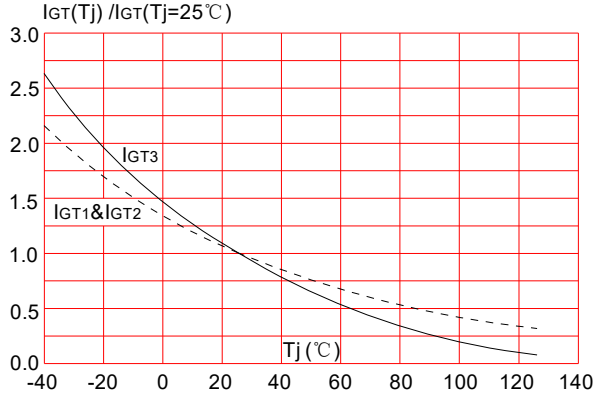
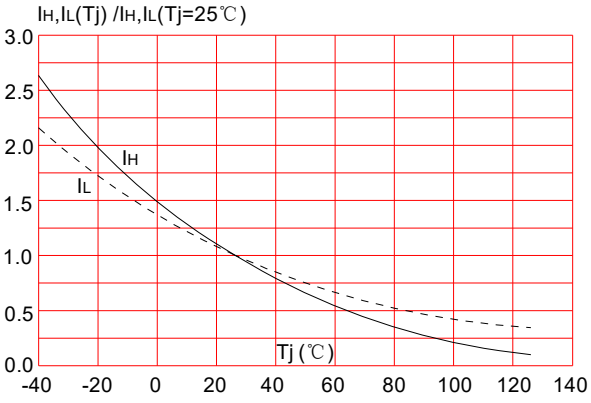


FIG.6: Relative variations of holding current, latching curretn versus junction temperature



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