

# MITSUBISHI FAST RECOVERY DIODE MODULES

## RM20DA/CA/C1A-XXF

HIGH SPEED SWITCHING USE  
INSULATED TYPE

### RM20DA/CA/C1A-XXF



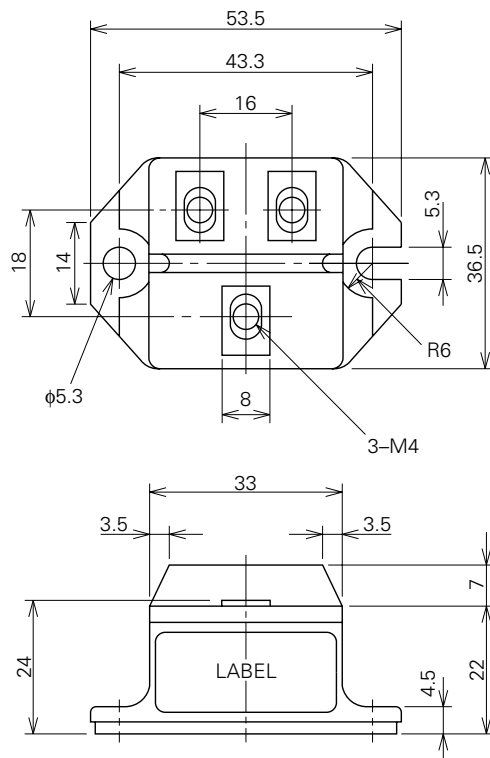
- **Idc** DC current ..... **20A**
- **VRRM** Repetitive peak reverse voltage  
..... **600/800/1000/1200V**
- **trr** Reverse recovery time ..... **0.8μs**
- **Insulated Type**
- **UL Recognized**  
Yellow Card No. E80276 (N)  
File No. E80271

### APPLICATION

Free wheel use, Welders

### OUTLINE DRAWING & CIRCUIT DIAGRAM

Dimensions in mm



DA	
CA	
C1A	

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

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

Symbol	Parameter	Conditions	Ratings	Unit
I <sub>DC</sub>	DC current	Resistive load, T <sub>C</sub> =114°C	20	A
I <sub>FSM</sub>	Surge (non-repetitive) forward current	One half cycle at 60Hz, peak value	400	A
I <sup>2</sup> <sub>t</sub>	I <sup>2</sup> <sub>t</sub> for fusing	Value for one cycle of surge current	6.7×10 <sup>2</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 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

\* Order made

## 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	—	—	5.0	mA
V <sub>FM</sub>	Forward voltage	T <sub>j</sub> =25°C, I <sub>FM</sub> =20A, instantaneous meas.	—	—	1.5	V
t <sub>rr</sub>	Reverse recovery time	I <sub>FM</sub> =20A, di/dt=-50A/μs, V <sub>R</sub> =300/600V*1, T <sub>j</sub> =150°C	—	—	0.8	μs
Q <sub>rr</sub>	Reverse recovery charge		—	—	15	μC
R <sub>th</sub> (j-c)	Thermal resistance	Junction to case	—	—	1.2	°C/W
R <sub>th</sub> (c-f)	Contact thermal resistance	Case to fin, conductive grease applied	—	—	0.3	°C/W

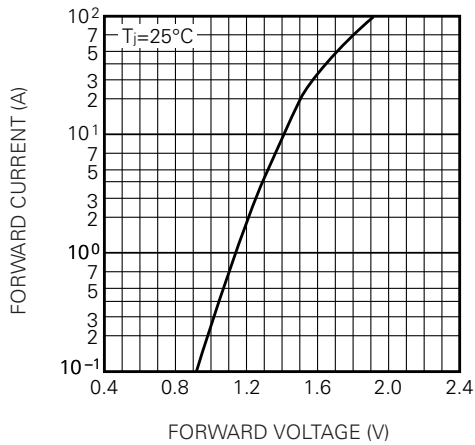
\*1 12, 16 class: V<sub>R</sub>=300V 20, 24 class: V<sub>R</sub>=600V

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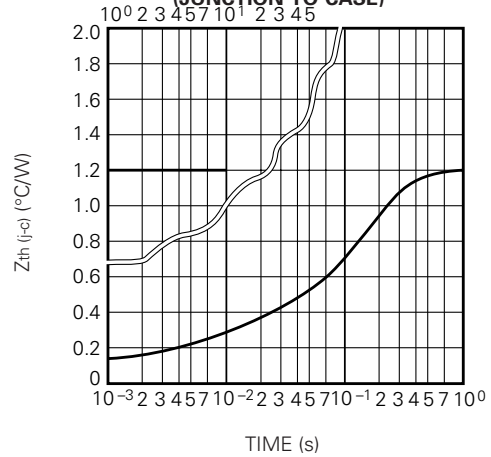
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## PERFORMANCE CURVES

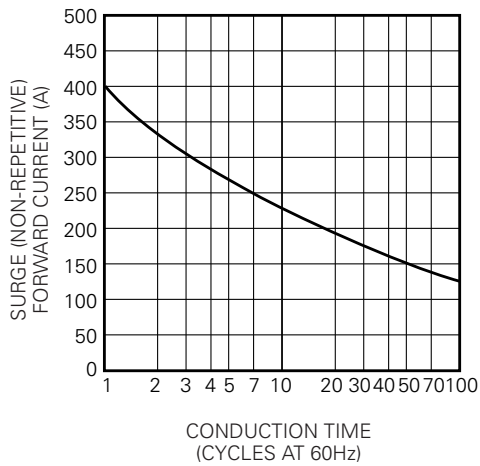
MAXIMUM FORWARD CHARACTERISTIC



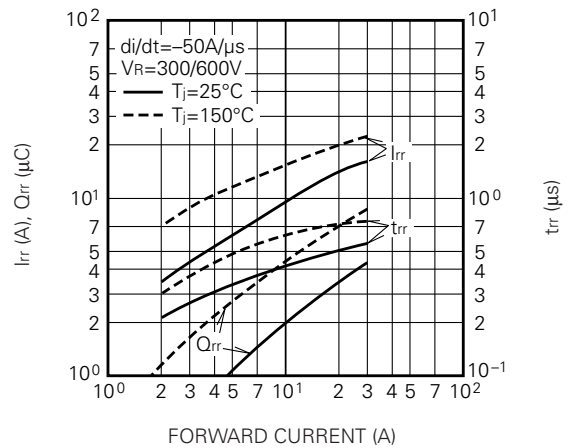
MAXIMUM TRANSIENT THERMAL IMPEDANCE  
(JUNCTION TO CASE)



RATED SURGE (NON-REPETITIVE)  
FORWARD CURRENT



REVERSE RECOVERY CHARACTERISTICS  
VS. FORWARD CURRENT (TYPICAL)



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

