Features

- Half-bridge SCR configuration integrated In a single package
- High-thermal-conductivity DBC insulation for excellent heat dissipation
- Vacuum soldering technology for enhanced reliability

Product Summary

Applications

- Heating control
- Light control system
- DC motor

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
Average forward current	T_C = 85°C	$I_{T(AV)}$	140	A

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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=420A, t_P=380	V_T			1.80	V
Repetitive peak off-state current	V_D = V_{DRM}, T_{vj} = 25	I_{DRM}			100	A
	V_D = V_{DRM}, T_{vj} = 125				40	mA
Reverse leakage current	V_R = V_{RRM}, T_{vj} = 25	I_{RRM}			100	A
	V_R = V_{RRM}, T_{vj} = 125				40	mA
Threshold voltage	For power loss calculation only T_{vj} = 125 ,	V_{TO}			0.89	V
Dynamic resistance	T_{vj} = 125 ,	r_T			2	
Triggering gate current	V_D=12V R_L	I_{GT}	20		120	mA
Holding current	I_T=1A	I_H			250	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			
Triggering gate voltage	V_D=12V R_L	V_{GT}			1.8	V
Non triggering gate voltage	V_D=0.5V_{DRM} Tvj=125	V_{GD}	0.25			V

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

Parameter	Conditions	Symbol	Values			Unit
			Min.	Typ.	Max.	
Thermal resistance, junction to case	per chip	$R_{th(j-c)}$		0.181		/W
Thermal resistance, case to heatsink	per chip	$R_{th(c-s)}$		0.10		/W
Mounting torque	Module and heatsink fixed torque M5	M	4.25		5.75	N·m
	Electrode connection torque M5		2.55		3.45	N·m

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Ordering Information

Device	Marking	Package	Weight	Inner Box	Per Carton
JMT140KH16T1	JMT140KH16T1	T1	100±5g/PCS	10 PCS	120 PCS

Typical Electrical & Thermal Characteristics

FIG.1: Power dissipation vs. on-state current (per thyristor or diode)

FIG.2: Maximum transient thermal impedance junction to case(per thyristor or diode)

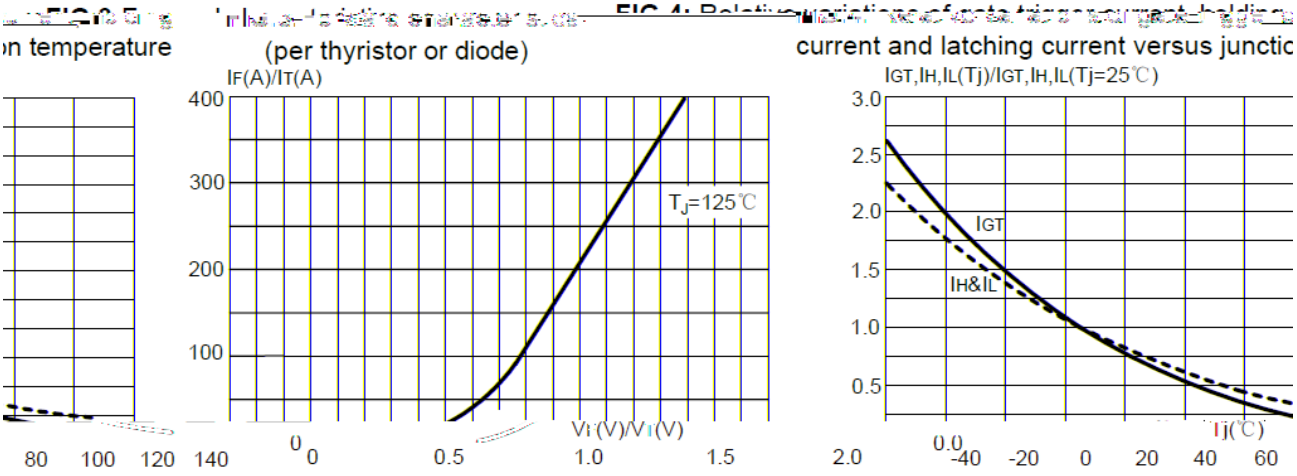


FIG.5 Gate trigger characteristics

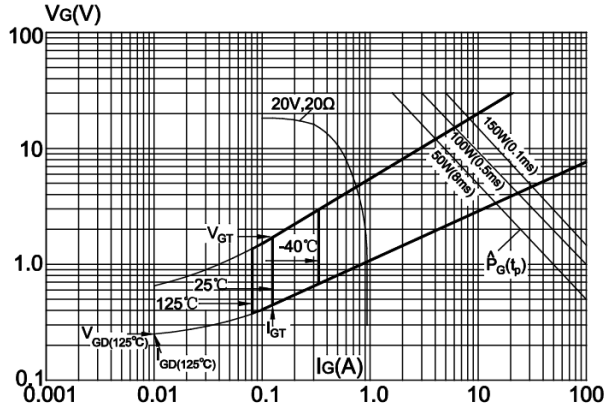
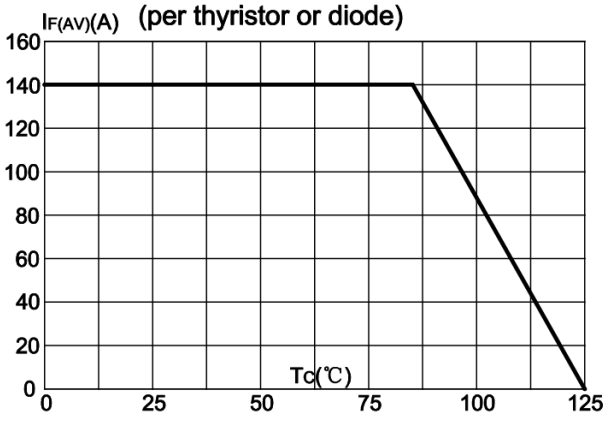
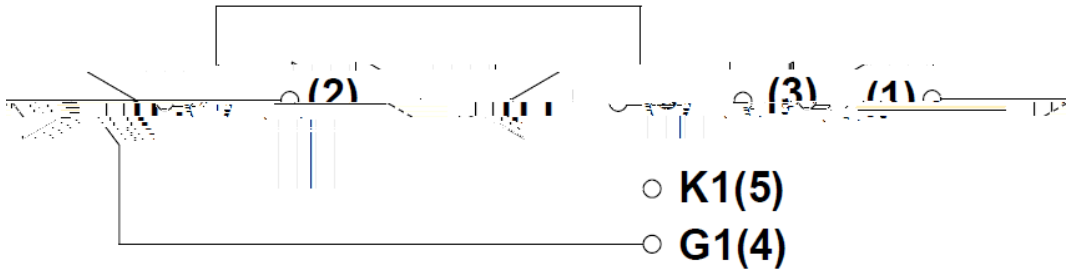


FIG.6: Forward current vs. case temperature (per thyristor or diode)

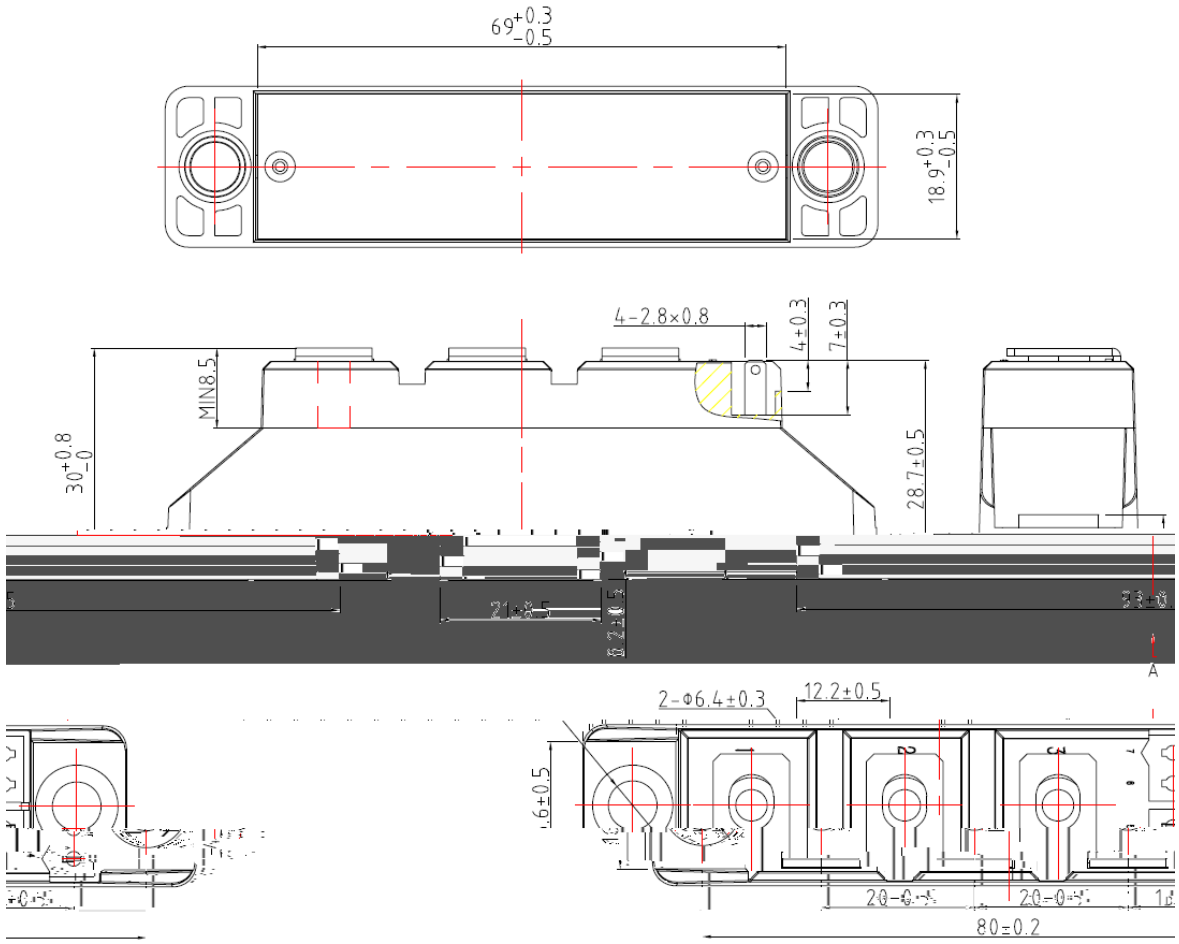


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Circuit Diagram



Package Outlines (mm)



Unit of measurement: mm

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