

MITSUBISHI FAST RECOVERY DIODE MODULES
RM20DA/CA/C1A-XXS

MEDIUM POWER, HIGH FREQUENCY USE
 INSULATED TYPE

RM20DA/CA/C1A-XXS



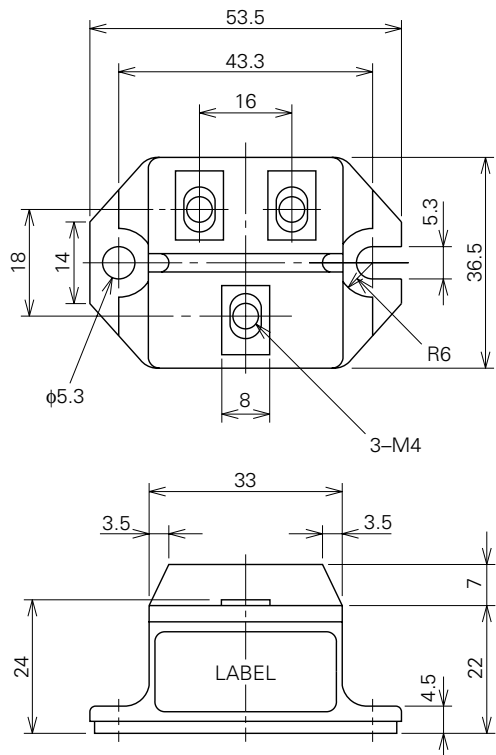
- **Idc** DC current **20A**
- **VRRM** Repetitive peak reverse voltage
 **300/600V**
- **trr** Reverse recovery time **0.4μs**
- **Insulated Type**

APPLICATION

Free wheel use, Welder

OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



| | |
|-----|--|
| CA | |
| C1A | |
| DA | |

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ABSOLUTE MAXIMUM RATINGS (T_j=25°C, unless otherwise noted)

| Symbol | Parameter | Voltage class | | Unit |
|---------------------|-------------------------------------|---------------|-----|------|
| | | 6 | 12 | |
| V _{RRM} | Repetitive peak reverse voltage | 300 | 600 | V |
| V _{DRM} | Non-repetitive peak reverse voltage | 360 | 720 | V |
| V _{R (DC)} | Reverse DC voltage | 240 | 480 | V |

| Symbol | Parameter | Conditions | Ratings | Unit |
|-----------------------------|--|--------------------------------------|---------------------|------------------|
| I _{DC} | DC current | Resistive load, T _c =93°C | 20 | A |
| I _{FSM} | Surge (non-repetitive) forward current | One half cycle at 60Hz, peak value | 400 | A |
| I ² _t | I ² _t for fusing | Value for one cycle of surge current | 6.7×10 ² | 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 |
| | | | 10~15 | kg·cm |
| | | Mounting screw M5 | 1.47~1.96 | N·m |
| | | | 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} =20A, instantaneous meas. | — | 1.6 | 1.8 | V |
| t _{rr} | Reverse recovery time | I _{FM} =20A, di/dt=-50A/μs, V _R =150/300V*1, T _j =25°C | — | — | 0.2 | μs |
| Q _{rr} | Reverse recovery charge | | — | — | 0.5 | μC |
| t _{rr} | Reverse recovery time | I _{FM} =20A, di/dt=-50A/μs, V _R =150/300V*1, T _j =150°C | — | — | 0.4 | μs |
| Q _{rr} | Reverse recovery charge | | — | — | 1.5 | μC |
| R _{th (j-c)} | Thermal resistance | Junction to case | — | — | 1.2 | °C/W |
| R _{th (c-f)} | Contact thermal resistance | Case to fin, conductive grease applied | — | — | 0.3 | °C/W |

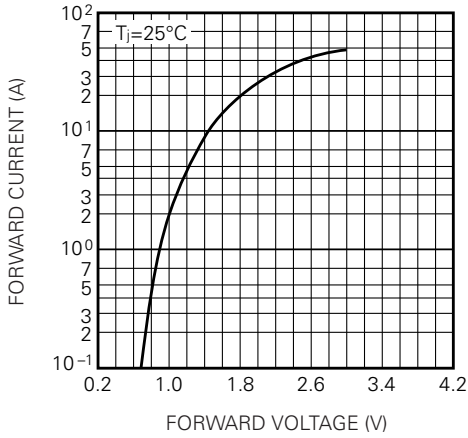
*1 6 class: V_R=150V 12class: V_R=300V

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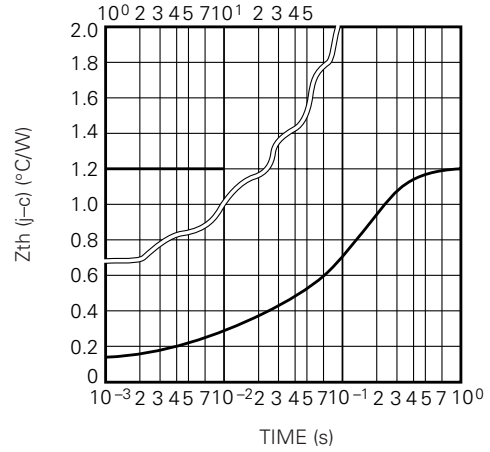
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PERFORMANCE CURVES

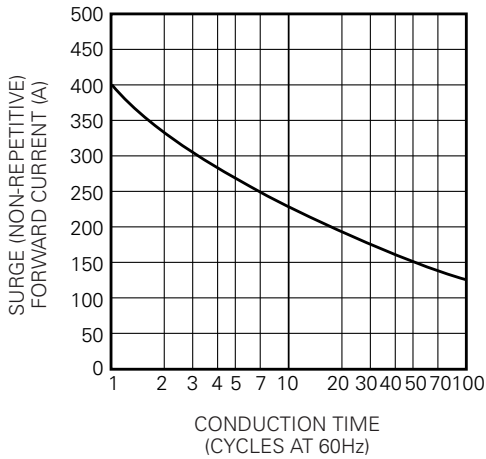
MAXIMUM FORWARD CHARACTERISTIC



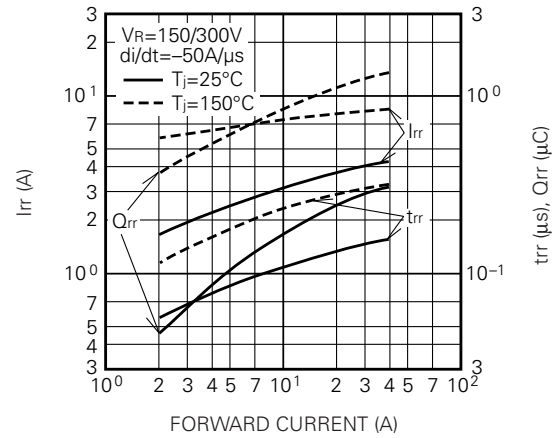
MAXIMUM TRANSIENT THERMAL IMPEDANCE (JUNCTION TO CASE)



ALLOWABLE SURGE (NON-REPETITIVE) FORWARD CURRENT



REVERSE RECOVERY CHARACTERISTICS VS. FORWARD CURRENT (TYPICAL)



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

