RHRP15120

Pb Free Plating Product

15 Ampere,1200 Volt SwitchMode Single Fast Recovery Epitaxial Diode

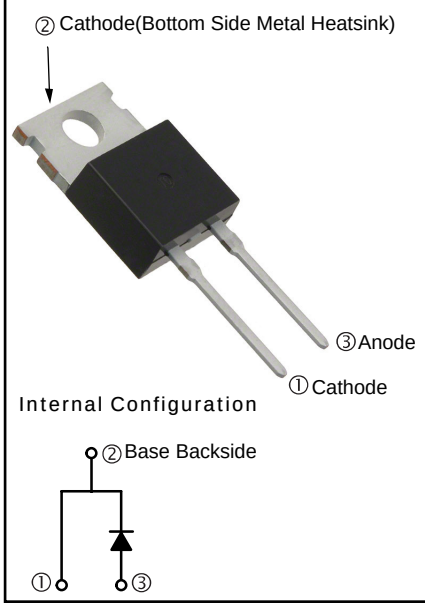
APPLICATION

- 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



GENERAL DESCRIPTION

RHRP15120 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			
$I_{F(AV)}$	Average Forward Current	T_C=100℃	15	A
$I_{F(RMS)}$	RMS Forward Current	T_C=100℃	21	
I_{FSM}	Non Repetitive Surge Forward Current	T_J=45℃,t=10ms, 50Hz, Sine	150	
P_D	Power Dissipation		125	W
T_J	Junction Temperature		-55 to +150	℃
T_{STG}	Storage Temperature Range		-55 to +125	℃
Torque	Module to Sink	Recommended（M3）	1.1	Nm
R_{thJC}	Junction to Case Thermal Resistance		1.0	℃ /W
Weight			2.5	g

ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
I_{RM}	Maximum Reverse Leakage Current	V_R =1200V			10	μA
		V_R =1200V, T_J = 125℃			1	mA
V_F	Forward Voltage	I_F=15A		2.8	3.2	V
		I_F=15A,T_J=125℃		2.3		
trr	Reverse Recovery Time (I_F = 1A, dI_F/dt = -200A/μs, V_R = 30V)			25	30	ns
trr	Reverse Recovery Time (I_F = 0.5A, I_R=1A, I_{RR} = 0.25A)			35	40	ns
trr	Reverse Recovery Time	I_F =15A,V_R =600V,		72		ns
I_{RRM}	Maximum Reverse Recovery Current	dI_F/dt = -200A/μs		5		A
trr	Reverse Recovery Time	I_F = 15A,V_R =600V,		240		ns
I_{RRM}	Maximum Reverse Recovery Current	dI_F/dt = -200A/μs ,T_J=125℃		7.5		A

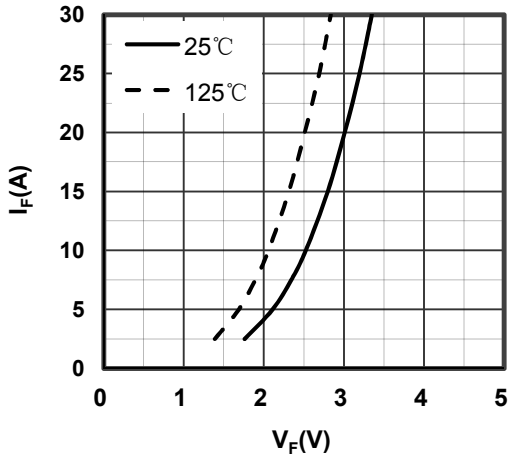


Figure 1. Forward Voltage Drop vs Forward Current

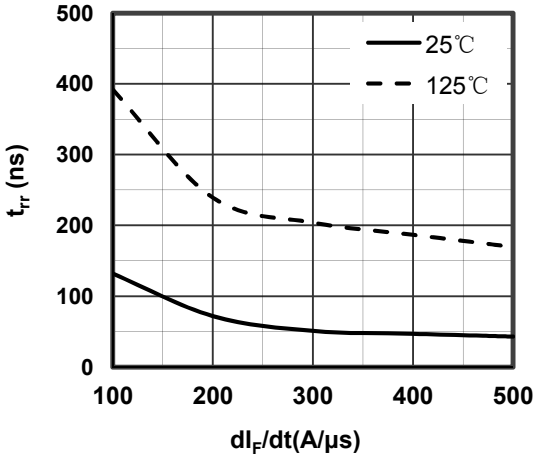


Figure 2. Reverse Recovery Time vs dI_F/dt

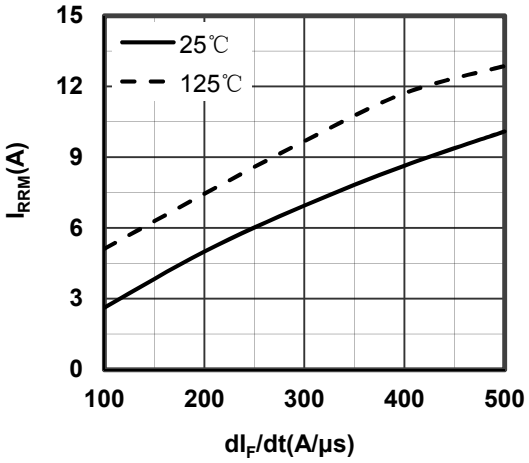


Figure 3. Reverse Recovery Current vs dI_F/dt

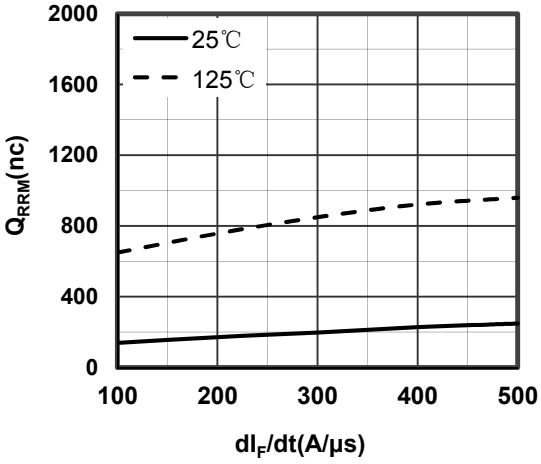


Figure 4. Reverse Recovery Charge vs dI_F/dt

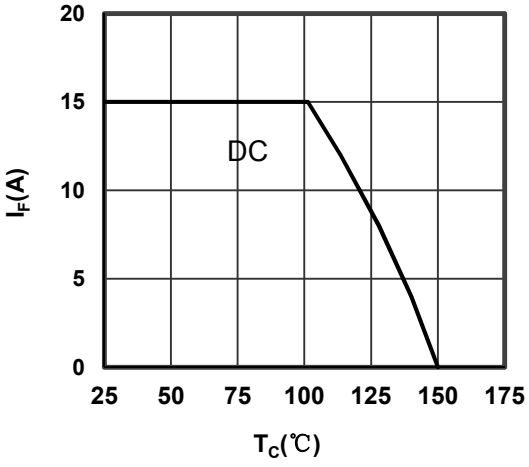


Figure 5.Forward current vs Case temperature

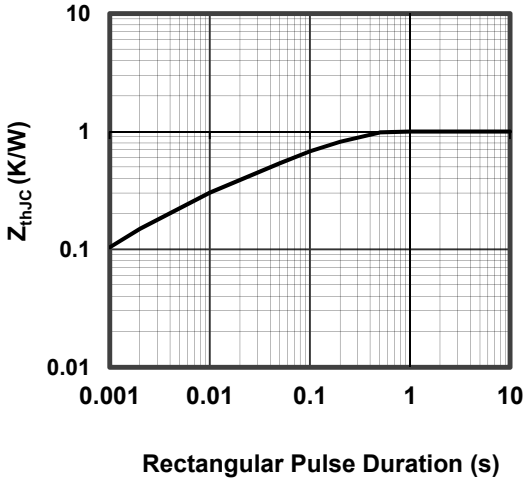


Figure 6.Transient Thermal Impedance

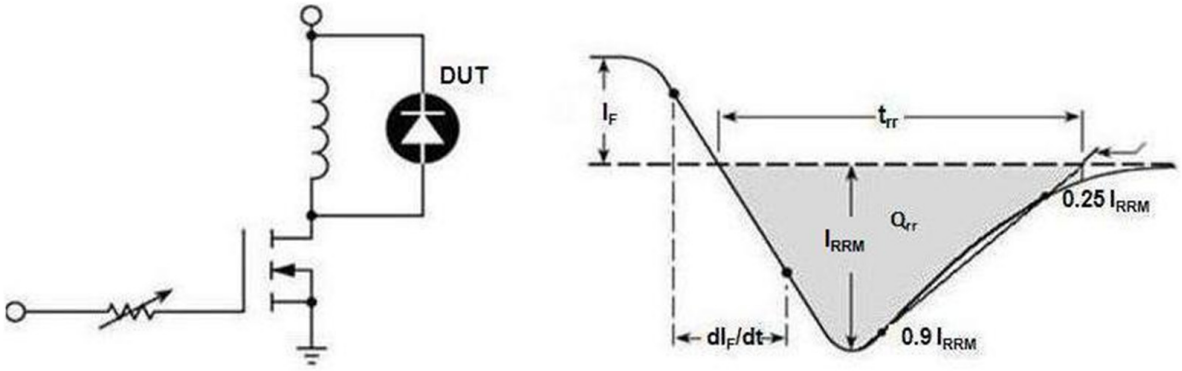
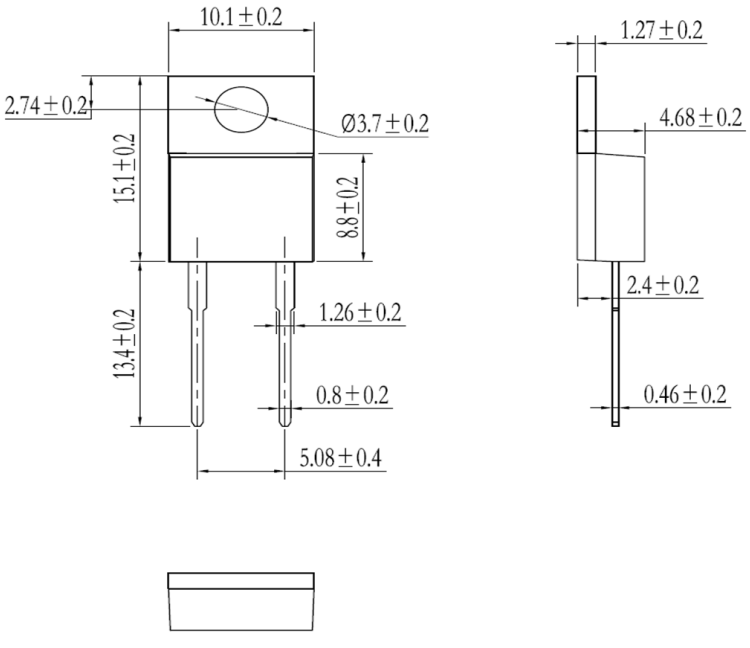


Figure 7. Diode Reverse Recovery Test Circuit and Waveform



Dimensions in (mm)
Figure 8. Package Outline