

MITSUBISHI FAST RECOVERY DIODE MODULES

# RM300HA-24F

HIGH SPEED SWITCHING USE  
INSULATED TYPE

RM300HA-24F



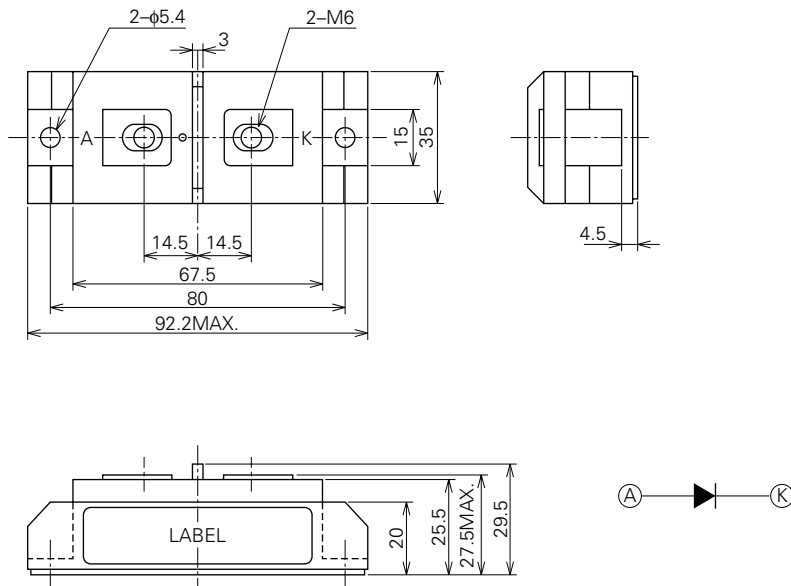
- **Idc** DC current ..... **300A**
- **VRRM** Repetitive peak reverse voltage  
..... **1200V**
- **trr** Reverse recovery time ..... **0.8μs**
- **Insulated Type**
- **UL Recognized**  
Yellow Card No. E80276 (N)  
File No. E80271

## APPLICATION

Free wheel use, Welders

## OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



Feb.1999



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## ABSOLUTE MAXIMUM RATINGS (T<sub>j</sub>=25°C)

| Symbol              | Parameter                           | Voltage class | Unit |
|---------------------|-------------------------------------|---------------|------|
|                     |                                     | 24            |      |
| V <sub>RRM</sub>    | Repetitive peak reverse voltage     | 1200          | V    |
| V <sub>DRM</sub>    | Non-repetitive peak reverse voltage | 1350          | V    |
| V <sub>R (DC)</sub> | Reverse DC voltage                  | 960           | V    |

| Symbol                      | Parameter                              | Conditions                           | Ratings                | Unit             |
|-----------------------------|--|--------------------------------------|------------------------|------------------|
| I <sub>DC</sub>             | DC current                             | Resistive load, T <sub>c</sub> =75°C | 300                    | A                |
| I <sub>FSM</sub>            | Surge (non-repetitive) forward current | One half cycle at 60Hz, peak value   | 3000                   | A                |
| I <sup>2</sup> <sub>t</sub> | I <sup>2</sup> <sub>t</sub> for fusing | Value for one cycle surge current    | 3.75 × 10 <sup>4</sup> | A <sup>2</sup> s |
| T <sub>j</sub>              | Junction temperature                   |                                      | -40~+150               | °C               |
| T <sub>stg</sub>            | Storage temperature                    |                                      | -40~+125               | °C               |
| V <sub>iso</sub>            | Isolation voltage                      | Charged part to case                 | 2500                   | V                |
| —                           | Mounting torque                        | Main terminal screw M6               | 1.96~2.94              | N·m              |
|                             |  | Mounting screw M5                    | 20~30                  | kg·cm            |
| —                           | Weight                                 | Typical value                        | 1.47~1.96              | N·m              |
|                             |  |                                      | 15~20                  | kg·cm            |

## ELECTRICAL CHARACTERISTICS

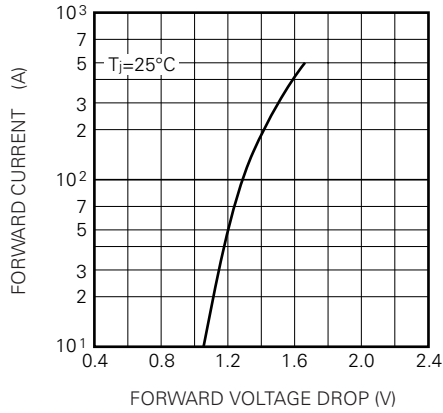
| Symbol                | Parameter                  | Test conditions  | Limits |      |      | Unit |
|-----------------------|----------------------------|--|--------|------|------|------|
|                       |                            |  | Min.   | Typ. | Max. |      |
| I <sub>RRM</sub>      | Repetitive reverse current | T <sub>j</sub> =150°C, V <sub>RRM</sub> applied                                    | —      | —    | 40   | mA   |
| V <sub>FM</sub>       | Forward voltage            | T <sub>j</sub> =25°C, I <sub>FM</sub> =300A, Instantaneous meas.                   | —      | —    | 1.5  | V    |
| t <sub>rr</sub>       | Reverse recovery time      | I <sub>FM</sub> =300A, T <sub>j</sub> =150°C, di/dt=-600A/μs, V <sub>R</sub> =600V | —      | —    | 0.8  | μs   |
| Q <sub>rr</sub>       | Reverse recovery charge    |  | —      | —    | 80   | μC   |
| R <sub>th (j-c)</sub> | Thermal resistance         | Junction to case   | —      | —    | 0.2  | °C/W |
| R <sub>th (c-f)</sub> | Contact thermal resistance | Case to fin, conductive grease applied   | —      | —    | 0.15 | °C/W |

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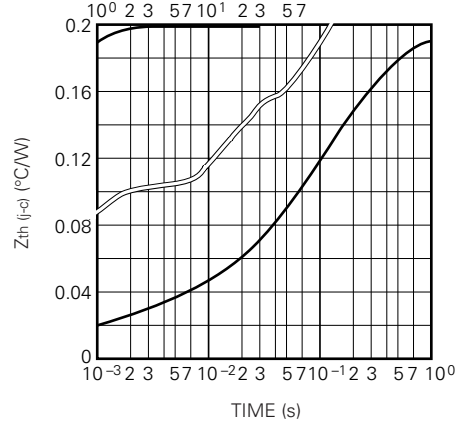
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## PERFORMANCE CURVES

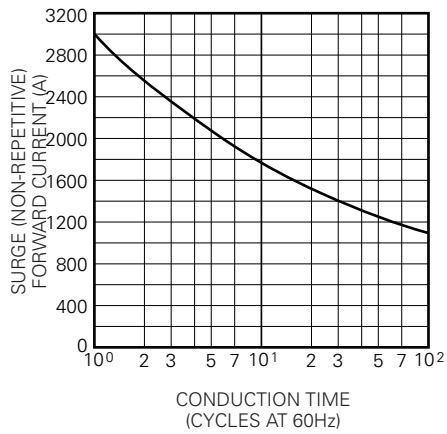
MAXIMUM FORWARD CHARACTERISTIC



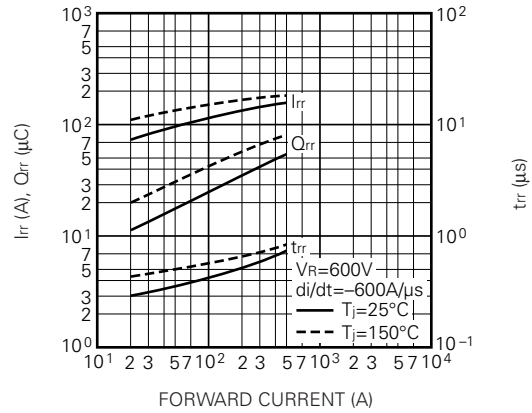
MAXIMUM TRANSIENT THERMAL IMPEDANCE (JUNCTION TO CASE)



RATED SURGE (NON-REPETITIVE) FORWARD CURRENT



REVERSE RECOVERY CHARACTERISTICS VS. FORWARD CURRENT (TYPICAL)



REVERSE RECOVERY CHARACTERISTICS VS. -di/dt (TYPICAL)

