

PRODUCT FEATURES

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

APPLICATIONS

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



1 2
TO-247-2



1-Cathode
2-Anode

ABSOLUTE MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter/Test Conditions		Values	Unit
V _R	Maximum D.C. Reverse Voltage		600	V
V _{RRM}	Maximum Repetitive Reverse Voltage			
I _{F(AV)}	Average Forward Current	T _C =110℃	30	A
I _{F(RMS)}	RMS Forward Current	T _C =110℃	42	
I _{FSM}	Non Repetitive Surge Forward Current	T _J =25℃,t=10ms, 50Hz, Sine	300	
P _D	Power Dissipation		156	W
T _J	Junction Temperature		-55 to +150	℃
T _{STG}	Storage Temperature Range		-55 to +125	℃
Torque	To Heat Sink	Recommended (M3)	1.1	Nm
R _{thJC}	Junction to Case Thermal Resistance		0.8	℃ /W
Weight			6	g

ELECTRICAL CHARACTERISTICS ($T_C=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
I_{RM}	Maximum Reverse Leakage Current	$V_R=600\text{V}$			15	μA
		$V_R=600\text{V}, T_J=125^{\circ}\text{C}$			250	μA
V_F	Forward Voltage	$I_F=30\text{A}$		1.5	1.8	V
		$I_F=30\text{A}, T_J=125^{\circ}\text{C}$		1.3		
t_{rr}	Reverse Recovery Time ($I_F=1\text{A}, di_F/dt=-200\text{A}/\mu\text{s}, V_R=30\text{V}$)			22	27	ns
t_{rr}	Reverse Recovery Time ($I_F=0.5\text{A}, I_R=1\text{A}, I_{RR}=0.25\text{A}$)			35	45	ns

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter/Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	Reverse Recovery Time	$I_F=30\text{A}, V_R=300\text{V},$ $di_F/dt = -200\text{A}/\mu\text{s}$		70		ns
I_{RRM}	Maximum Reverse Recovery Current			4		A
Q_{RR}	Reverse Recovery Charge			210		nC
t_{rr}	Reverse Recovery Time	$I_F=30\text{A}, V_R=300\text{V},$ $di_F/dt = -200\text{A}/\mu\text{s}, T_J=125^\circ\text{C}$		156		ns
I_{RRM}	Maximum Reverse Recovery Current			8.5		A
Q_{RR}	Reverse Recovery Charge			720		nC

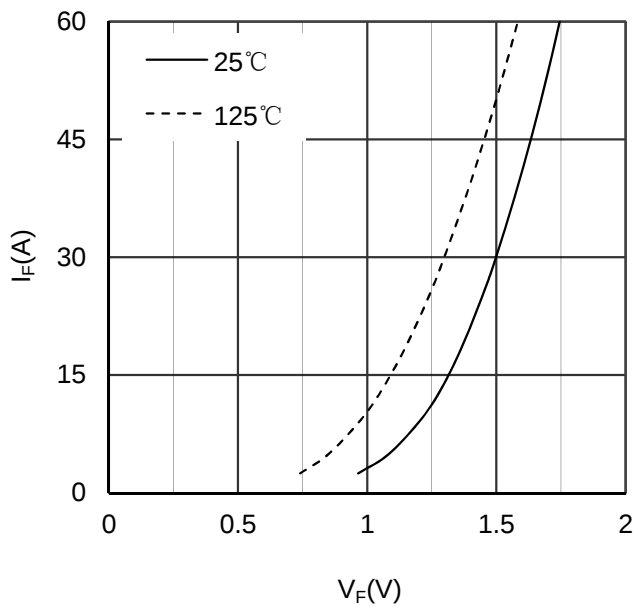
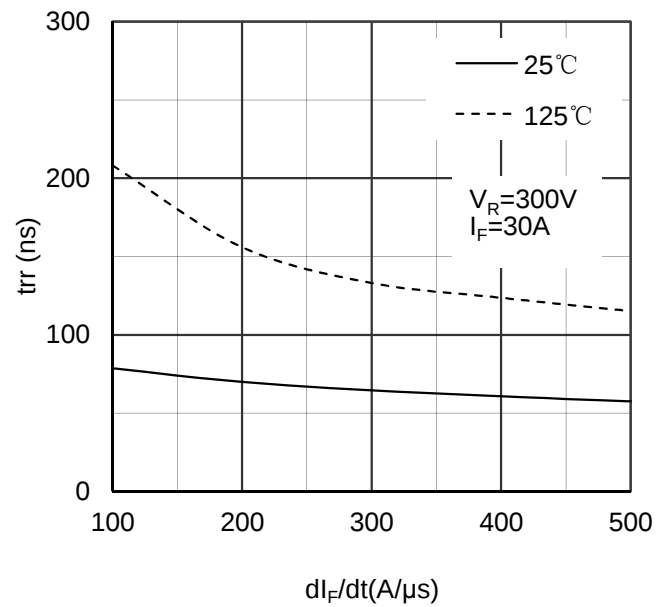
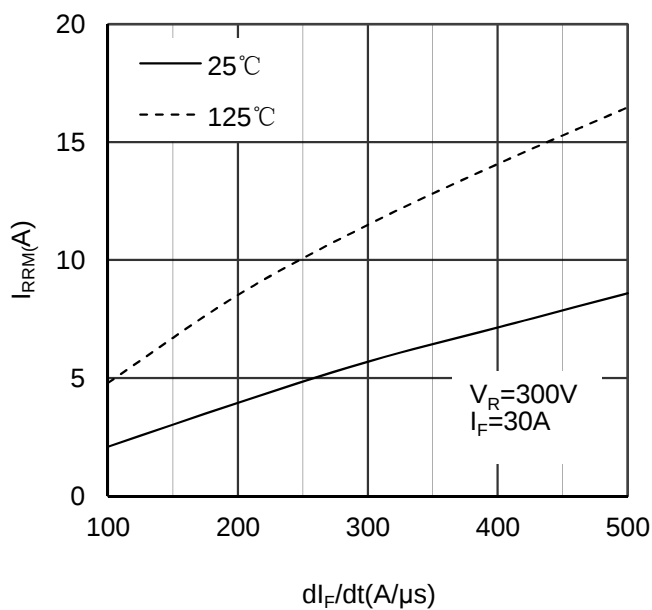
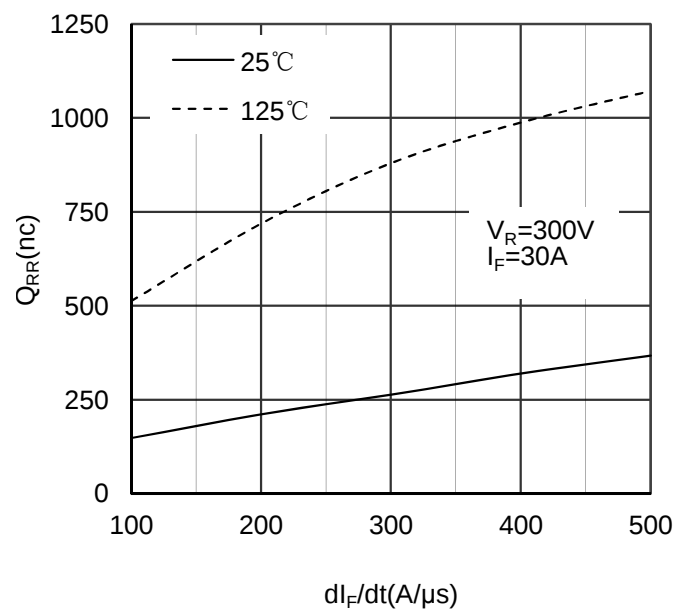


Figure 1. Forward Voltage Drop vs Forward Current


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

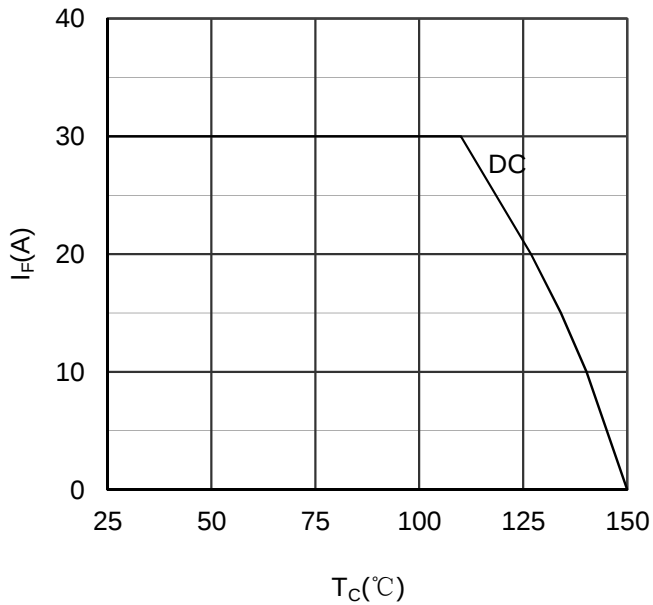


Figure 5. Forward current vs Case temperature

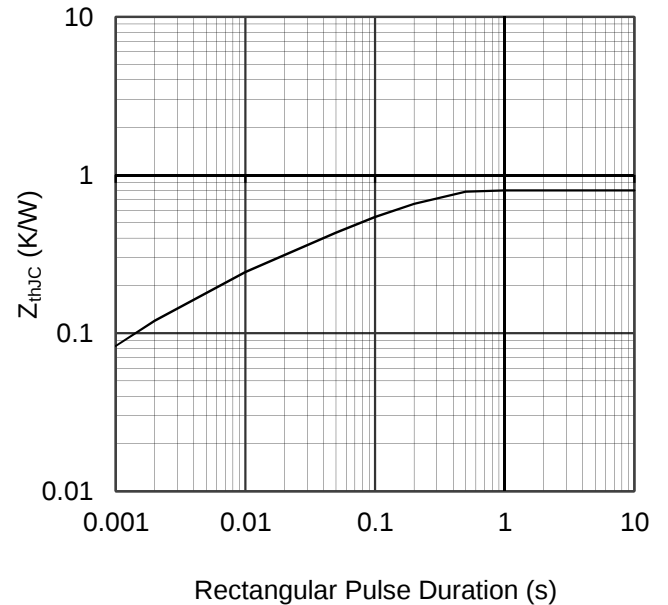


Figure 6. Transient Thermal Impedance

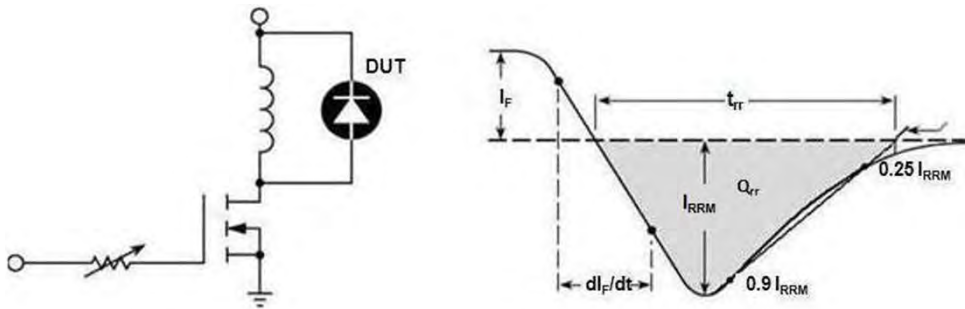
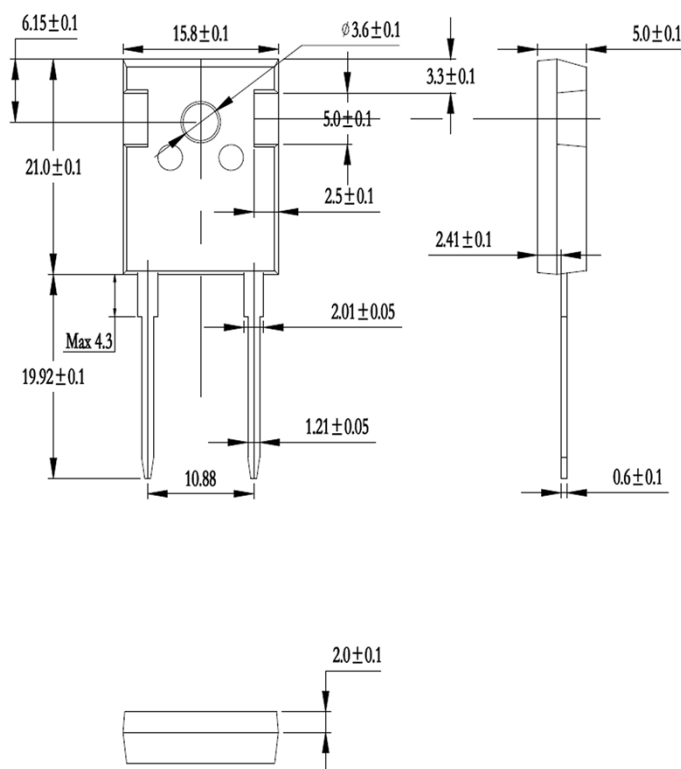


Figure 7. Diode Reverse Recovery Test Circuit and Waveform



Dimensions in (mm)

Figure 8. Package Outline