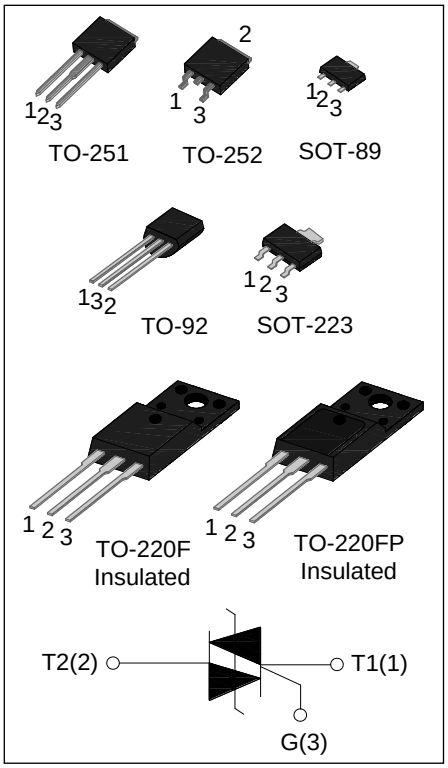
ACJT2 Series 2A TRIACs

Rev.4.0

DESCRIPTION:

ACJT2 series triacs with high ability to withstand the shock loading of large current provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on inductive load and serious electromagnetic interference place. ACJT2xx-xxF/ACJT2xx-xxFP provides insulation voltage rated at 2000V RMS from all three terminals to external heatsink.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	2	A
V_{DRM} /V_{RRM}	1000	V

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}	1000	V
Repetitive peak reverse voltage(T_j =25℃)		V_{RRM}	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-251/ TO-252/ SOT-223(T_C=103℃)	$I_{T(RMS)}$	2	A
	SOT-89 (T_C=98℃)			
	TO-92 (T_C=90℃)			
	TO-220F(Ins)/ TO-220FP(Ins)(T_C=100℃)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	20	A
I^2t value for fusing (tp=10ms)		I^2t	2	A^2s

Rate of rise of on-state current (I_G =2×I_{GT})	dI/dt	50	A/μs
Peak gate current	I_{GM}	1	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	1	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value		Unit
				ACJT210	ACJT225	
I_{GT}	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	10	25	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX	1.3		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	25	50	mA
		Ⅱ		35	60	
I_H	I_T=100mA		MAX	10	40	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃		MIN	600	1000	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=2.8A tp=380μs	T_j=25℃	1.55	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	10	μA
I_{RRM}		T_j=125℃	1	mA

THERMAL RESISTANCES

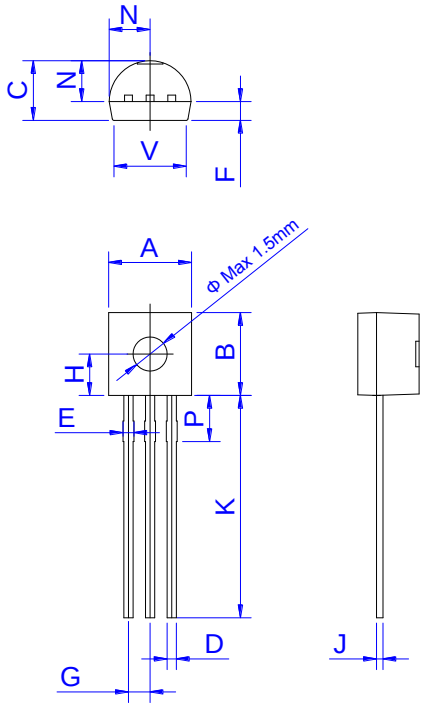
Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251/ TO-252	4.5	℃/W
		TO-92	11.2	
		SOT-223	5.8	
		SOT-89	8.9	
		TO-220F(Ins)/ TO-220FP(Ins)	7.5	

ORDERING INFORMATION

AC J T 2 10 -10 U

- AC: AC switch
- J: JieJie Microelectronics Co.,Ltd
- T: Triacs
- 2: $I_{T(RMS)}$:2A
- 10: $I_{GT1-3} \leqslant 10mA$; 25: $I_{GT1-3} \leqslant 25mA$
- -10: 10:V_{DRM} /$V_{RRM} \geqslant 1000V$
- U: V:SOT-223; F:TO-220F(Ins); FP:TO-220FP(Ins); U:TO-92 N:SOT-89; H:TO-251 K:TO-252

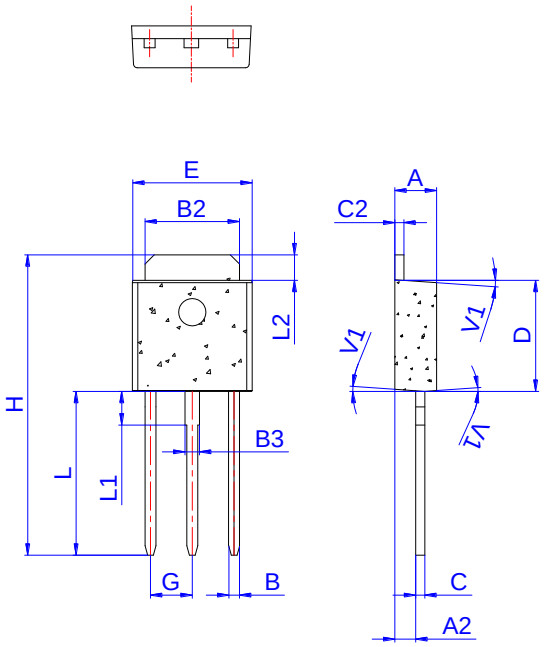
PACKAGE MECHANICAL DATA



TO-92

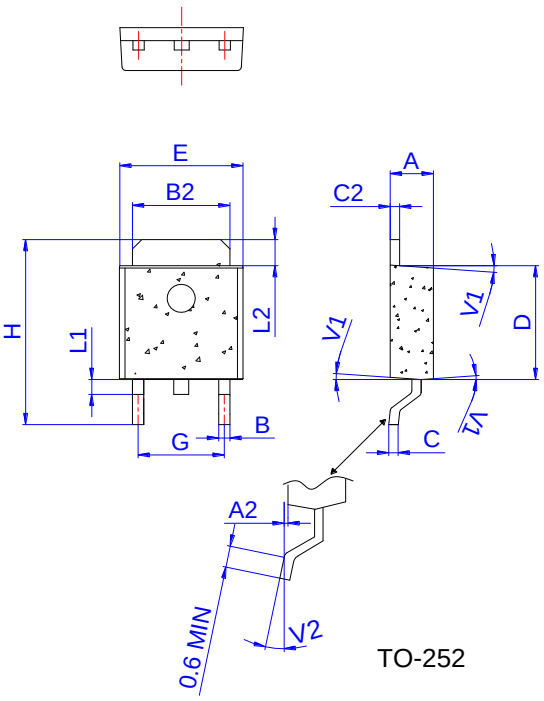
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.407		0.533	0.016		0.021
E	0.60		0.80	0.024		0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V	-		4.3	-		0.169

PACKAGE MECHANICAL DATA



TO-251

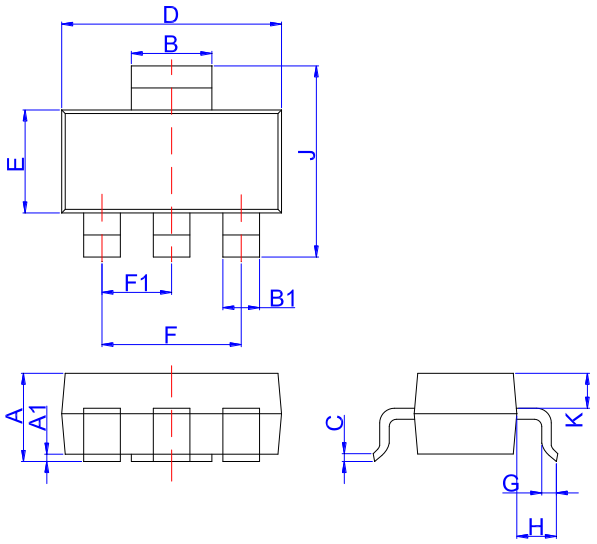
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	



TO-252

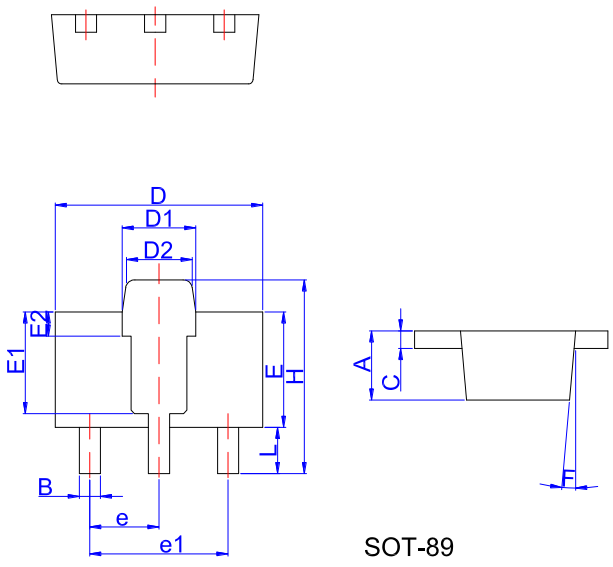
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°

PACKAGE MECHANICAL DATA



SOT-223

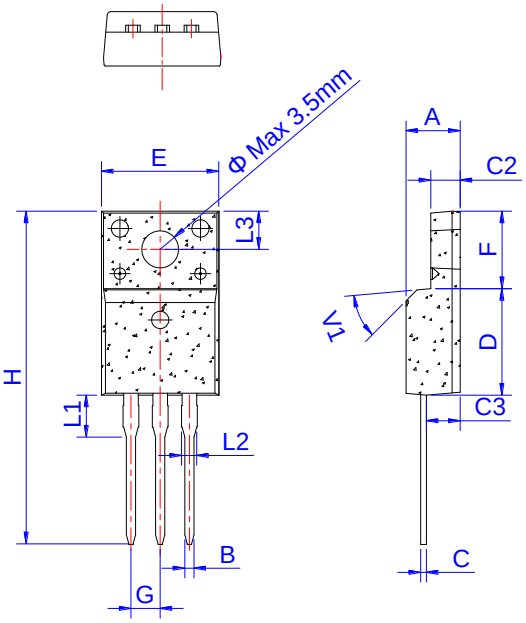
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0	0.06	0.10	0	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039



SOT-89

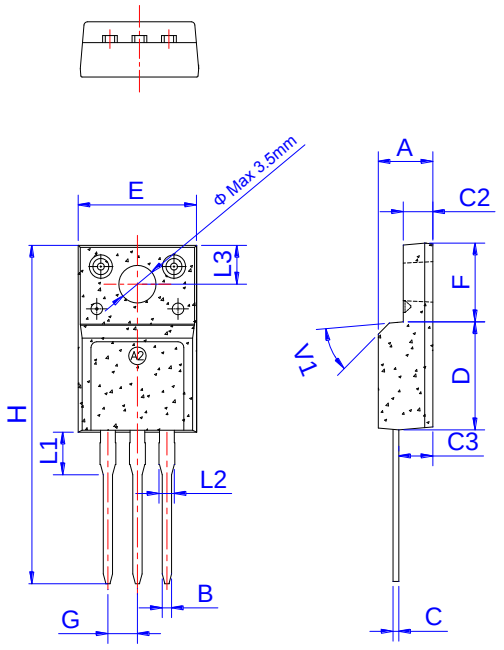
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.35		0.52	0.014		0.020
C	0.35		0.46	0.014		0.018
D	4.30		4.70	0.169		0.185
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.30		2.70	0.091		0.106
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5°			5°	
H	3.94		4.0	0.155		0.157
L	0.80		1.20	0.031		0.047

PACKAGE MECHANICAL DATA



TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.80	0.173		0.189
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.48		0.75	0.019		0.030
C2	2.40		2.70	0.094		0.106
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.70		10.3	0.382		0.406
F	6.40		7.00	0.252		0.276
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-220FP 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°	

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

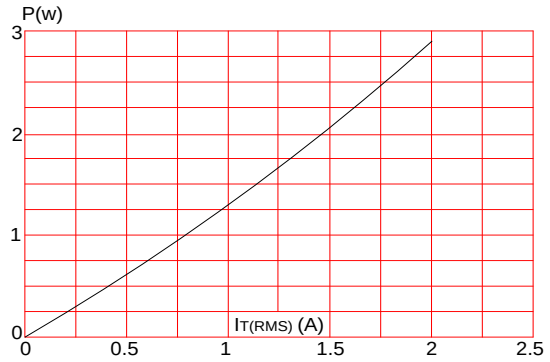


FIG.2: RMS on-state current versus case temperature

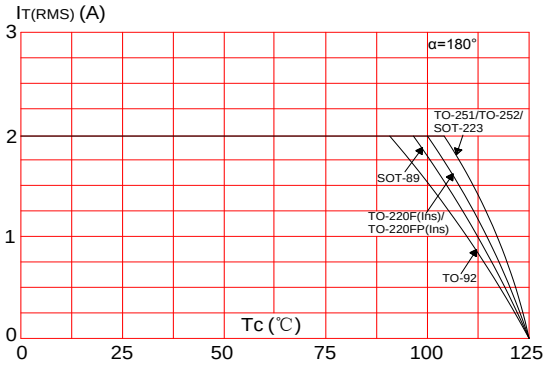


FIG.3: Surge peak on-state current versus number of cycles

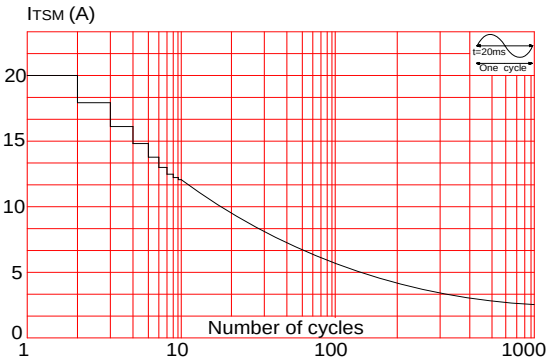


FIG.4: On-state characteristics (maximum values)

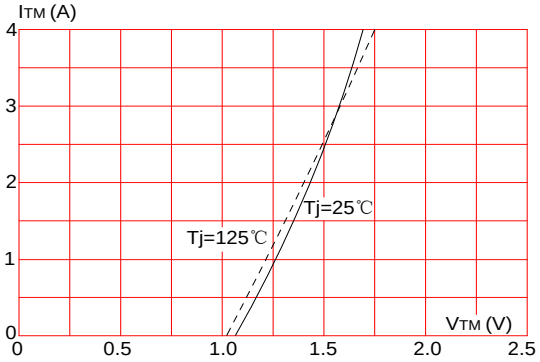


FIG.5: Relative variations of gate trigger current versus junction temperature

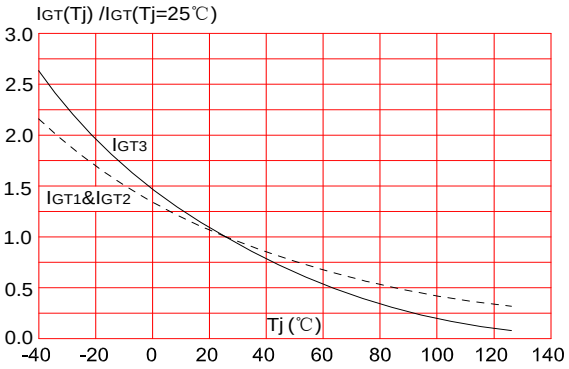
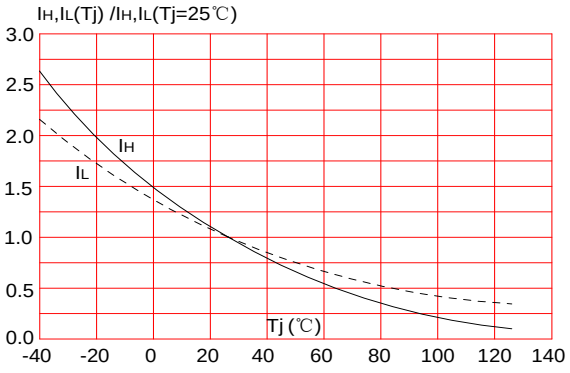


FIG.6: Relative variations of holding current, latching curretn versus junction temperature



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