

MITSUBISHI FAST RECOVERY DIODE MODULES
RM50DA/CA/C1A-XXF

HIGH SPEED SWITCHING USE
 INSULATED TYPE

RM50DA/CA/C1A-XXF



- **I_{DC}** DC current **50A**
- **V_{RRM}** Repetitive peak reverse voltage
 .. **600/800/1000/1200V**
- **t_{rr}** Reverse recovery time **0.8μs**
- **Insulated Type**
- **UL Recognized**

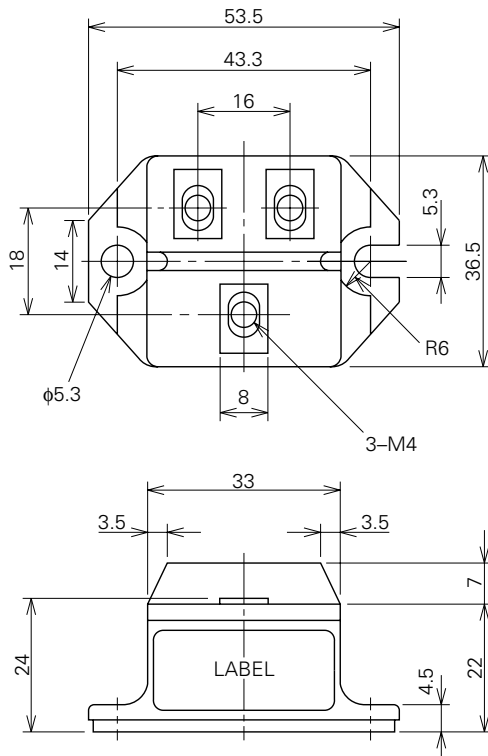
Yellow Card No. E80276 (N)
 File No. E80271

APPLICATION

Free wheel use, Welders

OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



| | |
|-----|--|
| DA | |
| CA | |
| D1A | |

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ABSOLUTE MAXIMUM RATINGS (T_j=25°C)

| Symbol | Parameter | Voltage class | | | | Unit |
|---------------------|-------------------------------------|---------------|-----|------|------|------|
| | | 12 | 16* | 20* | 24 | |
| V _{RRM} | Repetitive peak reverse voltage | 600 | 800 | 1000 | 1200 | V |
| V _{DRM} | Non-repetitive peak reverse voltage | 720 | 960 | 1100 | 1350 | V |
| V _{R (DC)} | Reverse DC voltage | 480 | 640 | 800 | 960 | V |

* Order made

| Symbol | Parameter | Conditions | Ratings | Unit |
|-----------------------------|--|---------------------------------------|---------------------|------------------|
| I _{DC} | DC output current | Resistive load, T _c =105°C | 50 | A |
| I _{FSM} | Surge (non-repetitive) forward current | One half cycle at 60Hz, peak value | 1000 | A |
| I ² _t | I ² _t for fusing | Value for one cycle of surge current | 4.2x10 ³ | A ² s |
| T _j | Junction temperature | | -40~150 | °C |
| T _{stg} | Storage temperature | | -40~125 | °C |
| V _{iso} | Isolation voltage | Charged part to case | 2500 | V |
| — | Mounting torque | Main terminal screw M4 | 0.98~1.47 | N·m |
| | | Mounting screw M5 | 10~15 | kg·cm |
| | | | 1.47~1.96 | N·m |
| — | Weight | Typical value | 15~20 | kg·cm |
| — | Weight | Typical value | 90 | g |

ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|-----------------------|----------------------------|--|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| I _{RRM} | Repetitive reverse current | T _j =150°C, V _{RRM} applied | — | — | 10 | mA |
| V _{FM} | Forward voltage | T _j =25°C, I _{FM} =50A, instantaneous meas. | — | — | 1.5 | V |
| t _{rr} | Reverse recovery time | I _{FM} =50A, di/dt=-100A/μs, V _R =300/600V* ¹ , T _j =150°C | — | — | 0.8 | μs |
| Q _{rr} | Reverse recovery charge | | — | — | 30 | μC |
| R _{th (j-c)} | Thermal resistance | Junction to case | — | — | 0.6 | °C/W |
| R _{th (c-f)} | Contact thermal resistance | Case to fin, conductive grease applied | — | — | 0.3 | °C/W |

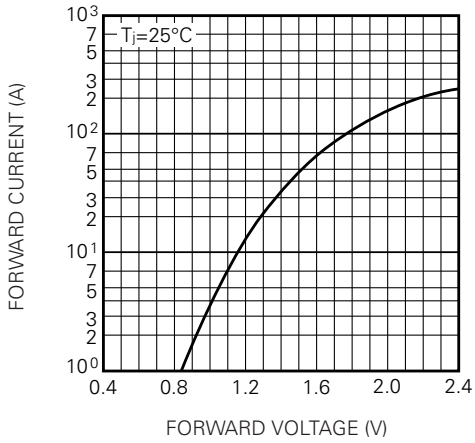
*¹ 12, 16 class: V_R=300V 20, 24 class: V_R=600V

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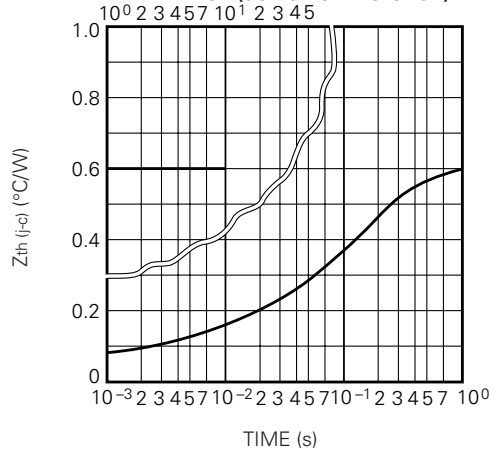
HIGH SPEED SWITCHING USE
INSULATED TYPE

PERFORMANCE CURVE

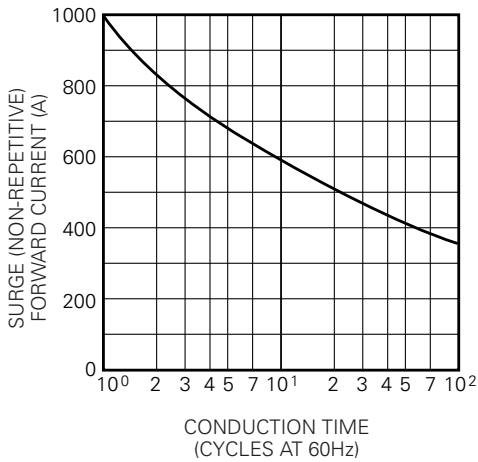
MAXIMUM FORWARD CHARACTERISTIC



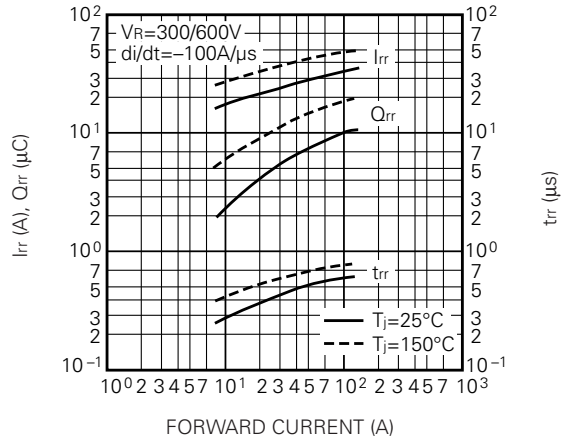
MAXIMUM TRANSIENT THERMAL IMPEDANCE (JUNCTION TO CASE)



RATED SURGE (NON-REPETITIVE) FORWARD CURRENT



REVERSE RECOVERY CHARACTERISTICS VS. FORWARD CURRENT (TYPICAL)



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

