

Description

- 1) A package of series of two chips.
- 2) With high thermal conductivity DBC as the insulation.
- 3) Welding by vacuum welding technology , which provide high reliability.



Typical Application

DC motor control, temperature control and light control system.

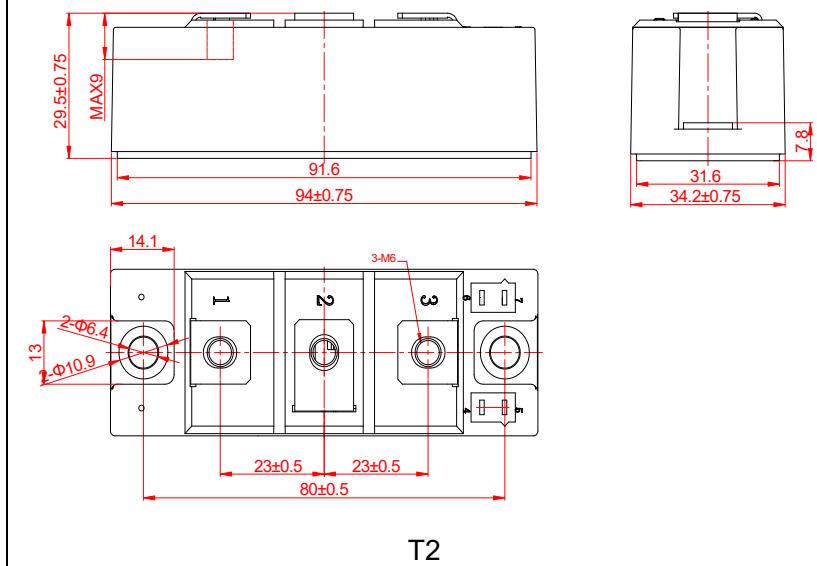
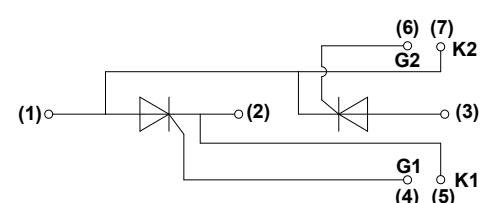
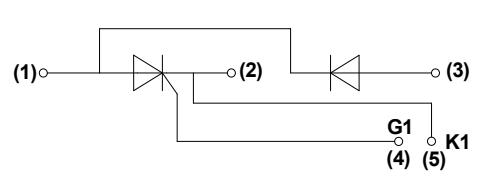
Absolute Maximum Ratings (Packaged into modules, unless otherwise specified, $T_{CASE}=25^{\circ}\text{C}$)

| Parameter | Test Conditions | Symbol | Values | | | Unit |
|---|-----------------------------------|-----------------------|-----------|------|------|------------------------|
| | | | 12 | 16 | 18 | |
| Operating junction temperature range | | T_j | -40~125 | | | °C |
| Storage temperature range | | T_{stg} | -40~125 | | | °C |
| Repetitive peak off-state voltage | $T_j=25^{\circ}\text{C}$ | V_{DRM} | 1200 | 1600 | 1800 | V |
| Repetitive peak reverse voltage | $T_j=25^{\circ}\text{C}$ | V_{RRM} | 1200 | 1600 | 1800 | V |
| Non-repetitive peak off-state voltage | $T_j=25^{\circ}\text{C}$ | V_{DSM} | 1300 | 1700 | 1900 | V |
| Non-repetitive peak reverse voltage | $T_j=25^{\circ}\text{C}$ | V_{RSM} | 1300 | 1700 | 1900 | V |
| Average on-state current | $T_C=85^{\circ}\text{C}$ | $I_{T(AV)}/I_{F(AV)}$ | 130 | | | A |
| Peak on-state surge current | $t_P=10\text{ms } V_R=0.6V_{RRM}$ | I_{TSM}/I_{FSM} | 2600 | | | A |
| I^2t value for fusing | $t_P=10\text{ms } V_R=0.6V_{RRM}$ | I^2t | 33800 | | | A^2s |
| Critical rate of rise of on-state current | $I_G=2 \times I_{GT}$ | dI/dt | 150 | | | $\text{A}/\mu\text{s}$ |
| Insulation voltage | A.C 50Hz(1s/1min) | V_{ISO} | 3600/3000 | | | V |

Electrical Characteristics (Packaged into modules, unless otherwise specified, $T_{CASE}=25^\circ\text{C}$)

| Parameter | Test Conditions | Symbol | Values | Unit |
|-----------------------------------|--|--------------------------------|-------------------------|------------------------------|
| Peak on-state voltage | $I_T=390\text{A}$ $t_P=380\mu\text{s}$ | V_{TM} | ≤ 1.8 | V |
| Threshold voltage | $T_j=125^\circ\text{C}$ | V_{TO} | ≤ 0.89 | V |
| Dynamic resistance | $T_j=125^\circ\text{C}$ | R_d | ≤ 2.1 | $\text{m}\Omega$ |
| Repetitive peak off-state current | $V_D=V_{DRM}$ $T_c=25^\circ\text{C}$ $T_c=125^\circ\text{C}$ | I_{DRM1} I_{DRM2} | ≤ 100 ≤ 50 | μA mA |
| Repetitive peak reverse current | $V_R=V_{RRM}$ $T_c=25^\circ\text{C}$ $T_c=125^\circ\text{C}$ | I_{RRM1} I_{RRM2} | ≤ 100 ≤ 50 | μA mA |
| Triggering gate current | $V_D=12\text{V}$ $R_L=30\Omega$ | I_{GT} | 20-120 | mA |
| Holding current | $I_T=1\text{A}$ | I_H | ≤ 250 | mA |
| Latching current | $I_G=1.2 I_{GT}$ | I_L | ≤ 300 | mA |
| Triggering gate voltage | $V_D=12\text{V}$ $R_L=30\Omega$ | V_{GT} | ≤ 1.8 | V |
| Non triggering gate voltage | $V_D=V_{DRM}$ $T_j=125^\circ\text{C}$ | V_{GD} | ≥ 0.25 | V |
| Critical rate of rise of voltage | $V_D=2/3V_{DRM}$ $T_j=125^\circ\text{C}$ Gate Open | dv/dt | ≥ 1000 | $\text{V}/\mu\text{s}$ |
| Thermal resistance | Junction to case Case to heatsink | $R_{th(j-c)}$ $R_{th(c-s)}$ | 0.21 0.14 | $^\circ\text{C}/\text{W}$ |

Mechanical Characteristics

| | |
|---|-------------|
| Module size | 94mm×34.2mm |
| Module height | 29.5mm |
| Terminal distance of (1) / (2) / (3) | 23mm |
| Mounting torque(M5) | 5±15%Nm |
| Terminal torque(M6) | 5±15%Nm |
|  | |
|  | |
| AKMD symbol | |
|  | |
| AKMH symbol | |

Performance Curves

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

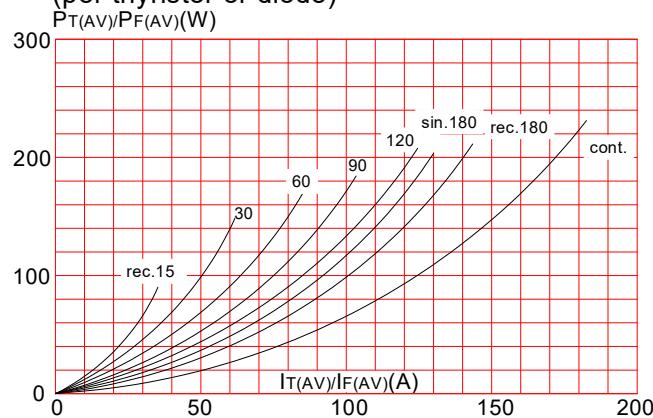


FIG.2: Maximum transient thermal impedance junction to case (per thyristor or diode)

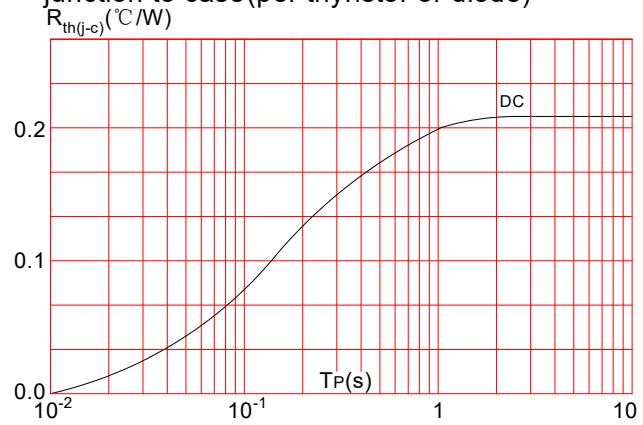


FIG.3:Forward characteristics
(per thyristor or diode)

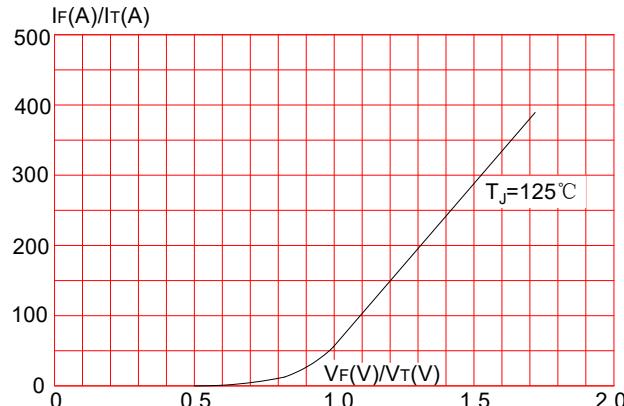
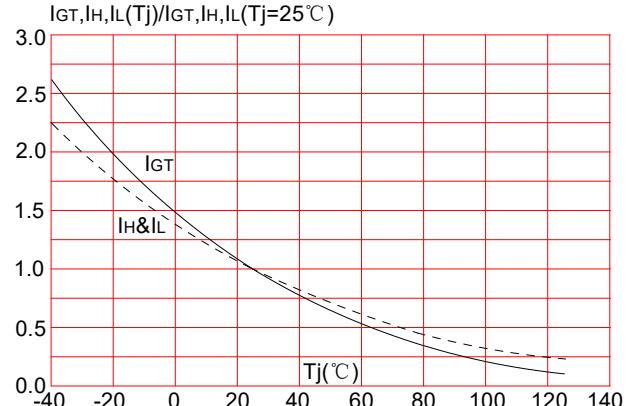


FIG.4: Relative variations of gate trigger current, holding current and latching current versus junction temperature



Ordering Information

