MITSUBISHI FAST RECOVERY DIODE MODULES

RM50DA/CA/C1A-XXS

MEDIUM POWER, HIGH FREQUENCY USE
INSULATED TYPE

RM50DA/CA/C1A-XXS



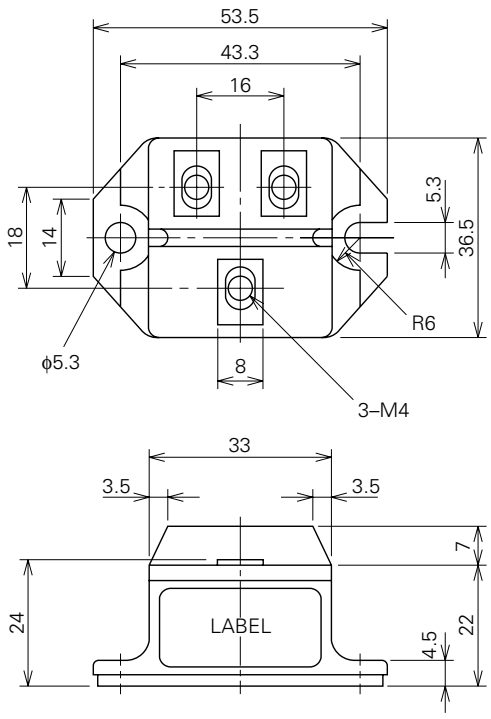
- **I_{DC}** DC current **50A**
- **V_{RRM}** Repetitive peak reverse voltage **300/600V**
- **t_{rr}** Reverse recovery time **0.4μs**
- **Insulated Type**

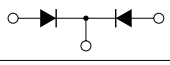
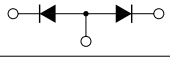
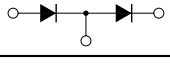
APPLICATION

Free wheel use, Welder

OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



CA	
C1A	
DA	

MITSUBISHI ELECTRIC

RM50DA/CA/C1A-XXS

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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	Reverse DC voltage	240	480	V

Symbol	Parameter	Conditions	Ratings	Unit
I_{DC}	DC current	Resistive load, T_C=93°C	50	A
I_{FSM}	Surge (non-repetitive) forward current	One half cycle at 60Hz, peak value	1000	A
I^2t	I^2t for fusing	Value for one cycle of surge current	4.2×10^3	A^2s
T_j	Junction temperature		–40~150	°C
T_{stg}	Storage temperature		–40~125	°C
V_{iso}	Isolution 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	—	—	20	mA
V_{FM}	Forward voltage	T_j=25°C, I_{FM}=50A, instantaneous meas.	—	1.7	1.8	V
t_{rr}	Reverse recovery time	I_{FM}=50A, di/dt=–100A/µs, V_R=150/300V*1, T_j=25°C	—	—	0.2	µs
Q_{rr}	Reverse recovery charge		—	—	1.5	µC
t_{rr}	Reverse recovery time	I_{FM}=50A, di/dt=–150A/µs, V_R=150/300V*1, T_j=150°C	—	—	0.4	µs
Q_{rr}	Reverse recovery charge		—	—	4.5	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 6 class: V_R=150V 12 class: V_R=300V

MITSUBISHI ELECTRIC

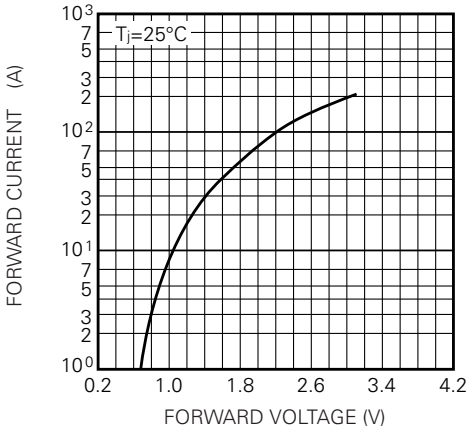
RM50DA/CA/C1A-XXS

MEDIUM POWER, HIGH FREQUENCY USE

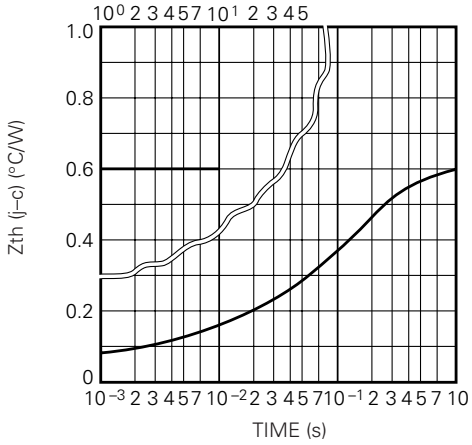
INSULATED TYPE

PERFORMANCE CURVES

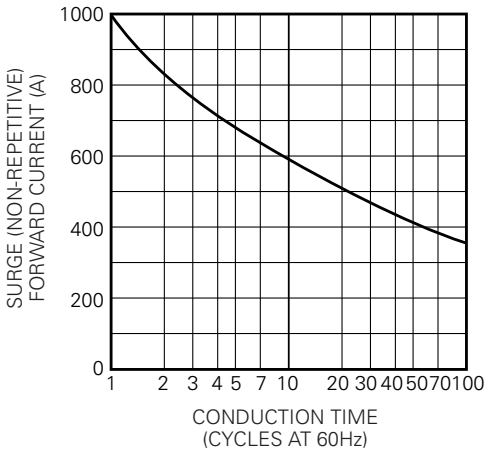
MAXIMUM FORWARD CHARACTERISTIC



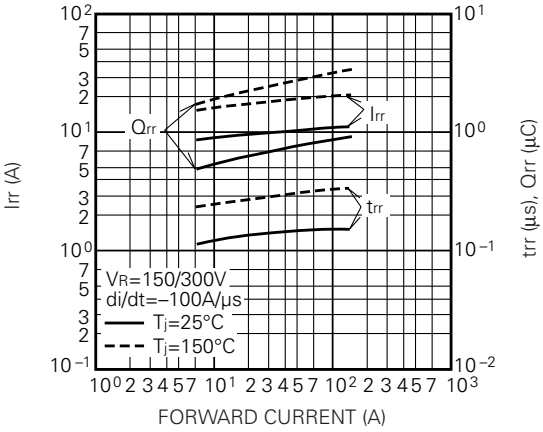
MAXIMUM TRANSIENT THERMAL IMPEDANCE (JUNCTION TO CASE)



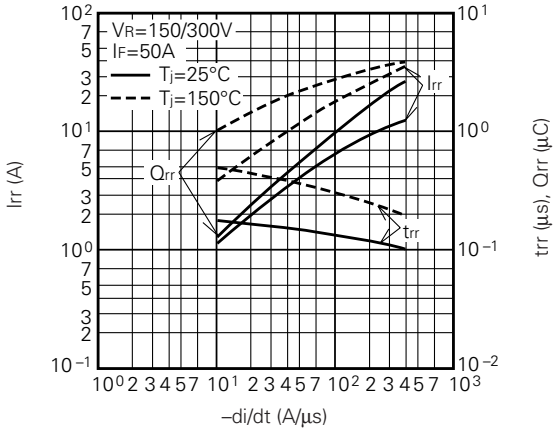
ALLOWABLE SURGE (NON-REPETITIVE) FORWARD CURRENT



REVERSE RECOVERY CHARACTERISTICS VS. FORWARD CURRENT (TYPICAL)



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



MITSUBISHI ELECTRIC