

VRRM	IF ( TC≤135°C)	QC
1200V	19A	52nC

**Applications:**

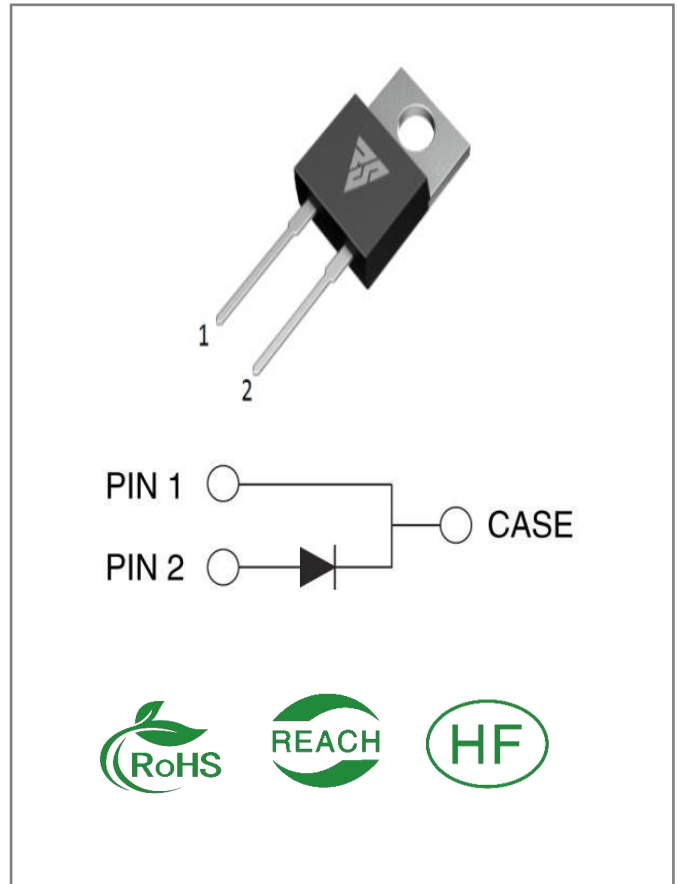
- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

**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.
RSS10120A	TO-220-2	RSS10120A	Tube	50 PCS

**Maximum Ratings** (T<sub>J</sub>= 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	39 19 10	A	TC ≤ 25°C TC ≤ 135°C TC ≤ 161°C	Fig. 3
IFSM	Non-Repetitive Forward Surge Current	64 51	A	TC = 25°C, tp = 10ms, Half Sine Wave TC = 110°C, tp = 10ms, Half Sine Wave	
IFRM	Repetitive Peak Forward Surge Current	55	A	TC = 25°C, tp = 10ms, Half Sine Wave	
Ptot	Power Dissipation	238	W	TC = 25°C	Fig. 4
TC	Maximum Case Temperature	161	°C		
TJ,TSTG	Operating Junction and Storage Temperature	-55 to 175	°C		

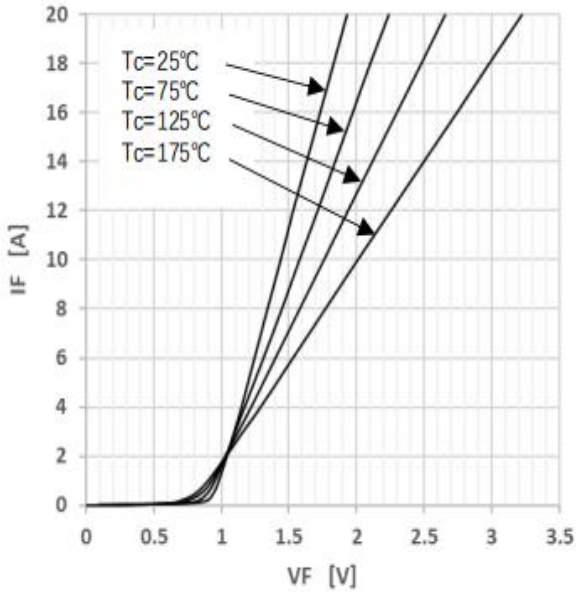
**Electrical Characteristics** (T<sub>J</sub>= 25°C unless otherwise specified)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
VF	Forward Voltage	1.43 2.0	1.7 -	V	IF = 10A, T <sub>J</sub> = 25°C IF = 10A, T <sub>J</sub> = 175°C	Fig.1
IR	Reverse Current	2 4	60 -	μA	VR = 1200V, T <sub>J</sub> = 25°C VR = 1200V, T <sub>J</sub> = 175°C	Fig.2
C	Total Capacitance	546 47 41	/	pF	VR = 1V, T <sub>J</sub> = 25°C, f = 1MHz VR = 400V, T <sub>J</sub> = 25°C, f = 1MHz VR = 800V, T <sub>J</sub> = 25°C, f = 1MHz	Fig.5
QC	Total Capacitive Charge	52	/	nC	VR = 800V,	Fig.6
Ec	Capacitance Stored Energy	15.8		uJ	VR = 800V,	Fig.7

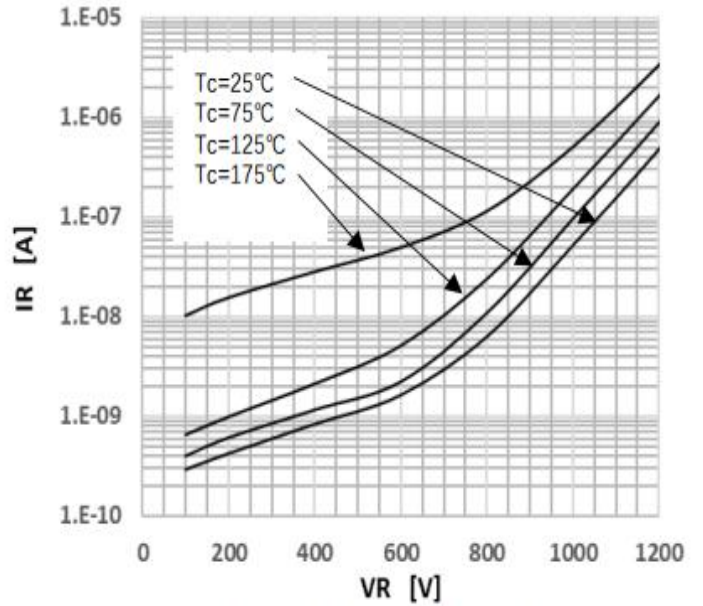
**Thermal Characteristics** (T<sub>J</sub>= 25°C unless otherwise specified)

Symbol	Parameter	Typ.	Unit	Note
RθJC	Thermal Resistance from Junction to Case	0.63	°C/W	Fig.8

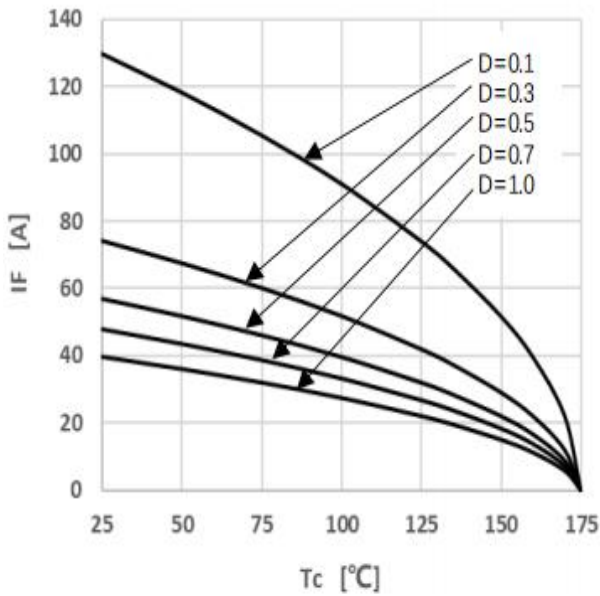
**Typical Feature Curve**



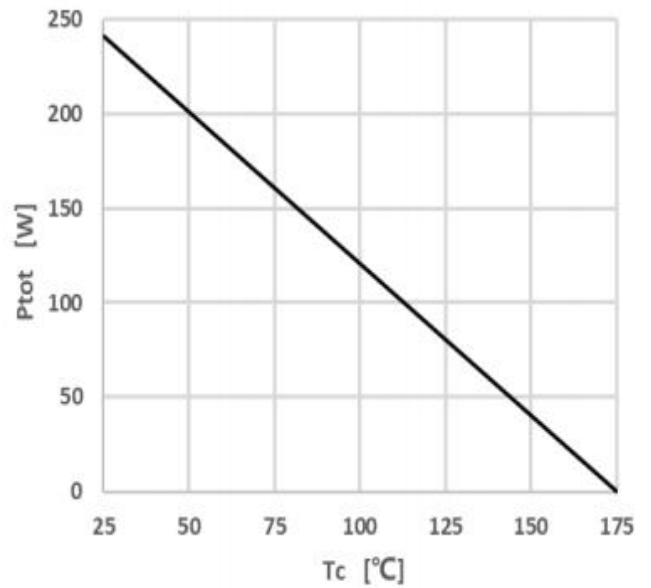
**Figure 1 Forward Characteristics**



**Figure 2 Reverse Characteristics**



**Figure 3 Peak Forward Current Derating**



**Figure 4 Power Dissipation**

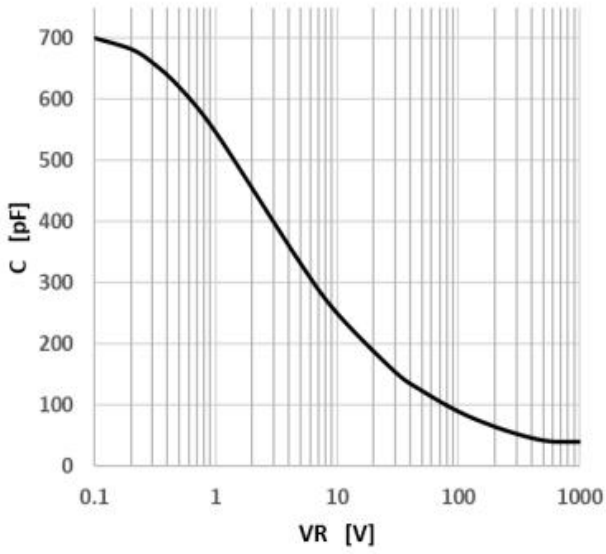


Figure 5 Capacitance vs. Reverse Voltage

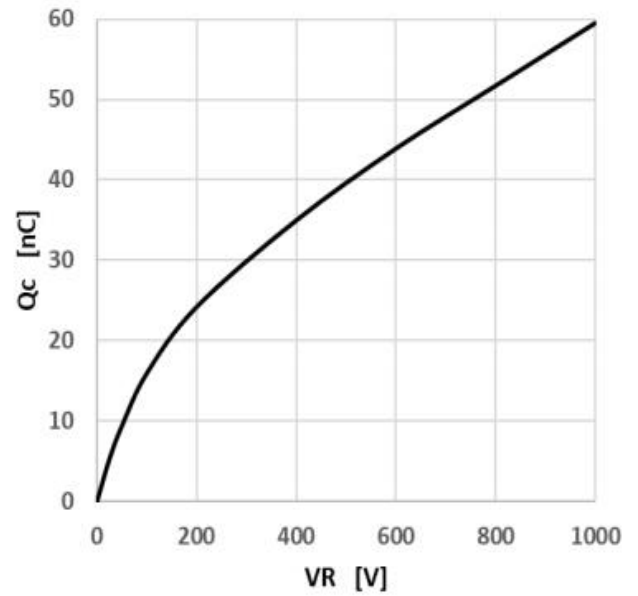


Figure 6 Capacitance Charge vs. Reverse Voltage

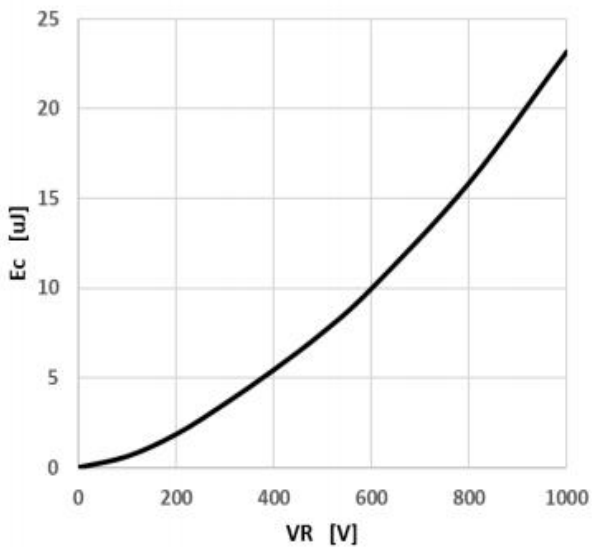


Figure 7 Capacitance Stored Energy

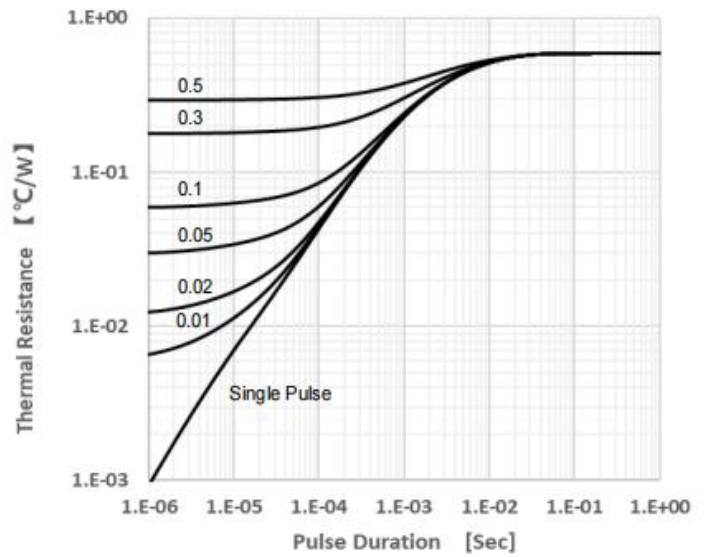


Figure 8 Transient Thermal Impedance



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