

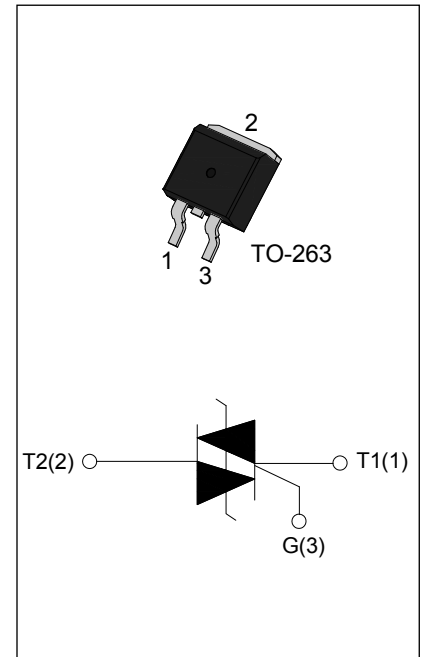


ACJT12 Series 12A TRIACs

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 ... Package TO-263 is 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	°C
Operating junction temperature range		T_j	-40-125	°C
Repetitive peak off-state voltage($T_j=25^\circ\text{C}$)		V_{DRM}	800/1000	V
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)		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-263 ($T_C=60^\circ\text{C}$)	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)		I_{TSM}	120	A
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	72	A^2s
Rate of rise of on-state current ($I_G=2 \times I_{GT}$)		di_T/dt	50	$\text{A}/\mu\text{s}$
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/ μs

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	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	3.0	mA

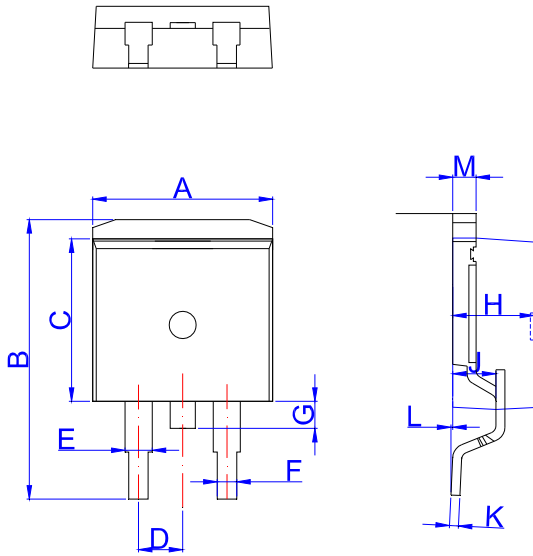
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case(AC)	3.3	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient(AC)		

ORDERING INFORMATION

<p>AC AC switch JieJie Microelectronics Co.,Ltd</p>	<p>J Triacs</p>	<p>T $I_T(\text{RMS}):12\text{A}$</p>	<p>12</p>	<p>10</p>	<p>-08</p>	<p>E E:TO-263 08:$V_{DRM} /V_{RRM} \geq 800\text{V}$ 10:$V_{DRM} /V_{RRM} \geq 1000\text{V}$</p>
						<p>10: $I_{GT1-3} \leq 10\text{mA}$ 35: $I_{GT1-3} \leq 35\text{mA}$ 50: $I_{GT1-3} \leq 50\text{mA}$</p>

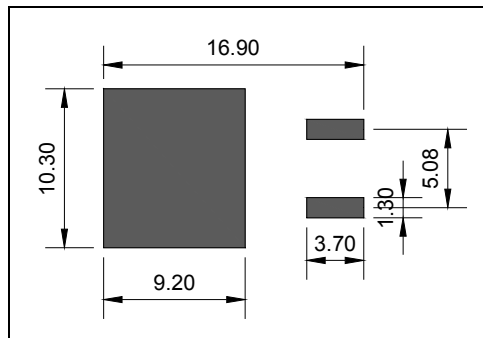
PACKAGE MECHANICAL DATA



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-263	TUBE	50	1,000	6,000
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch

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

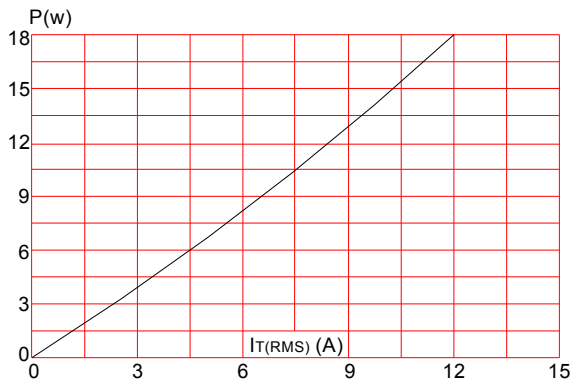


FIG.3: Surge peak on-state current versus number of cycles

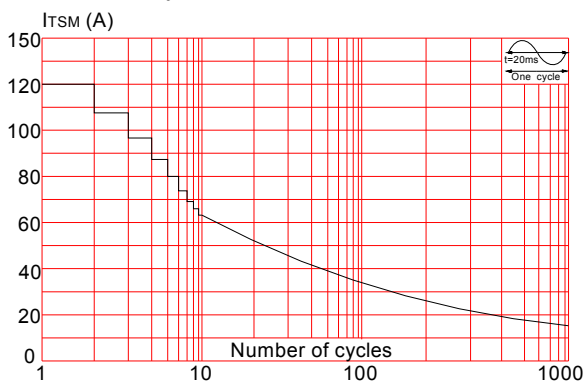


FIG.5: Relative variations of gate trigger current versus junction temperature

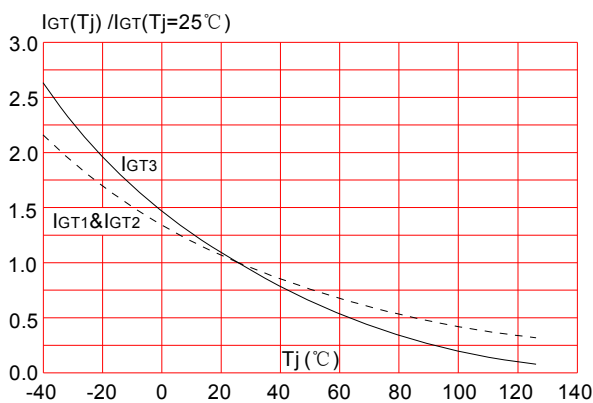


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35μm) (full cycle)

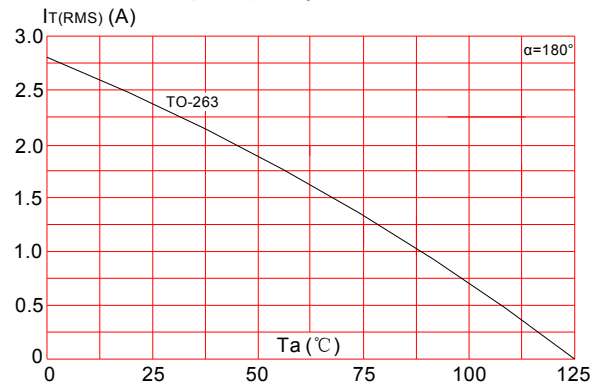


FIG.4: On-state characteristics (maximum values)

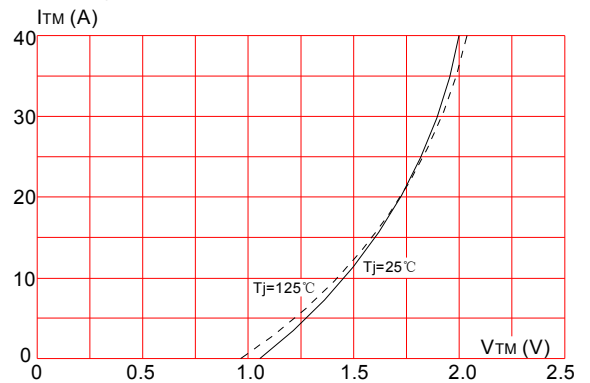
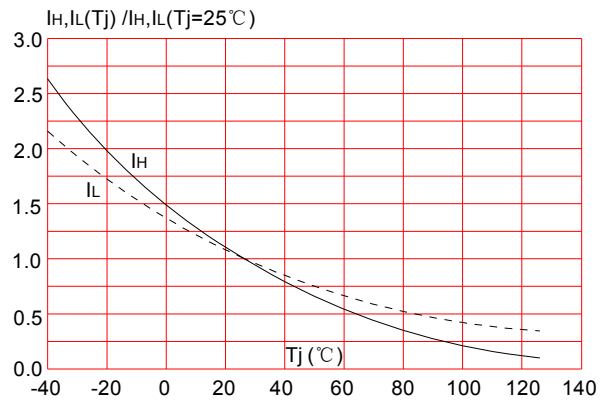
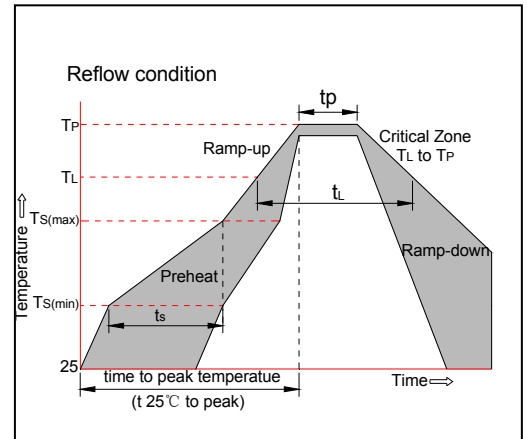


FIG.6: Relative variations of holding current, latching current versus junction temperature



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) (ts)	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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