



ACJM01 Series 1A TRIACs

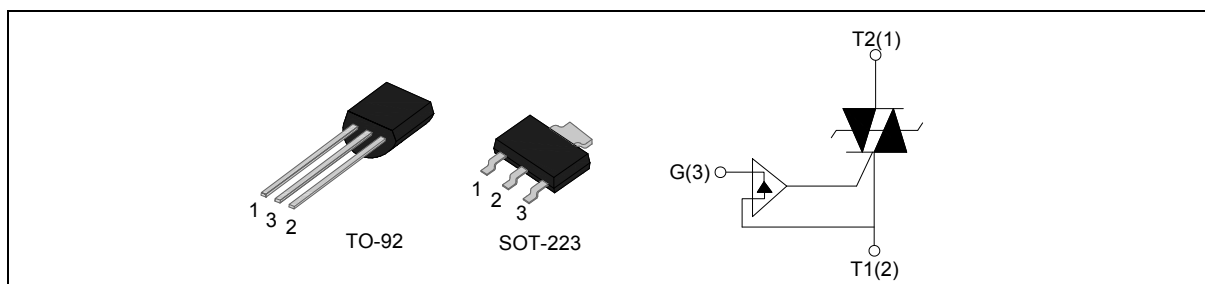
Rev.2.0

DESCRIPTION:

Available either in through-hole or surface-mount package, the ACJM01 Series can be used as an AC static ON/OFF function in domestic and industrial control systems, or as a driver of low power and high inductance loads, such as solenoid valves, pumps, fans, micro-motors.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	600/800	V
I_{GT2-3}	≤ 10	mA



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$	
Operating junction temperature range	T_j	-40-125	$^{\circ}C$	
Repetitive peak off-state voltage($T_j=25^{\circ}C$)	V_{DRM}	600/800	V	
Repetitive peak reverse voltage($T_j=25^{\circ}C$)	V_{RRM}	600/800	V	
Non repetitive 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	$I_{T(RMS)}$	SOT-223 ($T_C=100^{\circ}C$)	1	A
		TO-92 ($T_C=70^{\circ}C$)		
Non repetitive surge peak on-state current (full cycle, $F=50Hz$)	I_{TSM}	12	A	
I^2t value for fusing ($t_p=10ms$)	I^2t	0.72	A^2s	
Rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	100	$A/\mu s$	
Non repetitive mains peak mains voltage ⁽¹⁾	V_{PP}	2	kV	

Peak gate current	I_{GM}	1	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	0.5	W

NOTE 1: Minimum I_{GT} is guaranteed at 10% of I_{GT} max

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

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	II -III	MAX	10	mA
V_{GT}		II -III	MAX	1.2	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ\text{C}$ $R_L=3.3\text{K}\Omega$	II -III	MIN	0.2	V
I_L	$I_G=1.2I_{GT}$	II	MAX	30	mA
		III		20	
I_H	$I_T=100\text{mA}$		MAX	20	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	500	V/ μs
(dI/dt) _c	Without snubber, (dV/dt) _c = 15 V/ μs , $T_j=125^\circ\text{C}$		MIN	2	A/ms
V_{CL}	$I_{CL}=0.1\text{mA}$, $t_p=1\text{ms}$, $V_{DRM}/V_{RRM}=600\text{V}$		MIN	650	V
	$I_{CL}=0.1\text{mA}$, $t_p=1\text{ms}$, $V_{DRM}/V_{RRM}=800\text{V}$		MIN	850	V

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=2\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.7	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	1	mA
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	0.85	V
R_D	Dynamic resistance	$T_j=125^\circ\text{C}$	300	m Ω

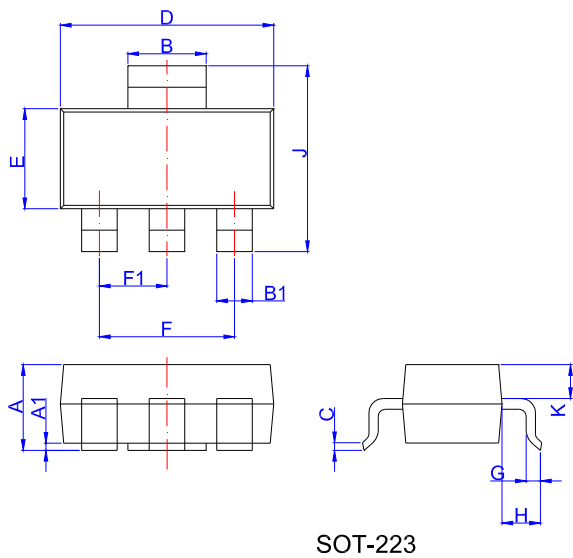
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	junction to case(AC)	SOT-223	9.5	°C/W
		TO-92	15.2	
R _{th(j-t)}	junction to tab(AC)		25	
R _{th(j-a)}	Junction to ambient	S = 5 cm ²	60	

ORDERING INFORMATION

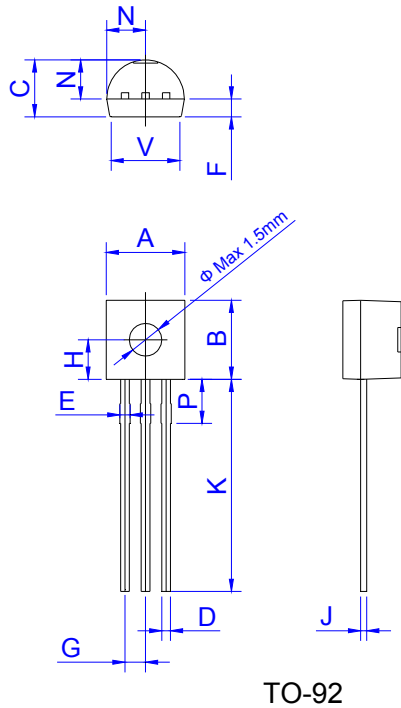
<p>ACJ JieJie AC switch series Mesa technology</p>	<p>M IT(RMS):1A</p>	<p>01 U:TO-92 V:SOT-223</p>	<p>V</p>	<p>-800 600:V_{DRM} /V_{RRM}≥600V 800:V_{DRM} /V_{RRM}≥800V</p>	<p>SW SW:I_GT₂₋₃≤10mA</p>
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PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	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

PACKAGE MECHANICAL DATA



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

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

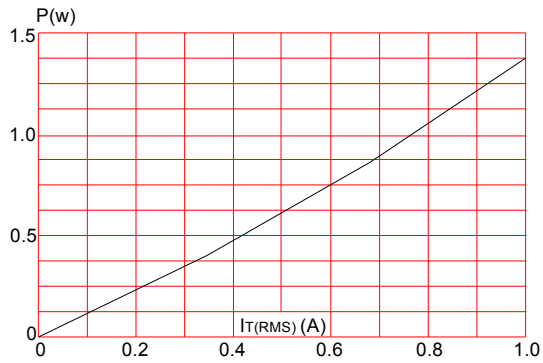


FIG.2: RMS on-state current versus case temperature

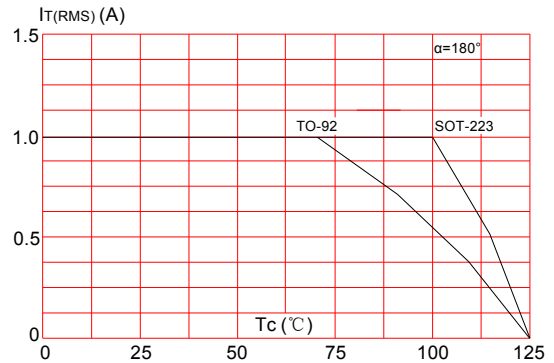


FIG.3: Surge peak on-state current versus number of cycles

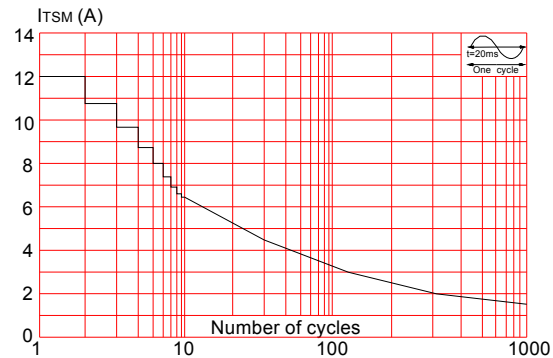


FIG.4: On-state characteristics (maximum values)

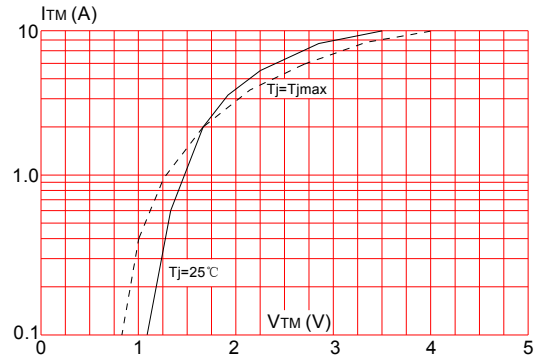


FIG.5: Relative variations of gate trigger current versus junction temperature

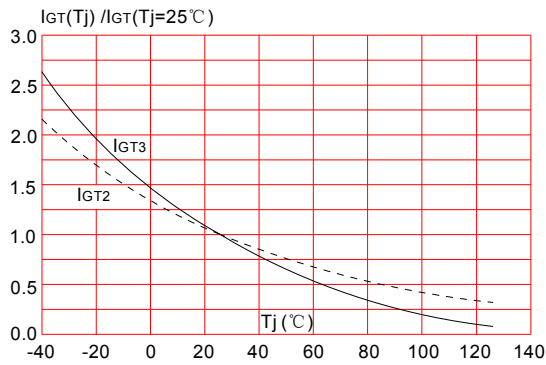
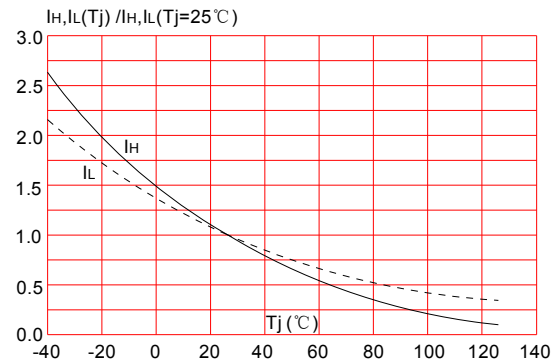



FIG.6: Relative variations of holding current, latching current versus junction temperature



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