

VRRM	IF ( TC≤135℃)	QC
1200V	45A	174nC

### Applications:

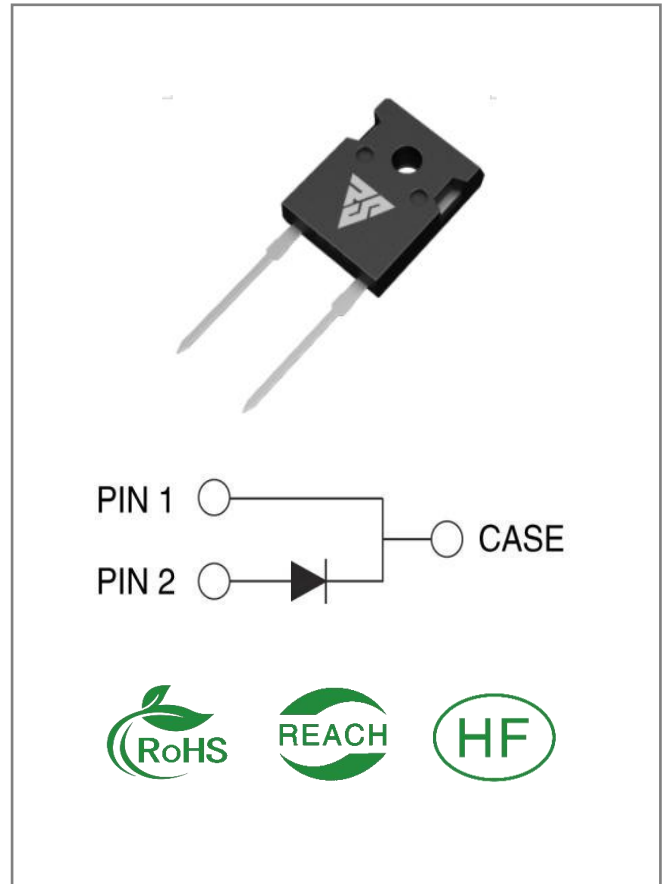
- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

### 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.
RSS30120W	TO-247-2	RSS30120W	Tube	30 PCS

**Maximum Ratings** (TJ= 25°C unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
VRRM	Repetitive Peak Reverse Voltage	1200	V	TC = 25°C	
VRSM	Surge Peak Reverse Voltage	1200	V	TC = 25°C	
VR	DC Blocking Voltage	1200	V	TC = 25°C	
IF	Forward Current	93 45 30	A	TC ≤ 25°C TC ≤ 135°C TC ≤ 155°C	Fig.3
IFSM	Non-Repetitive Forward Surge Current	195 170	A	TC = 25°C, tp = 10ms, Half Sine Wave TC = 110°C, tp = 10ms, Half Sine Wave	
IFRM	Repetitive Peak Forward Surge Current	165	A	TC = 25°C, tp = 10ms, Half Sine Wave	
Ptot	Power Dissipation	530	W	TC = 25°C	Fig.4
TC	Maximum Case Temperature	155	°C		
TJ,TST G	Operating Junction and Storage Temperature	-55 to175	°C		

**Electrical Characteristics** (TJ= 25°C unless otherwise specified)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
VF	Forward Voltage	1.5 2.25	1.7 -	V	IF = 30A, TJ = 25°C IF = 30A, TJ = 175°C	Fig.1
IR	Reverse Current	2 10	150 -	μA	VR = 1200V, TJ = 25°C VR = 1200V, TJ = 175°C	Fig.2
C	Total Capacitance	1818 140 138	/	pF	VR = 1V, TJ = 25°C, f = 1MHz VR = 400V, TJ = 25°C, f = 1MHz VR = 800V, TJ = 25°C, f = 1MHz	Fig.5
QC	Total Capacitive Charge	174	/	nC	VR = 800V,	Fig.6
Ec	Capacitance Stored Energy	50		uJ	VR = 800V,	Fig.7

**Thermal Characteristics** (TJ= 25°C unless otherwise specified)

Symbol	Parameter	Typ.	Unit	Note
RθJC	Thermal Resistance from Junction to Case	0.283	°C/W	Fig.8

## Typical Feature Curve

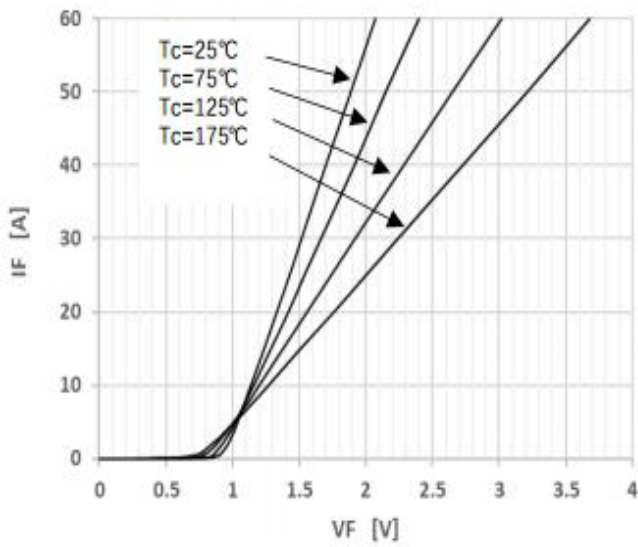


Figure 1 Forward Characteristics

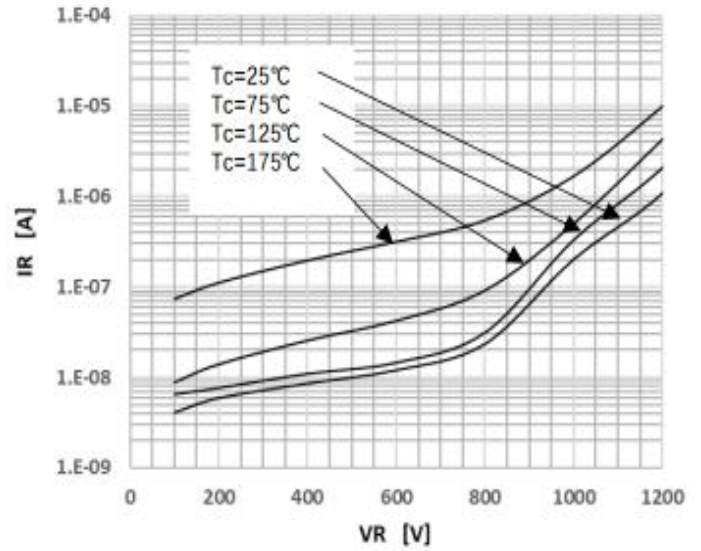


Figure 2 Reverse Characteristics

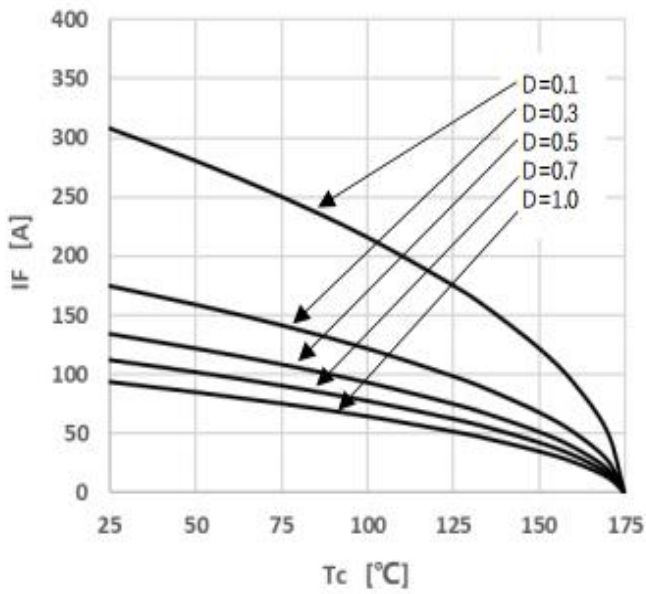


Figure 3 Peak Forward Current Derating

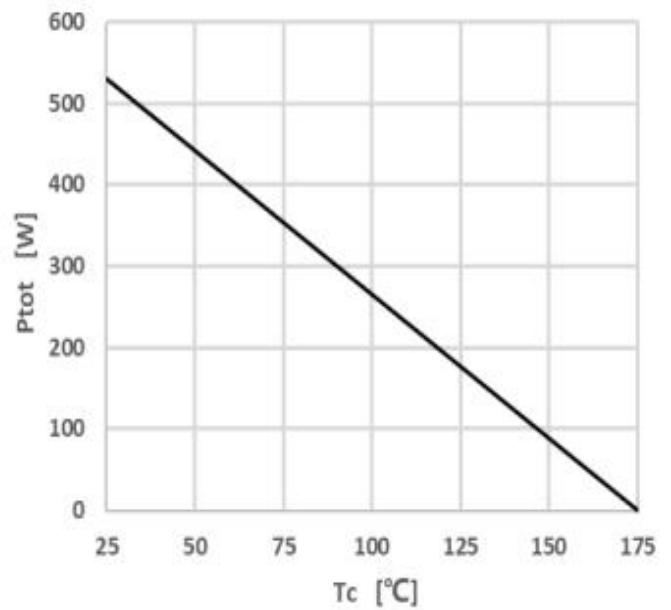


Figure 4 Power Dissipation

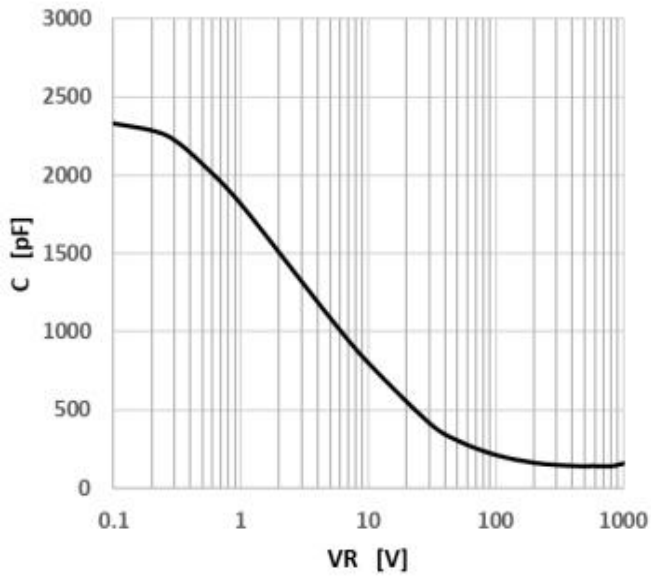


Figure 5 Capacitance vs. Reverse Voltage

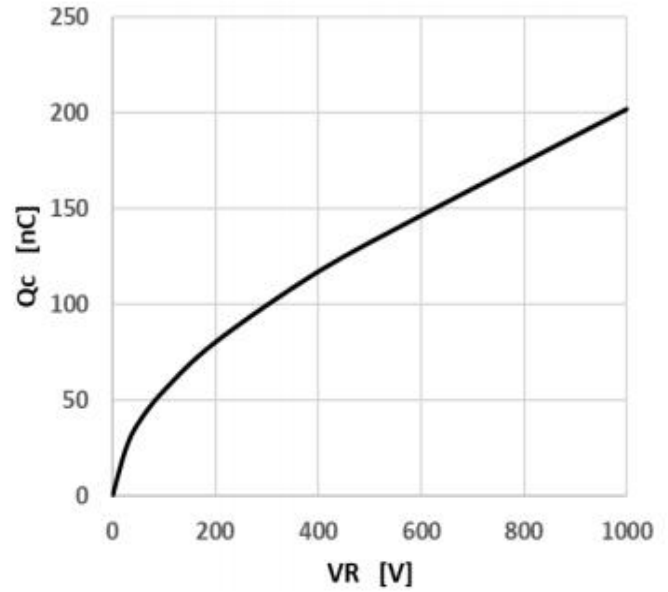


Figure 6 Capacitance Charge vs. Reverse Voltage

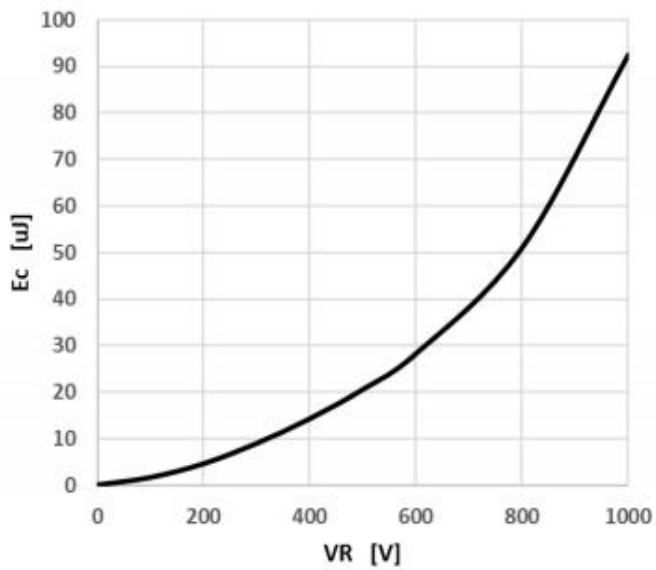


Figure 7 Capacitance Stored Energy

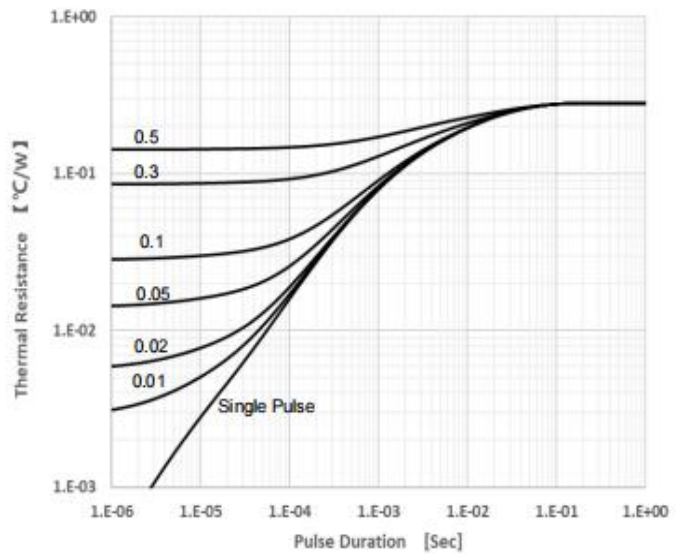
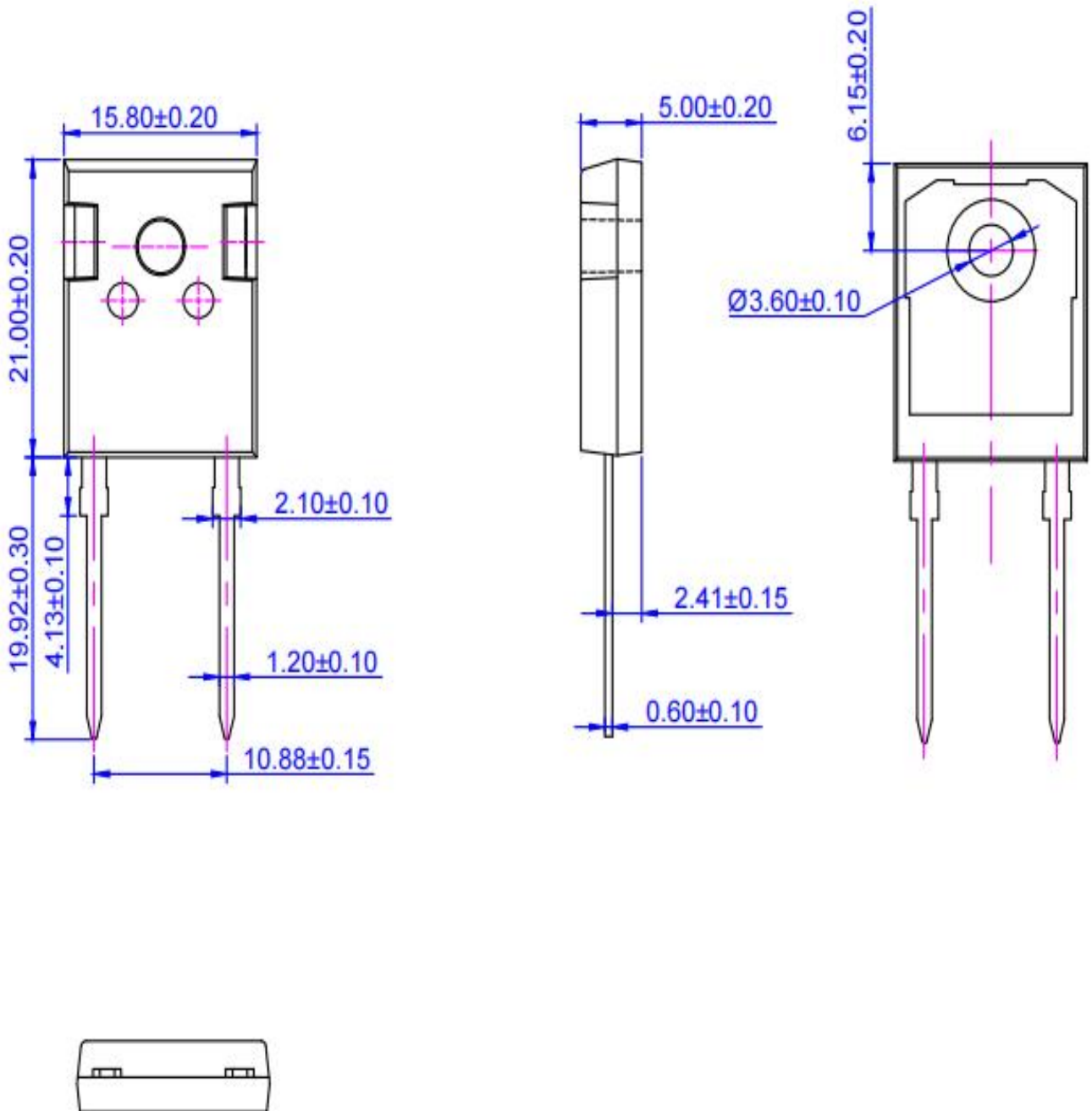


Figure 8 Transient Thermal Impedance

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



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