Pb Free Plating Product

MM10FU120K

10 Ampere,1200 Volt SwitchMode Single Fast Recovery Epitaxial Diode

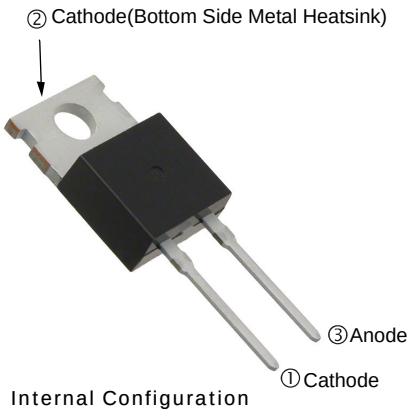
APPLICATION

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

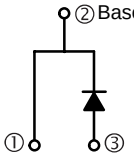
PRODUCT FEATURE

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

TO-220AC/TO-220C-2P



Internal Configuration



GENERAL DESCRIPTION

MM10FU120K using the lastest FRED FAB process(planar passivation chip) with ultrafast and soft recovery characteristic.

ABSOLUTE MAXIMUM RATINGS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
V_R	Maximum D.C. Reverse Voltage		1200	V
V_{RRM}	Maximum Repetitive Reverse Voltage		1200	V
$I_{F(AV)}$	Average Forward Current	T_C=110°C	10	A
$I_{F(RMS)}$	RMS Forward Current	T_C=110°C	15	A
I_{FSM}	Non-Repetitive Surge Forward Current	T_J=45°C, t=10ms, 50Hz, Sine	100	A
P_D	Power Dissipation		70	W
T_J	Junction Temperature		-40 to +150	°C
T_{STG}	Storage Temperature Range		-40 to +150	°C
Torque	Module-to-Sink	Recommended（M3）	1.1	N·m
$R_{\theta JC}$	Thermal Resistance	Junction-to-Case	1.8	°C /W
Weight			2.2	g

ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{RM}	Reverse Leakage Current	V_R=1200V	--	--	100	μA
		V_R=1200V, T_J=125°C	--	--	500	μA
V_F	Forward Voltage	I_F=10A	--	2.4	--	V
		I_F=10A, T_J=125°C	--	1.85	--	V
t_{rr}	Reverse Recovery Time	I_F=1A, V_R=30V, di_F/dt=-200A/μs	--	22	--	ns
t_{rr}	Reverse Recovery Time	V_R=600V, I_F=10A	--	44	--	ns
I_{RRM}	Max. Reverse Recovery Current	di_F/dt=-200A/μs, T_J=25°C	--	3.5	--	A
t_{rr}	Reverse Recovery Time	V_R=600V, I_F=10A	--	220	--	ns
I_{RRM}	Max. Reverse Recovery Current	di_F/dt=-200A/μs, T_J=125°C	--	6.5	--	A

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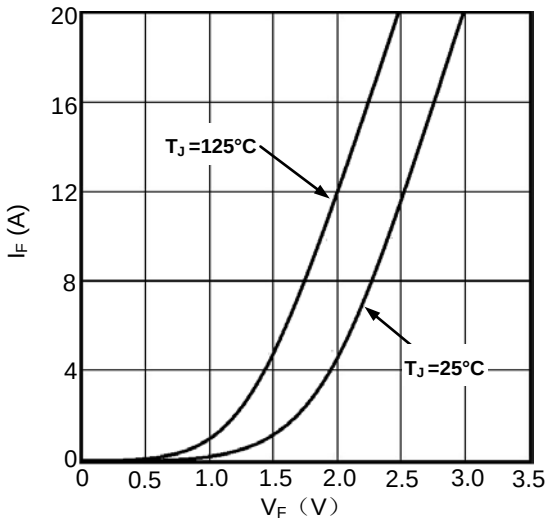


Fig1. Forward Voltage Drop vs Forward Current

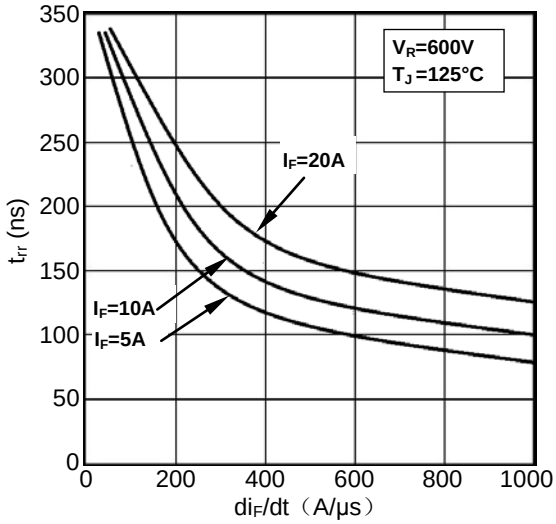


Fig2. Reverse Recovery Time vs di_F/dt

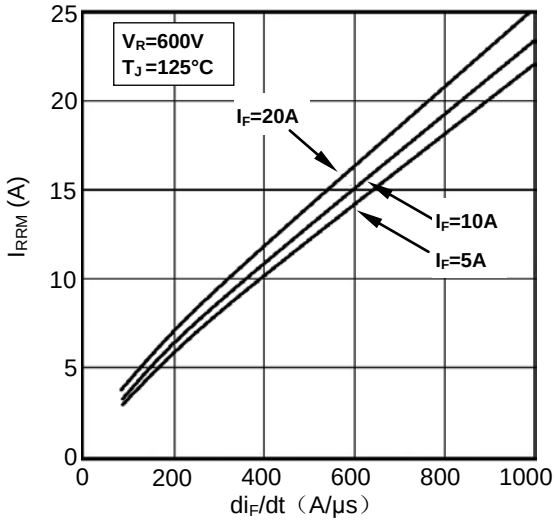


Fig3. Reverse Recovery Current vs di_F/dt

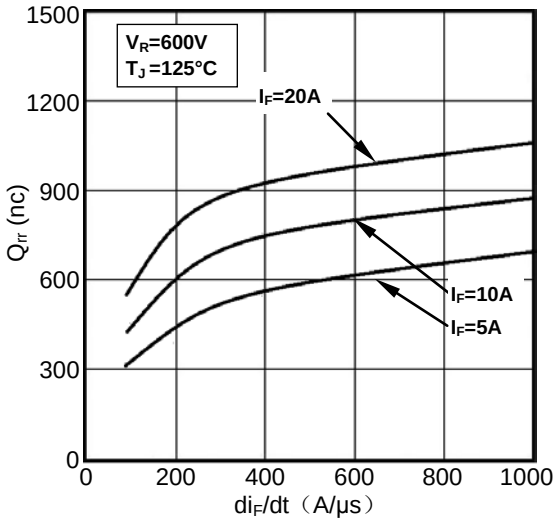


Fig4. Reverse Recovery Charge vs di_F/dt

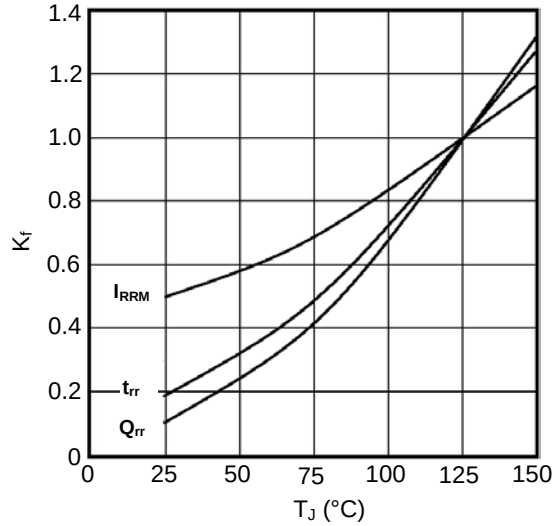
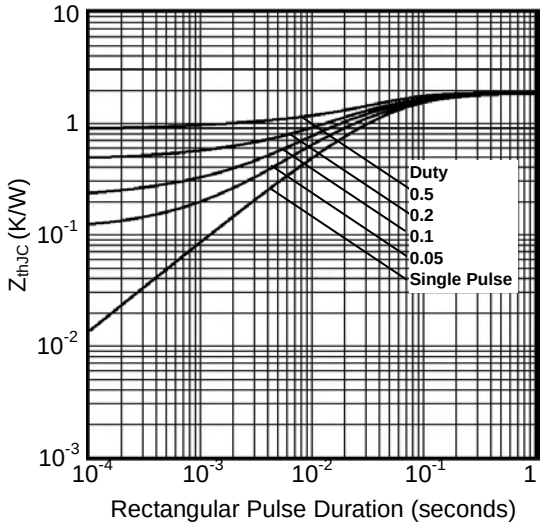


Fig5. Dynamic Parameters vs Junction Temperature



Rectangular Pulse Duration (seconds)

Fig6. Transient Thermal Impedance

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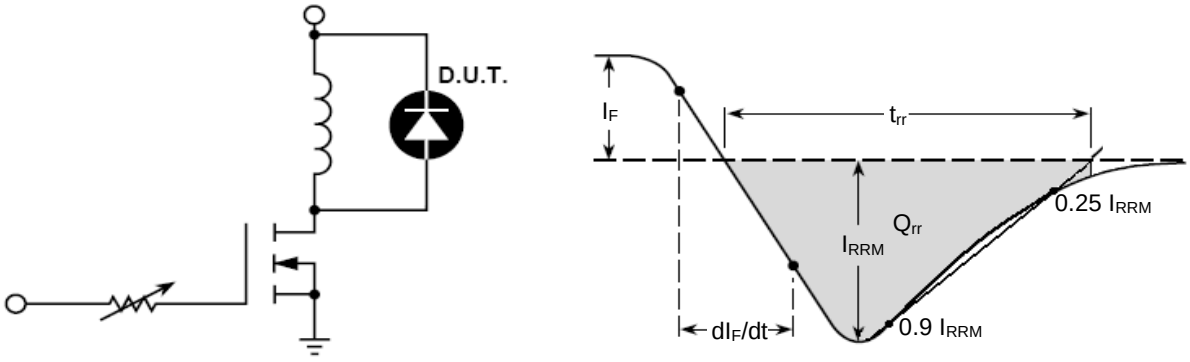
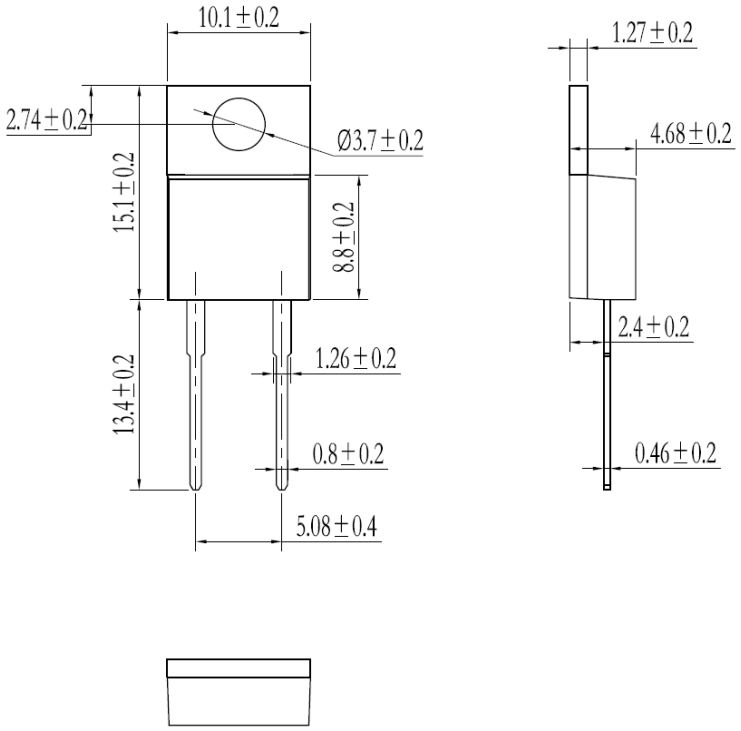


Fig7. Diode Reverse Recovery Test Circuit and Waveform



Dimensions in Millimeters
Fig8. Package Outline

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