



ACJT6 Series 6A TRIACs

Rev.4.0

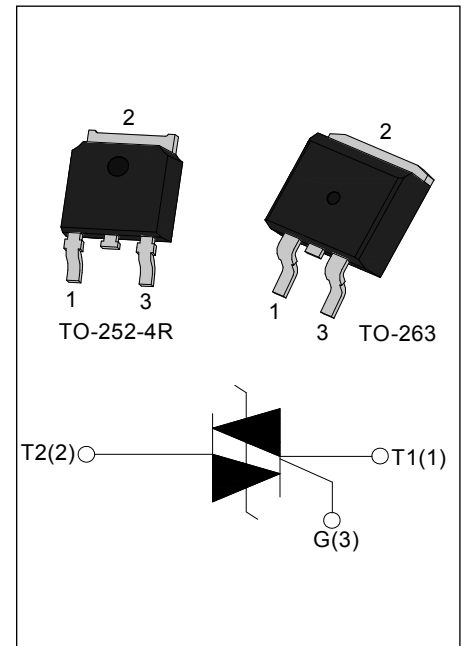
DESCRIPTION:

The ACJT6 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 ...

Packages are RoHS compliant (2011/65/EU).

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	6	A
V_{DRM}/V_{RRM}	800/1000	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($T_j=25^{\circ}C$)	V_{DRM}	800/1000	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)	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-252-4R ($T_C=102^{\circ}C$)	6	A
	TO-263 ($T_C=99^{\circ}C$)		
Non repetitive surge peak on-state current (full cycle, $F=50Hz$)	I_{TSM}	60	A
I^2t value for fusing ($t_p=10ms$)	I^2t	18	A^2s
Rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	50	$A/\mu s$
Peak gate current	I_{GM}	4	A

Average gate power dissipation	$P_{G(AV)}$	0.5	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
				ACJT605	ACJT610	ACJT625	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II - III	MAX	5	10	25	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	7	20	40	mA
		II		20	35	60	
I_H	$I_T=100\text{mA}$		MAX	7	20	40	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	200	500	1000	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=0.1\text{ V}/\mu\text{s}$ $T_j=125^\circ\text{C}$		MIN	2.7	3.5	5.3	V/ms

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=12\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	0.85	V
R_d	Dynamic resistance	$T_j=125^\circ\text{C}$	68	$\text{m}\Omega$
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

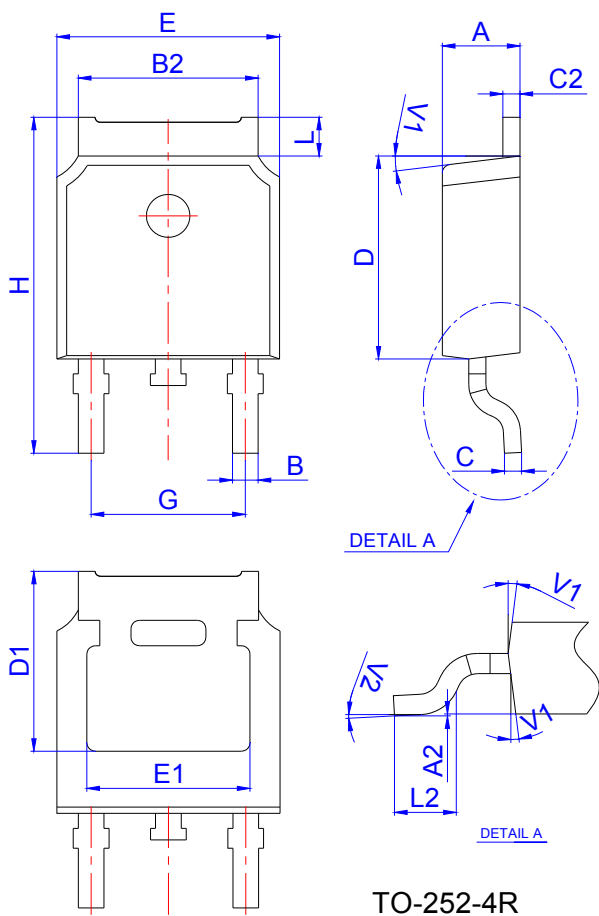
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-263	3.1	$^\circ\text{C}/\text{W}$
		TO-252-4R	2.8	
$R_{th(j-a)}$	junction to ambient	TO-263	45	$^\circ\text{C}/\text{W}$
		TO-252-4R	70	

ORDERING INFORMATION

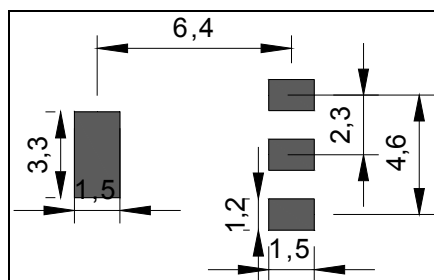
AC	J	T	6	10	-8	E
AC switch		Triacs				E: TO-263 K: TO-252-4R ETR: TO-263 (Tape & Reel) KTR: TO-252-4R (Tape & Reel)
JieJie Microelectronics Co., Ltd			$I_T(RMS): 6A$			8: $V_{DRM} / V_{RRM} \geq 800V$ 10: $V_{DRM} / V_{RRM} \geq 1000V$
						05: $I_{GT1-3} \leq 05mA$ 10: $I_{GT1-3} \leq 10mA$ 25: $I_{GT1-3} \leq 25mA$

PACKAGE MECHANICAL DATA

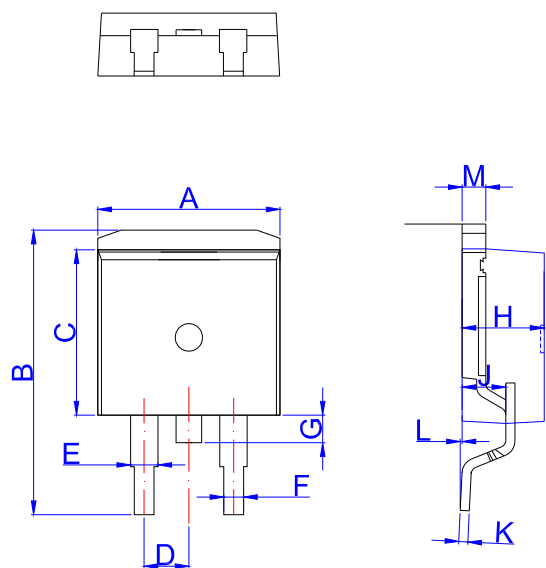


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

FOOTPRINT-TO-252-4R (dimensions in mm)



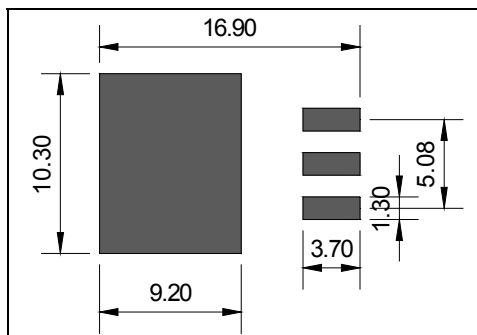
PACKAGE MECHANICAL DATA



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

FOOTPRINT-TO-263 (dimensions in mm)



PACKAGE INFORMATION

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-252-4R	TUBE	80	4,000	32,000
TO-263	TUBE	50	1,000	8,000
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-252-4R	TAPNG	2,500	25,000	13 inch
TO-263	TAPNG	800	4,000	13 inch

MARKING

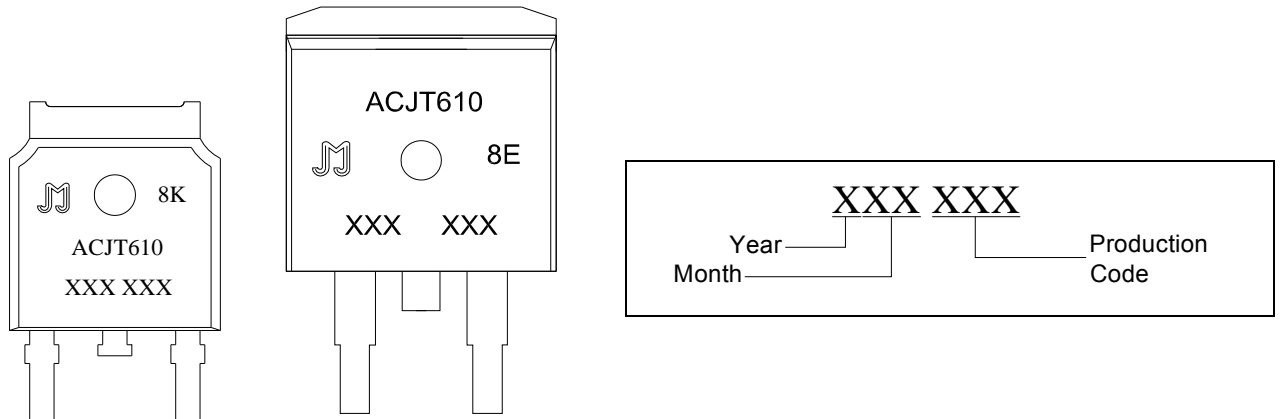


FIG.1: Maximum power dissipation versus RMS on-state current

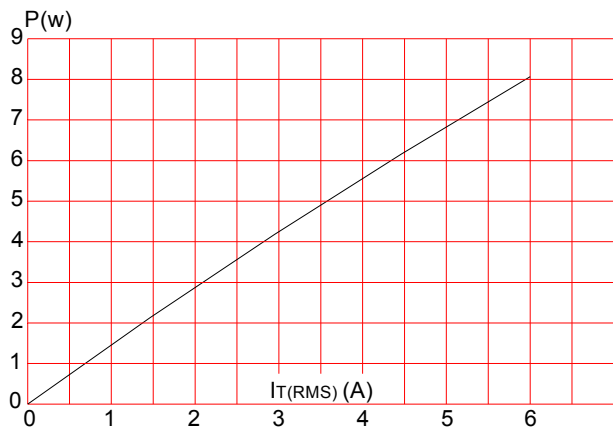


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35μm) (full cycle)

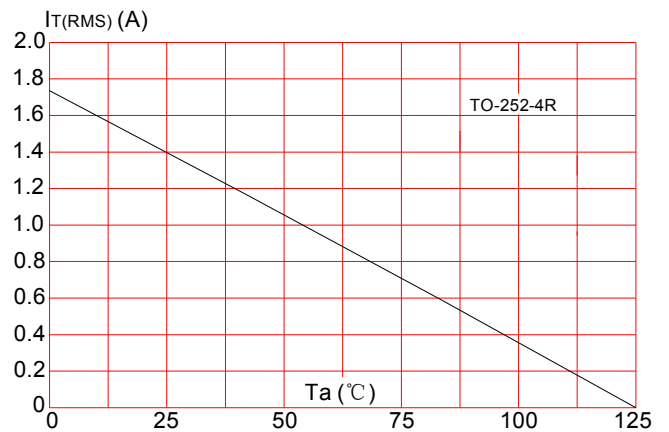


FIG.3: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35μm) (full cycle)

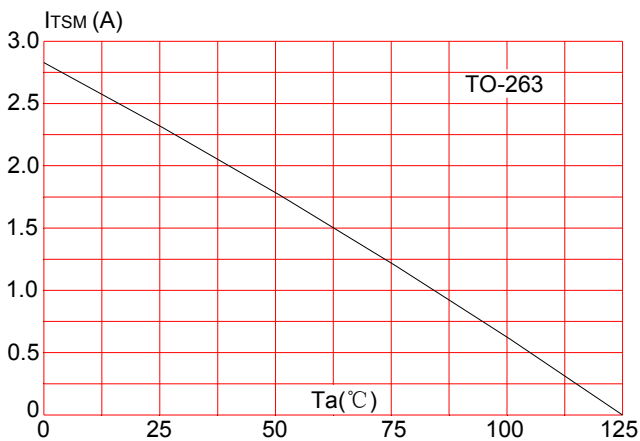


FIG.4: Surge peak on-state current versus number of cycles

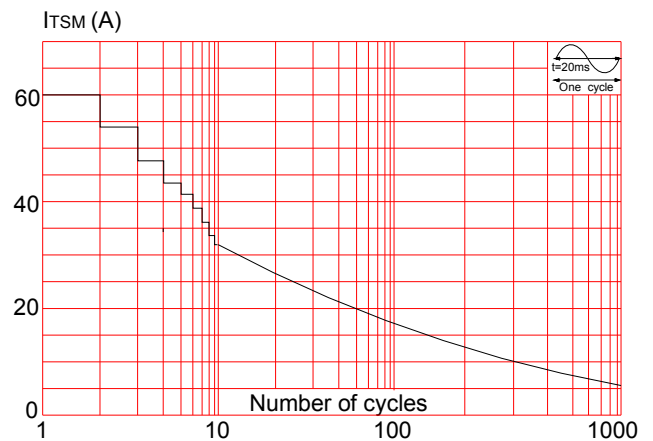


FIG.5: On-state characteristics (maximum values)

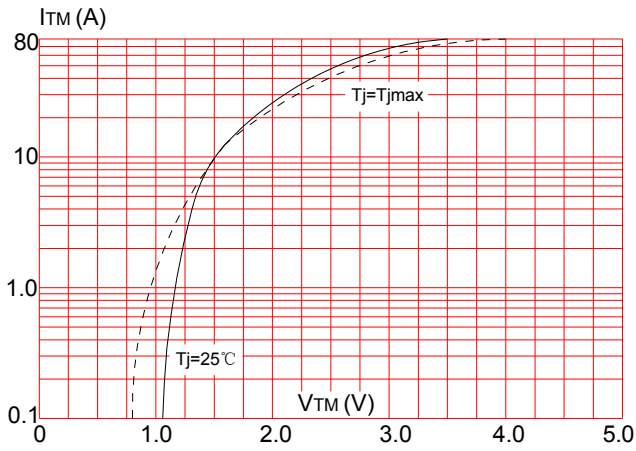


FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

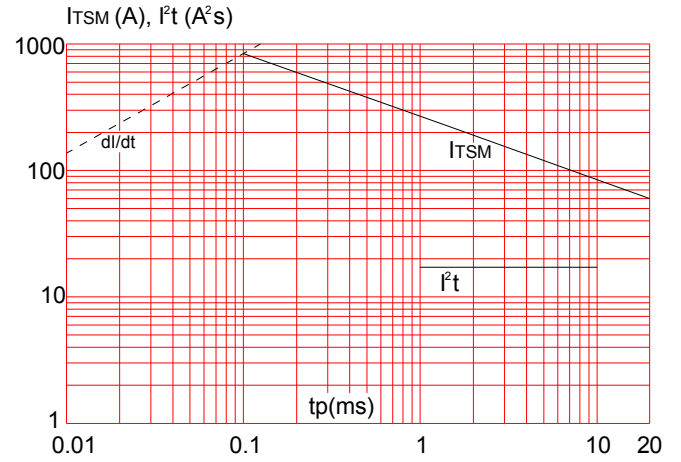
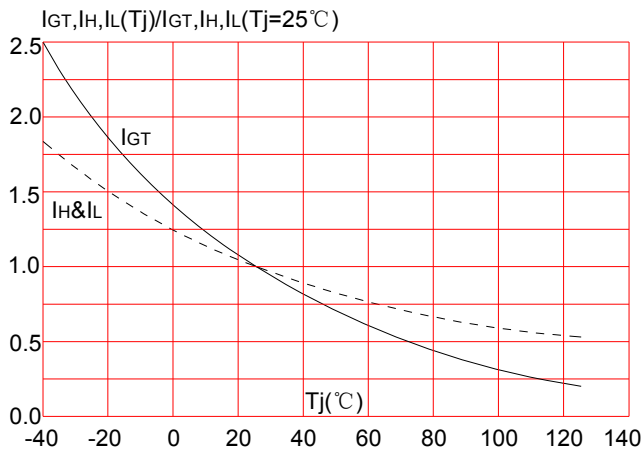
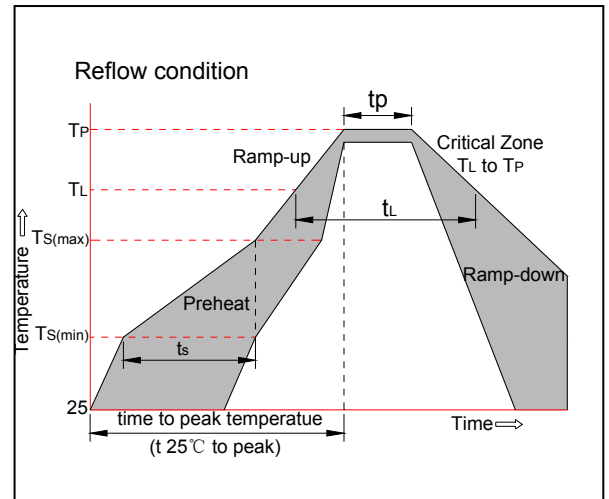


FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature



SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C




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