## 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 | $V_D$=2/3$V_{DRM}$ Tvj=125 Gate Open | dv/dt | 1000 | | | |
| Triggering gate voltage | $V_D$=12V $R_L$ | $V_{GT}$ | | | 1.8 | V |
| Non triggering gate voltage | $V_D$=0.5$V_{DRM}$ 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)

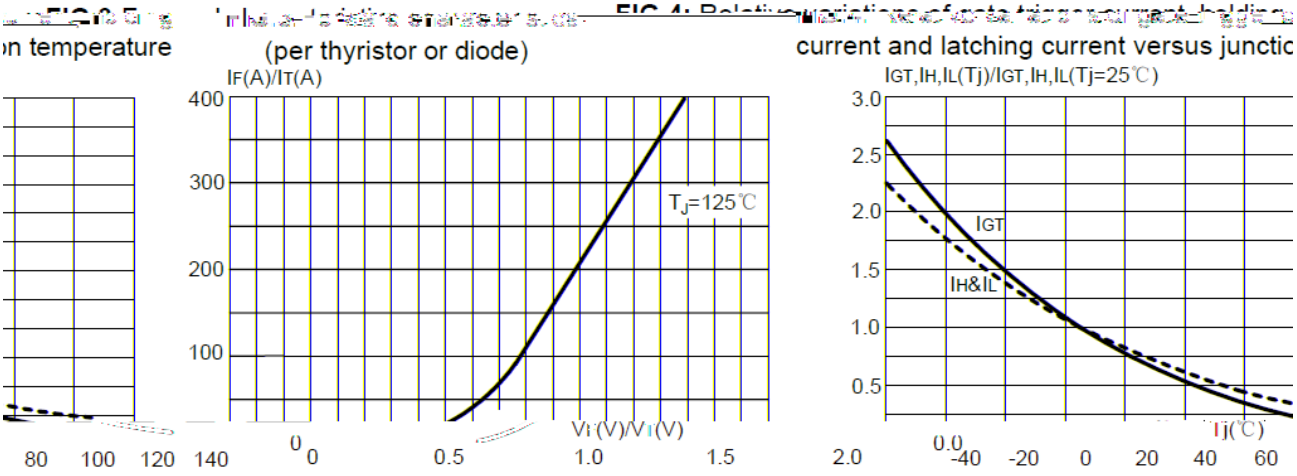



FIG.5 Gate trigger characteristics

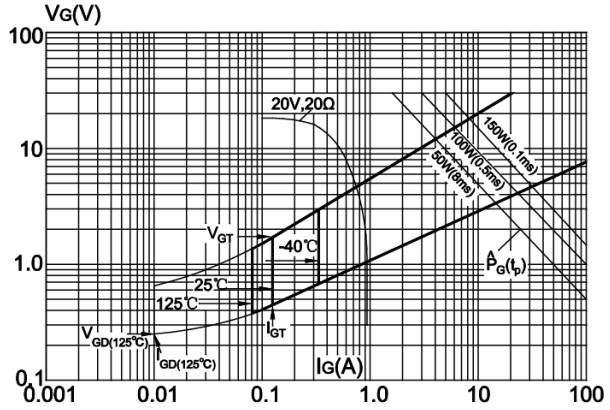
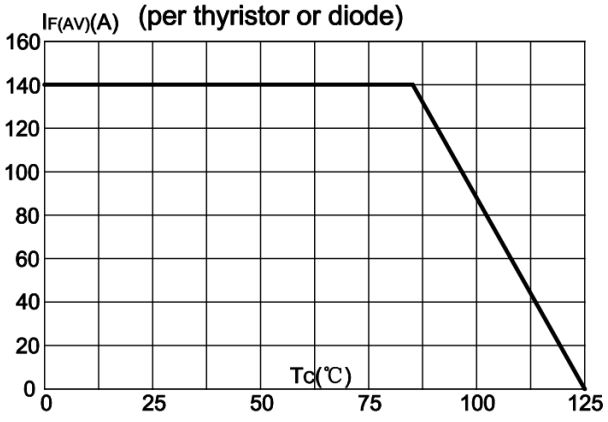



FIG.6: Forward current vs. case temperature (per thyristor or diode)





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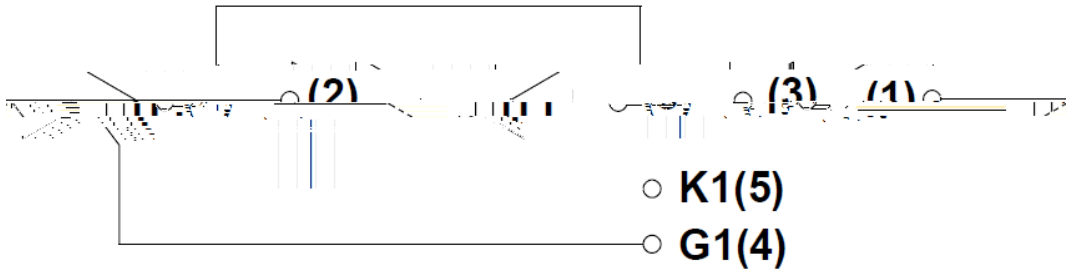
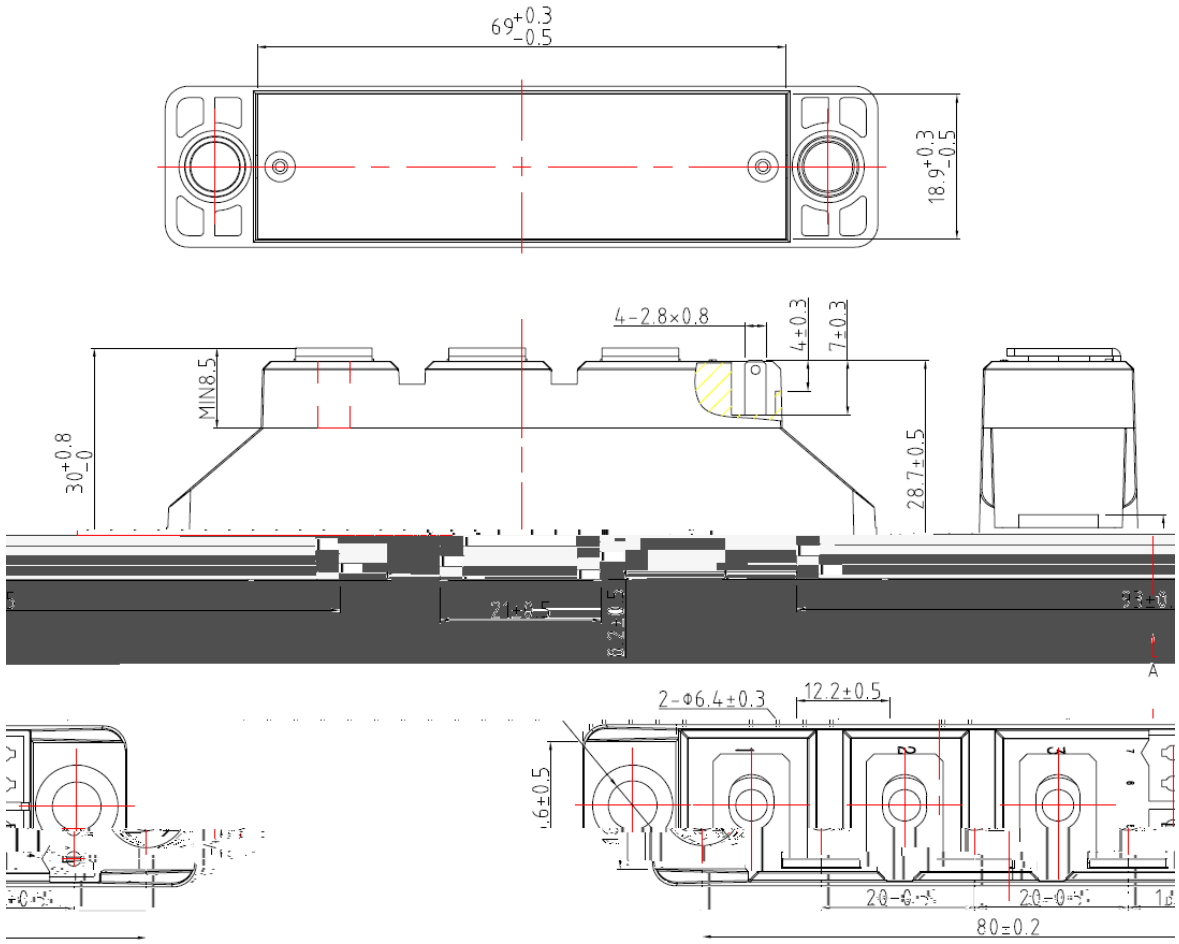
## Circuit Diagram




## Package Outlines (mm)




Unit of measurement: mm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