JMT50WT16S2C

Thyristor Module

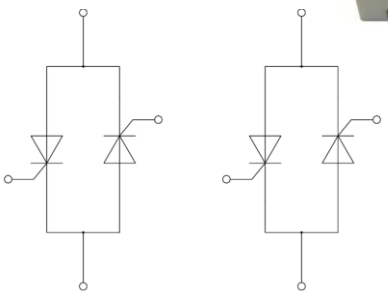
Features

- A package consists of four dual anti-parallel SCR chips
- Welding by vacuum welding technology, which provide high reliability
- Insulated by silicone gel, provide a insulation voltage of 3000V~

Parameter	Value	Unit
V_{RRM}	1600	V
$I_{T(RMS)}$(@ T_C = 80℃)	50	A
I_{TSM}(@ t_P = 10ms)	500	A
V_T(Max)	1.90	V

Applications

- Soft start
- Solid state relay
- AC/DC switch
- Temperature control



Absolute Maximum Ratings (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values	Unit
Repetitive peak off-state voltage	Tvj = 25°C	V_{DRM}	1600	V
Repetitive peak reverse voltage	Tvj = 25°C	V_{RRM}	1600	V
Non-repetitive peak off-state voltage	Tvj = 25°C	V_{DSM}	1700	V
Non-repetitive peak reverse voltage	Tvj = 25°C	V_{RSM}	1700	V
RMS on-state current	T_C = 80°C	$I_{T(RMS)}$	50	A
Forward surge current	1/2 cycle, Sine wave, 50Hz Tvj = 25℃	I_{TSM}	500	A
I^2t value for fusing		I^2t	1250	A^2s
Critical rate of rise of on-state current	I_G=2×I_{GT}	di/dt	150	A/μs
RMS isolation voltage	A.C 50Hz(1s/1min)	V_{ISO}	3000/2500	V
Junction temperature range		T_J	-40 ~ +125	℃
Storage temperature range		T_{stg}	-40 ~ +125	℃

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Electrical Characteristics (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Peak forward voltage	I_T=75A, t_P=380μs	V_T			1.90	V
Repetitive peak off-state current	V_D = V_{DRM},T_{vj} = 25℃	I_{DRM}			500	μA
	V_D = V_{DRM},T_{vj} = 125℃				10	mA
Reverse leakage current	V_R = V_{RRM},T_{vj} = 25℃	I_{RRM}			500	μA
	V_R = V_{RRM},T_{vj} = 125℃				10	mA
Threshold voltage	For power loss calculation only T_{vj} = 125℃,	V_{TO}			1.0	V
Dynamic resistance	T_{vj} = 125℃,	r_T			8	mΩ
Triggering gate current	V_D=12V R_L=30Ω	I_{GT}	20		120	mA
Holding current	I_T=1A	I_H			150	mA
Latching current	I_G=1.2 I_{GT}	I_L			300	mA
Critical rate of rise of voltage	V_D=2/3V_{DRM} Tvj=125℃ Gate Open	dv/dt	1000			V/μs
Triggering gate voltage	V_D=12V R_L=30Ω	V_{GT}			1.5	V
Non triggering gate voltage	V_D=V_{DRM} Tvj=125℃	V_{GD}	0.2			V

Thermal Characteristics (@ T_C = 25°C unless otherwise specified)

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	per Thyristor	$R_{th(j-c)}$		1.2		℃/W
Mounting torque	Module torque to heatsink	M	1.8		2.0	N·m

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Ordering Information

Device	Marking	Package	Weight	Inner Box	Per Carton
JMT50WT16S2C	JMT50WT16S2C	S2	16.8g/PCS	90 PCS	810 PCS

Typical Electrical & Thermal Characteristics

FIG.1: Forward characteristics(per thyristor)

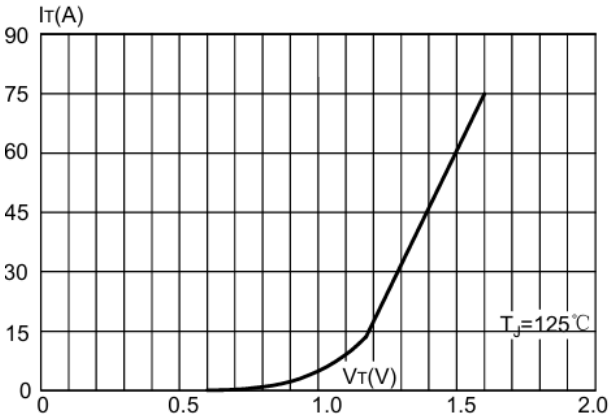


FIG.2: Surge overload current vs. time

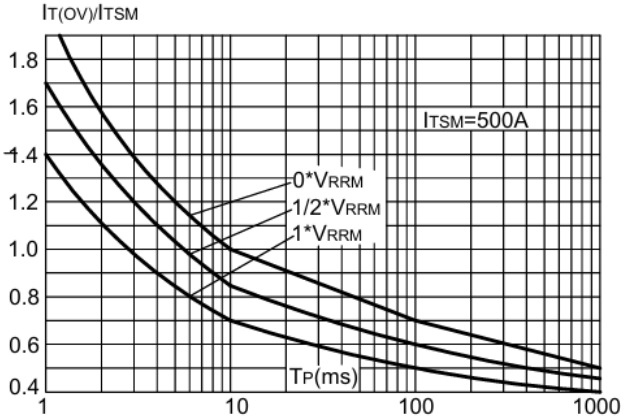


FIG.3: Power dissipation per module vs. R.M.S. current

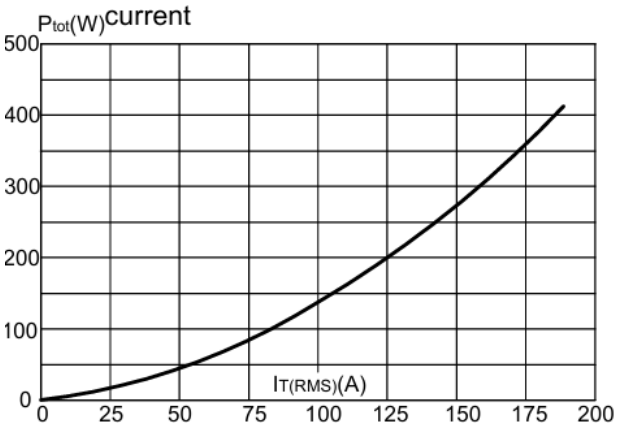
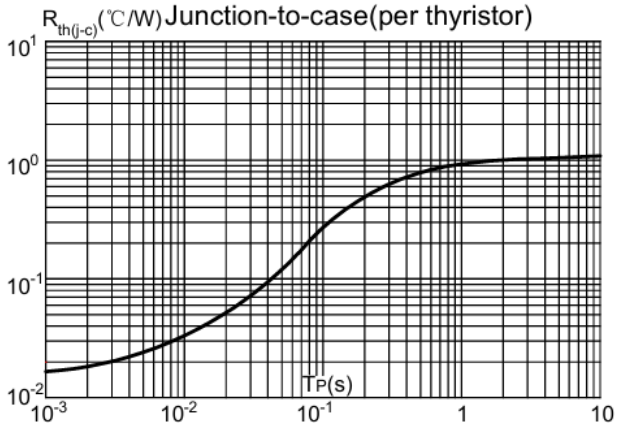


FIG.4: Maximum transient thermal impedance Junction-to-case(per thyristor)



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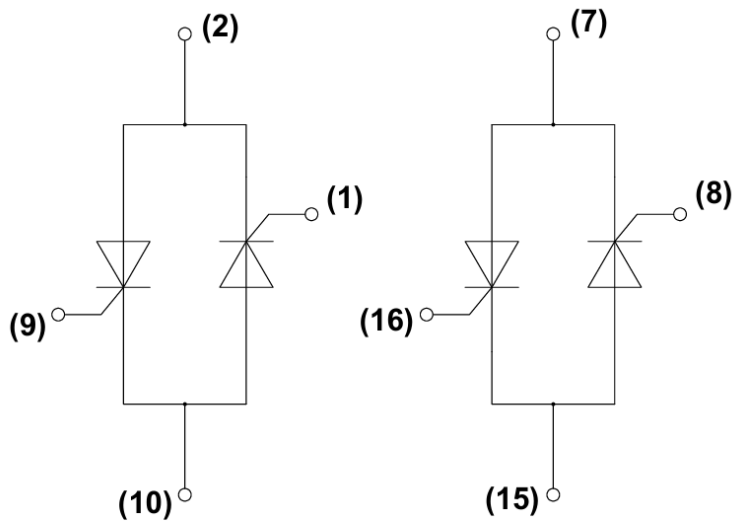
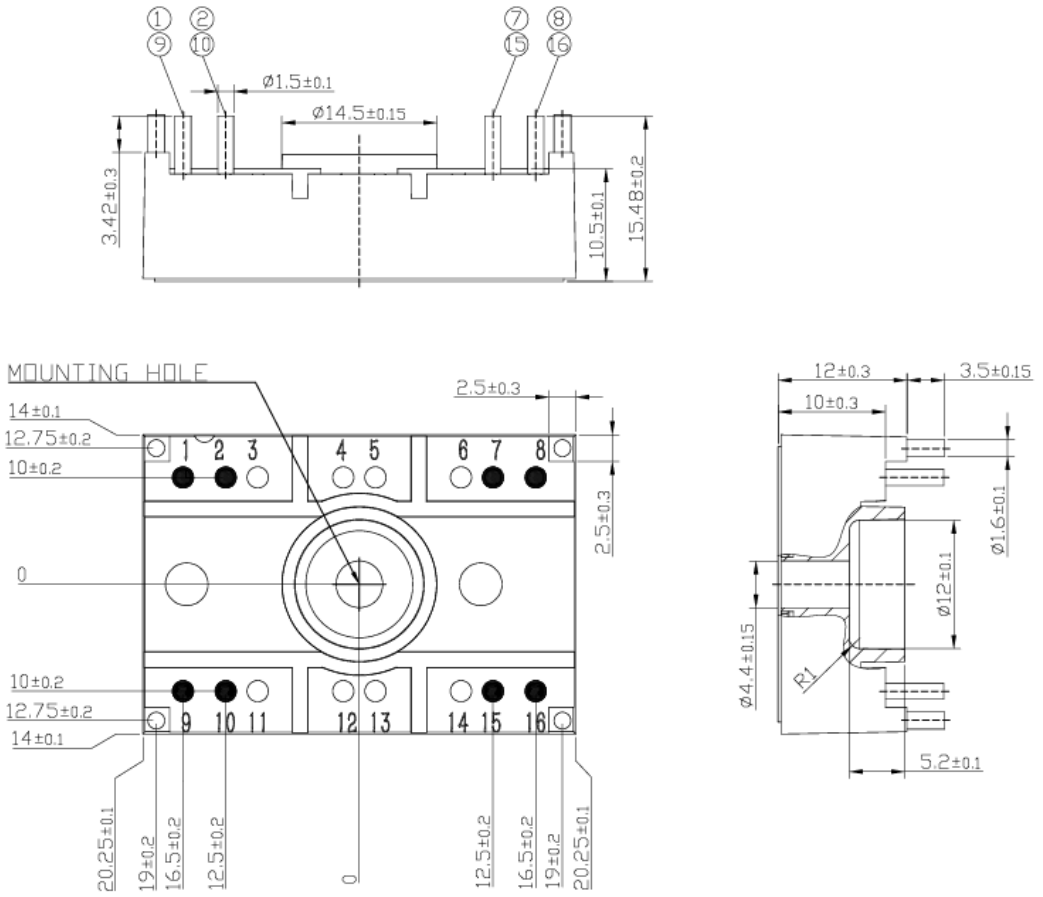
Circuit Diagram



Package Outlines (mm)



Unit of measurement: mm

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