

VRRM	IF (TC≤135°C)	QC
650V	50A	125nC

Applications:

- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

Features:

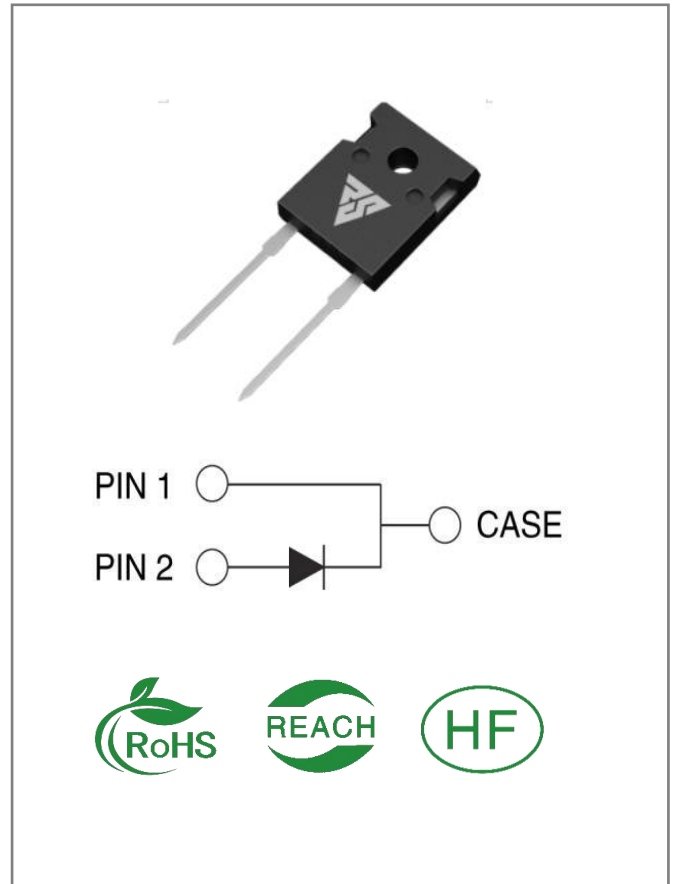
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on VF
- Temperature-independent Switching
- 175°C Operating Junction Temperature

Benefits:

- Replace Bipolar with Unipolar Device
- Reduction of Heat Sink Size
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

Ordering Information

Part Number	Package	Marking	Packing	Qty.
RSS50065W	TO-247-2	RSS50065W	Tube	30 PCS



Maximum Ratings (T_J= 25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
VRRM	Repetitive Peak Reverse Voltage	650	V	TC = 25°C	
VRSM	Surge Peak Reverse Voltage	650	V	TC = 25°C	
VR	DC Blocking Voltage	650	V	TC = 25°C	
IF	Forward Current	105	A	TC ≤ 25°C	Fig. 3
		50		TC ≤ 135°C	
IFSM	Non-Repetitive Forward Surge Current	270	A	TC = 25°C, tp = 10ms, Half Sine Wave	
		245		TC = 110°C, tp = 10ms, Half Sine Wave	
IFRM	Repetitive Peak Forward Surge Current	240	A	TC = 25°C, tp = 10ms, Half Sine Wave	
Ptot	Power Dissipation	390	W	TC = 25°C	Fig. 4
TC	Maximum Case Temperature	135	°C		
TJ,TSTG	Operating Junction and Storage Temperature	-55 to 175	°C		

Electrical Characteristics (T_J= 25°C unless otherwise specified)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
VF	Forward Voltage	1.5 2.0	1.7 -	V	IF = 50A, T _J = 25°C IF = 50A, T _J = 175°C	Fig.1
IR	Reverse Current	8 30	100 -	μA	VR = 650V, T _J = 25°C VR = 650V, T _J = 175°C	Fig.2
C	Total Capacitance	1748 241 139	/	pF	VR = 1V, T _J = 25°C, f = 1MHz VR = 200V, T _J = 25°C, f = 1MHz VR = 400V, T _J = 25°C, f = 1MHz	Fig.5
QC	Total Capacitive Charge	125	/	nC	VR = 400V,	Fig.6
Ec	Capacitance Stored Energy	20		uJ	VR = 400V,	Fig.7

Thermal Characteristics (T_J= 25°C unless otherwise specified)

Symbol	Parameter	Typ.	Unit	Note
RθJC	Thermal Resistance from Junction to Case	0.385	°C/W	Fig.8

Typical Feature Curve

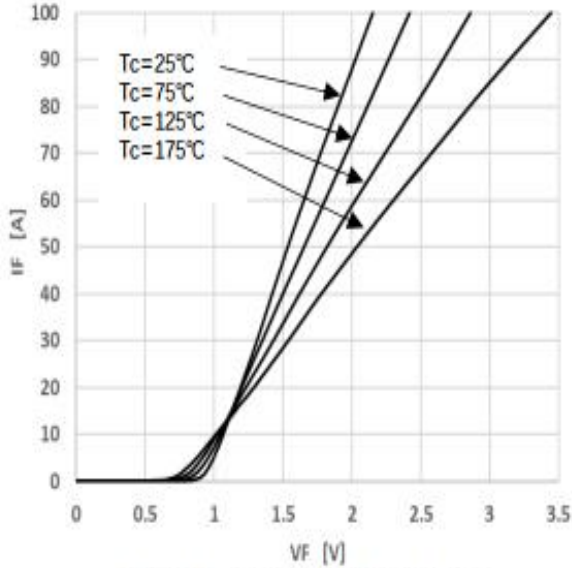


Figure 1 Forward Characteristics

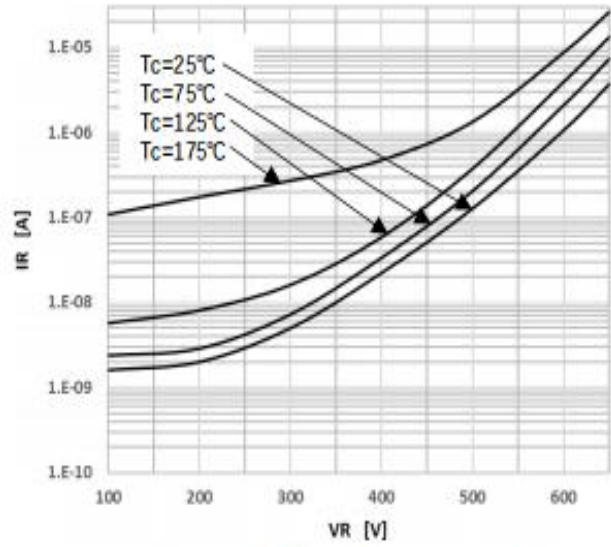


Figure 2 Reverse Characteristics

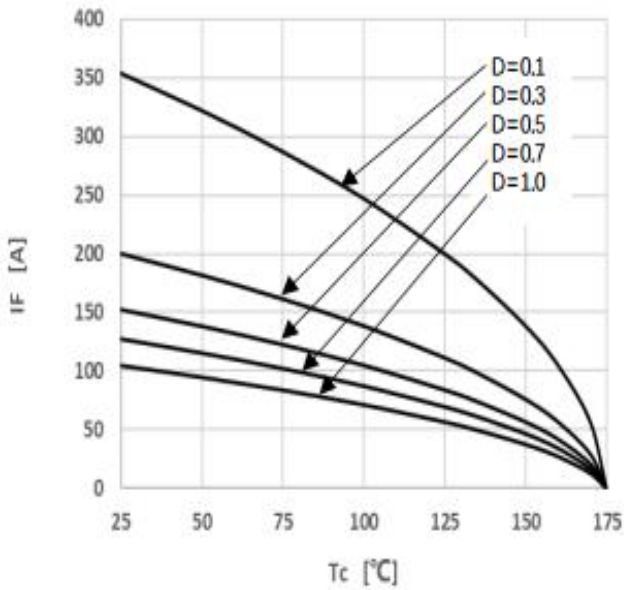


Figure 3 Peak Forward Current Derating

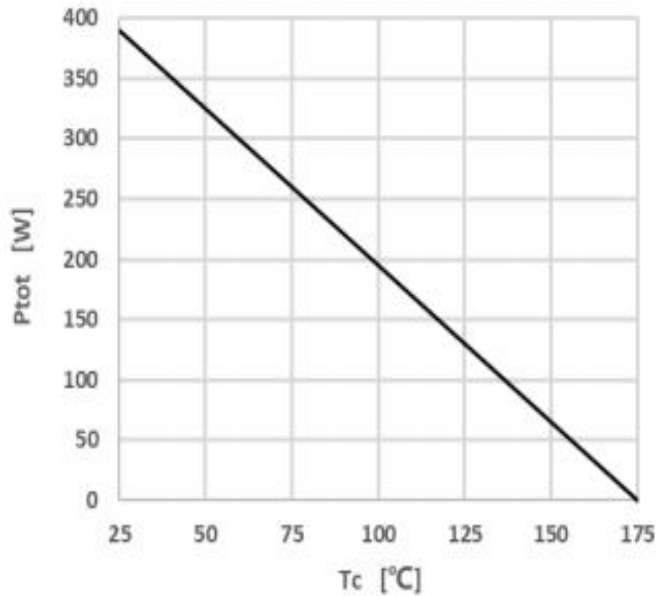


Figure 4 Power Dissipation

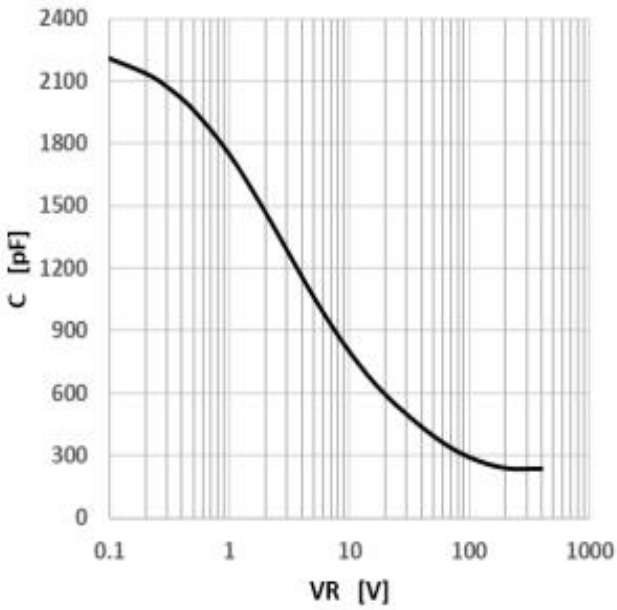


Figure 5 Capacitance vs. Reverse Voltage

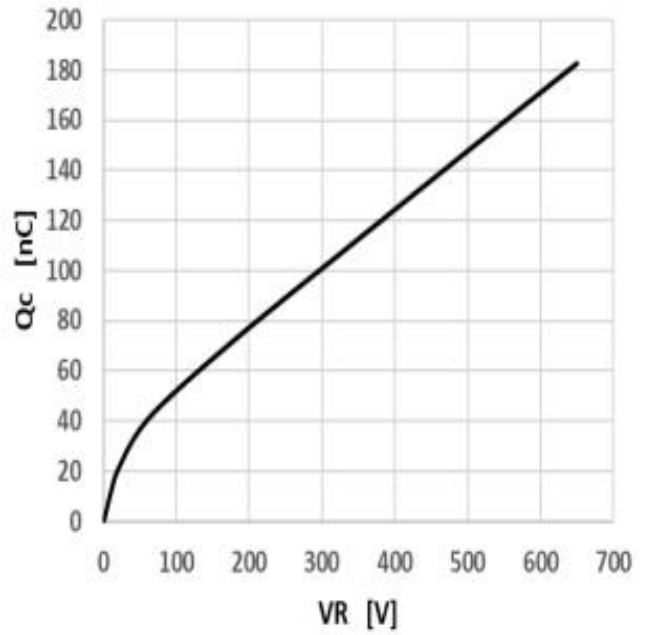


Figure 6 Capacitance Charge vs. Reverse Voltage

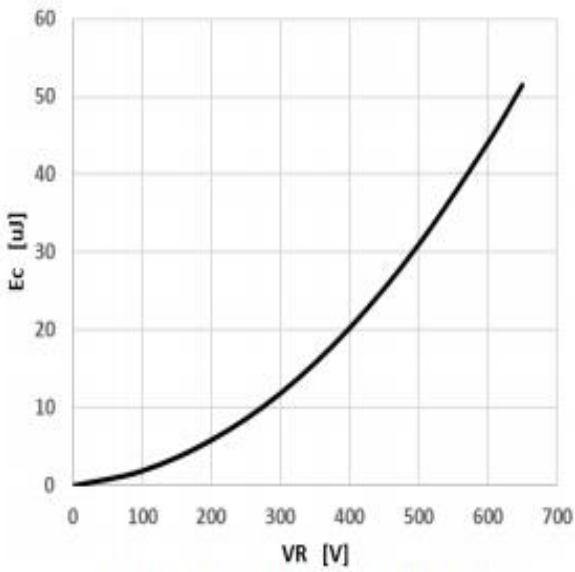


Figure 7 Capacitance Stored Energy

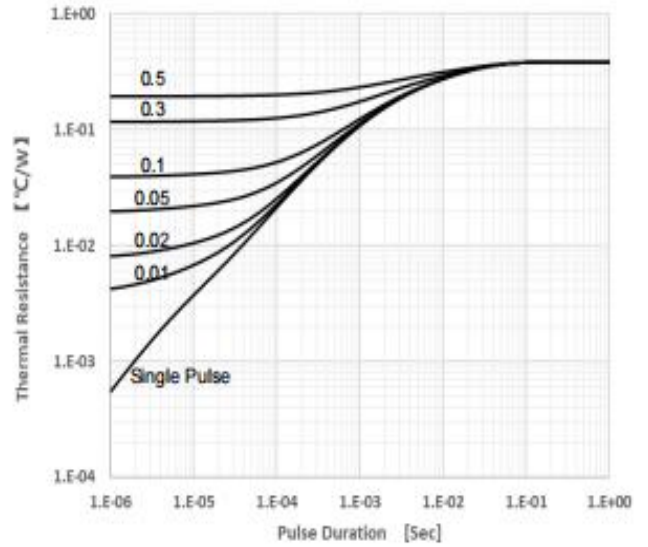
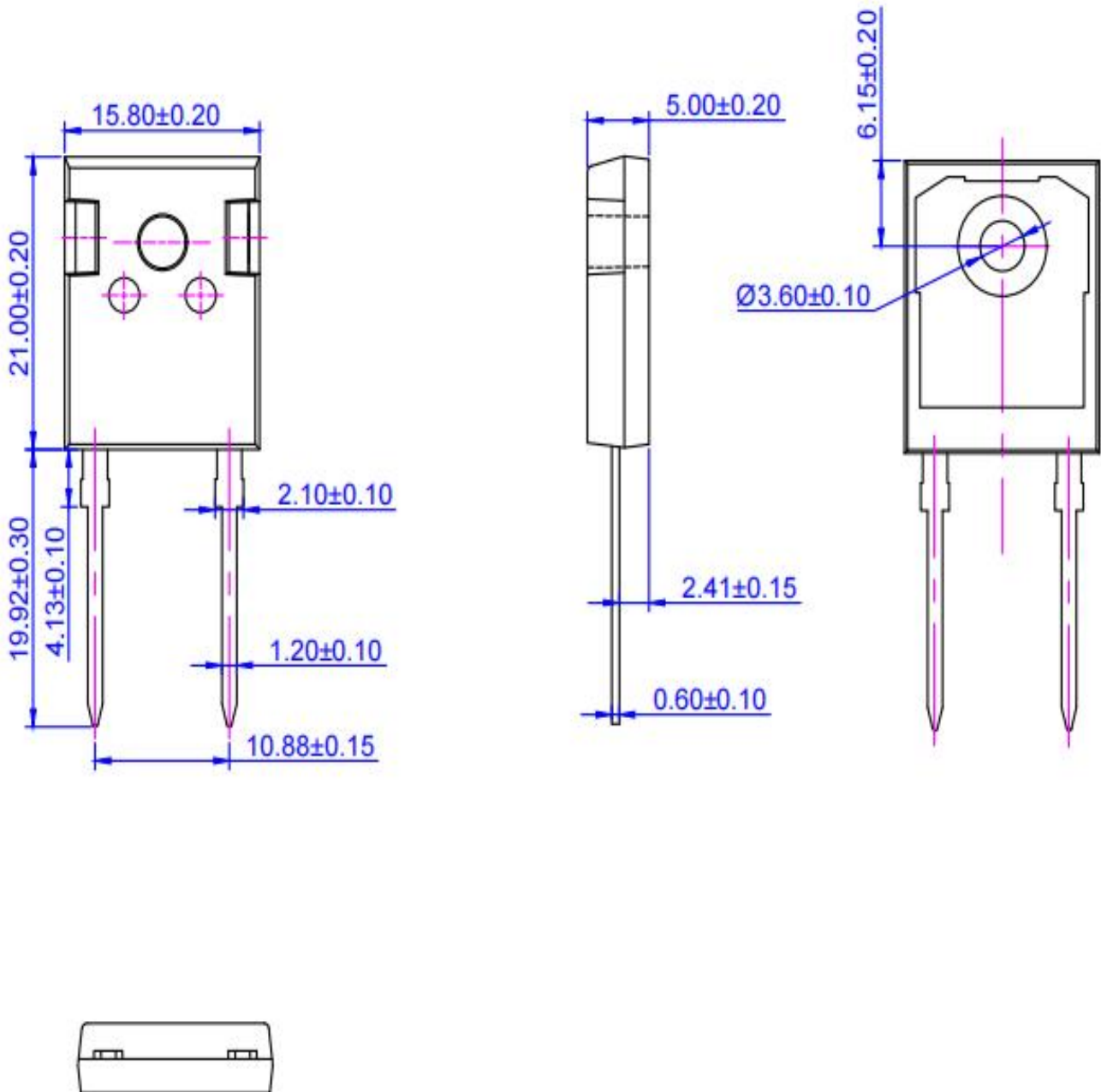


Figure 8 Transient Thermal Impedance

Package outline drawing(TO-247-2 Unit: mm)



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