



MM40FU020PC

MM40FU020PC1

200V 40A FRED
RoHS Compliant

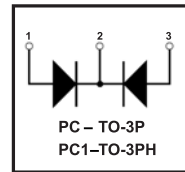
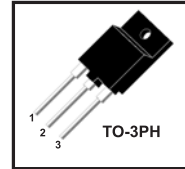
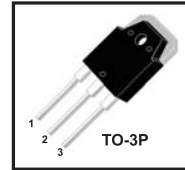
December 2007 PRELIMINARY

PRODUCT FEATURES

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

APPLICATIONS

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS



DESCRIPTION

FRED from MacMic utilizes advanced processing techniques to achieve ultrafast recovery times and higher forward current. Its soft recovery characteristics and high reliability suit for wide industrial applications.

ABSOLUTE MAXIMUM RATINGS

$T_C=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Test Conditions	Max.	Unit
V_{RRM}	Repetitive Reverse Voltage		200	V
$I_{F(AV)}$	Average Forward Current	$T_C=110^{\circ}\text{C}$, Per Diode	20	A
		$T_C=110^{\circ}\text{C}$, Per Package	40	A
$I_{F(RMS)}$	RMS Forward Current	$T_C=110^{\circ}\text{C}$, Per Diode	28	A
		$T_C=110^{\circ}\text{C}$, Per Package	56	A
I_{FSM}	Non-Repetitive Surge Forward Current	$t=10\text{ms}$, Sine	200	A
T_J	Junction Temperature		-40 to +150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature Range		-40 to +150	$^{\circ}\text{C}$

ELECTRICAL AND THERMAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I _{RM}	Reverse Leakage Current	V _R =200V, T _J =25°C		--	--	40	μA
		V _R =200V, T _J =125°C		--	--	250	μA
V _F	Forward Voltage	I _F =20A		--	--	0.95	V
t _{rr}	Reverse Recovery Time (I _F =1A, V _R =30V, di _F /dt=-200A/μs)			--	20	--	ns
t _{rr}	Reverse Recovery Time	I _F =20A	T _J =25°C	--	35	--	ns
t _{rr}	Reverse Recovery Time	V _R =100V	T _J =125°C	--	50	--	ns
I _{RRM}	Max. Reverse Recovery Current	di _F /dt=-200A/μs	T _J =125°C	--	8	--	A
R _{θJC}	Thermal Resistance	MM40FU020PC		--	-	1.0	°C /W
	Junction-to-Case	MM40FU020PC1		--	--	1.5	°C /W

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