

VRRM	IF ( TC≤135°C)	QC
1200V	36A	104nC

**Applications:**

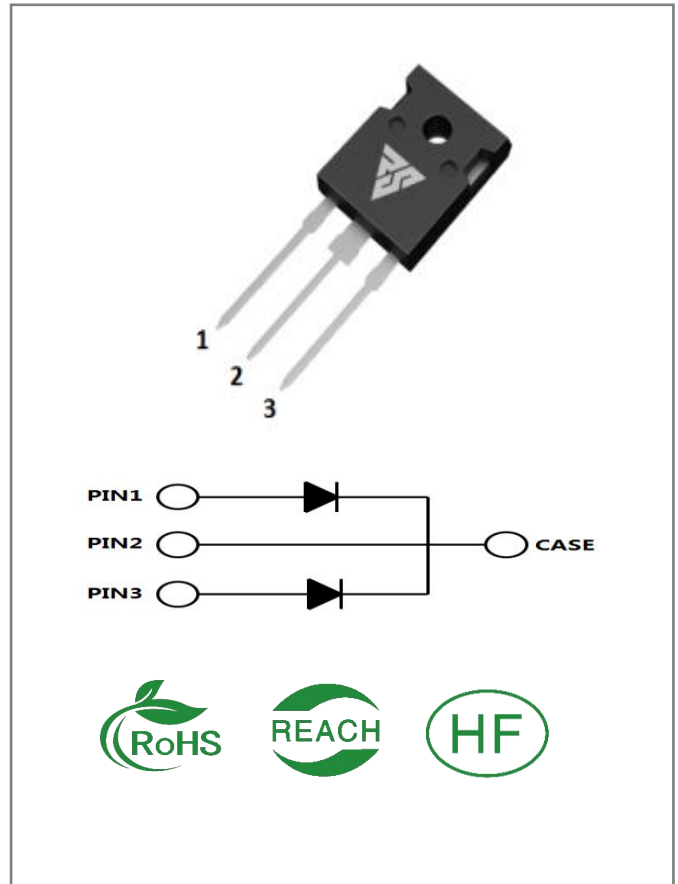
- Switch Mode Power Supplies
- Power Factor Correction
- Motor drive, PV Inverter, Wind Power Station

**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.
RSS20120K	TO-247-3	RSS20120K	Tube	30 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	36*2 18*2 10/2 0	A	TC ≤ 25°C TC ≤ 135°C TC ≤ 159°C	Fig. 3
IFSM	Non-Repetitive Forward Surge Current	60*2 45*2	A	TC = 25°C, tp = 10ms, Half Sine Wave TC = 110°C, tp = 10ms, Half Sine Wave	
IFRM	Repetitive Peak Forward Surge Current	55*2	A	TC = 25°C, tp = 10ms, Half Sine Wave	
Ptot	Power Dissipation	204* 2	W	TC = 25°C	Fig. 4
TC	Maximum Case Temperature	159	°C		
TJ,TSTG	Operating Junction and Storage Temperature	-55 to17 5	°C		

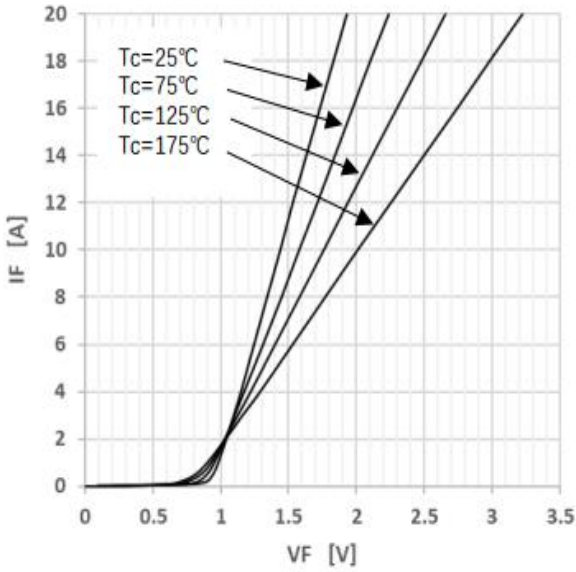
**Electrical Characteristics** (T<sub>J</sub>= 25°C unless otherwise specified)

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	110 0 92 78	/	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

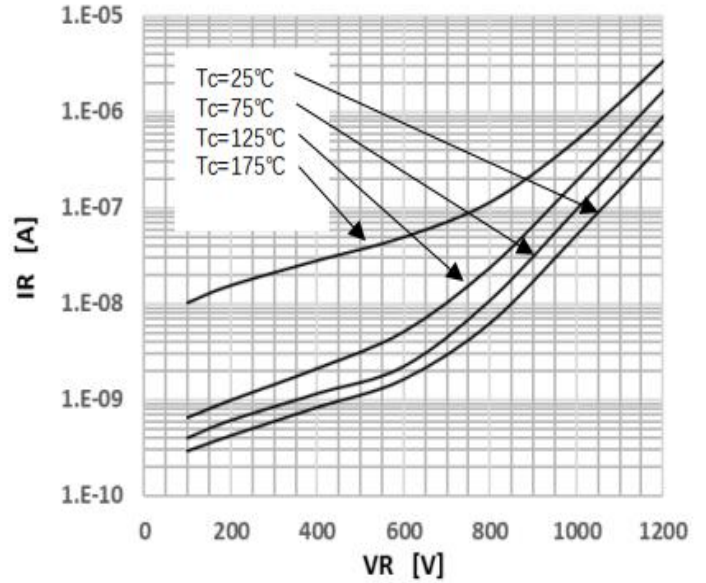
**Thermal Characteristics** (T<sub>J</sub>= 25°C unless otherwise specified)

Symbol	Parameter	Typ.	Unit	Note
RθJC	Thermal Resistance from Junction to Case	0.736	°C/W	Fig.8

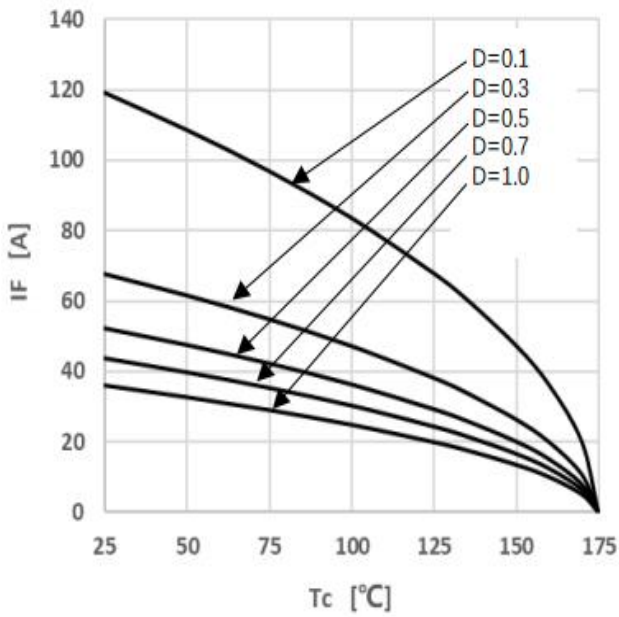
**Typical Feature Curve**



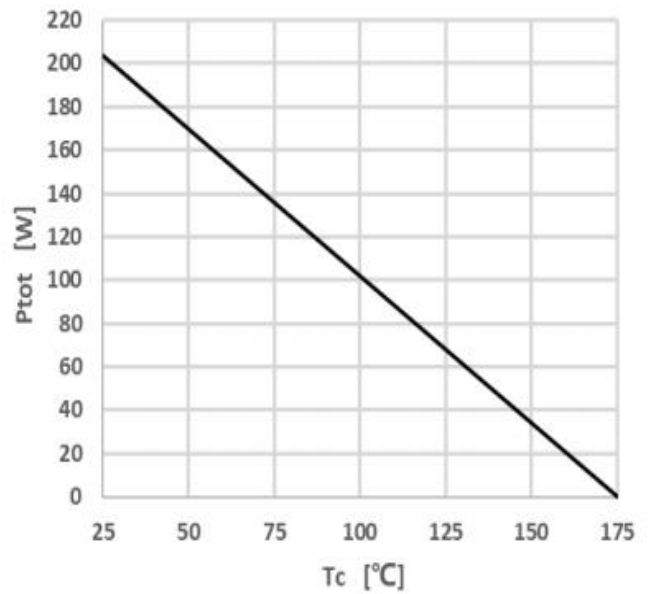
**Figure 1 Forward Characteristics**



**Figure 2 Reverse Characteristics**



**Figure 3 Peak Forward Current Derating**



**Figure 4 Power Dissipation**

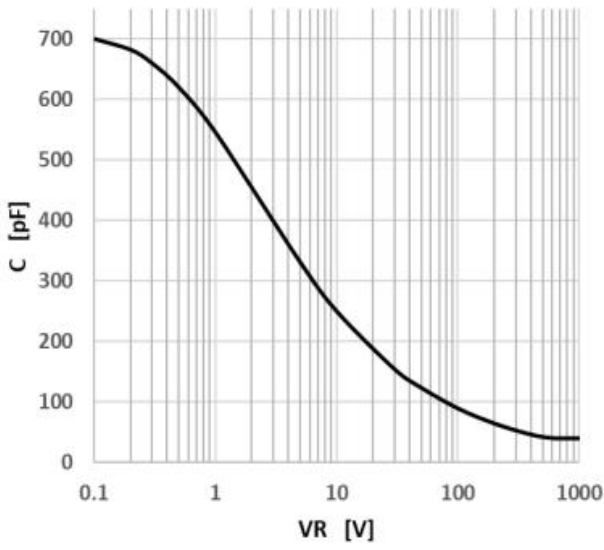


Figure 5 Capacitance vs. Reverse Voltage

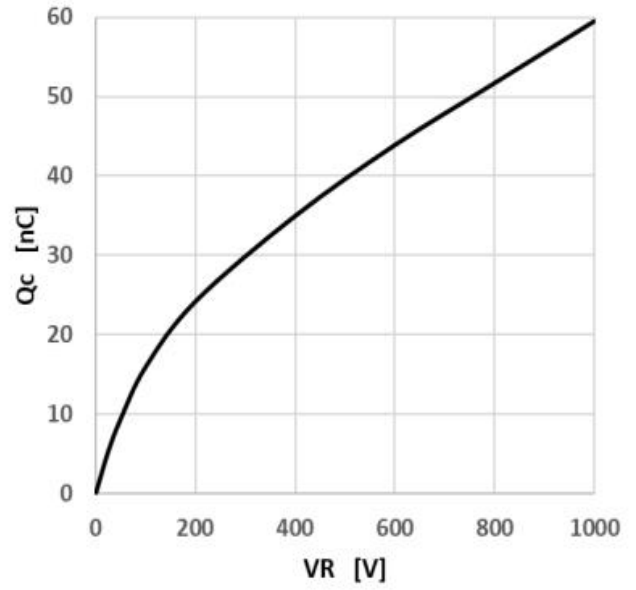


Figure 6 Capacitance Charge vs. Reverse Voltage

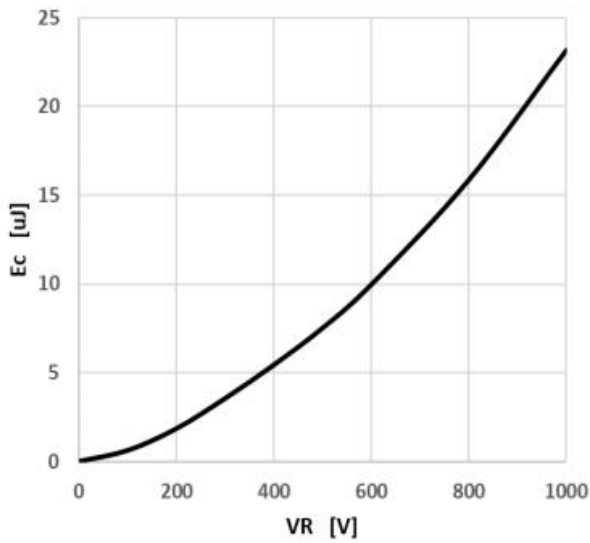


Figure 7 Capacitance Stored Energy

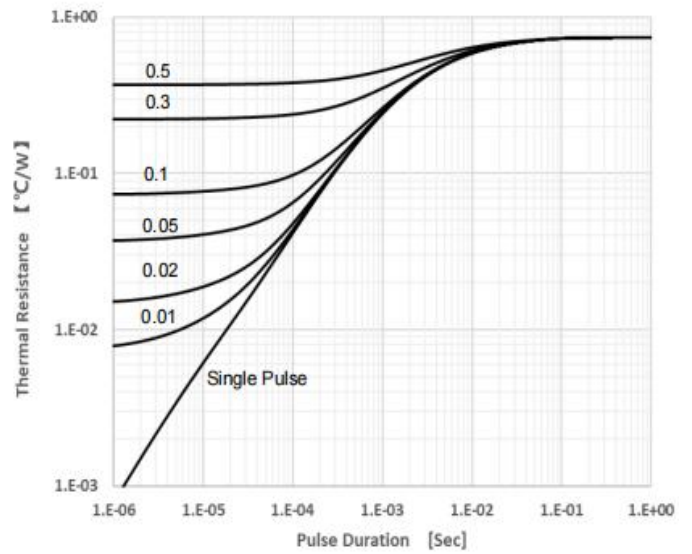
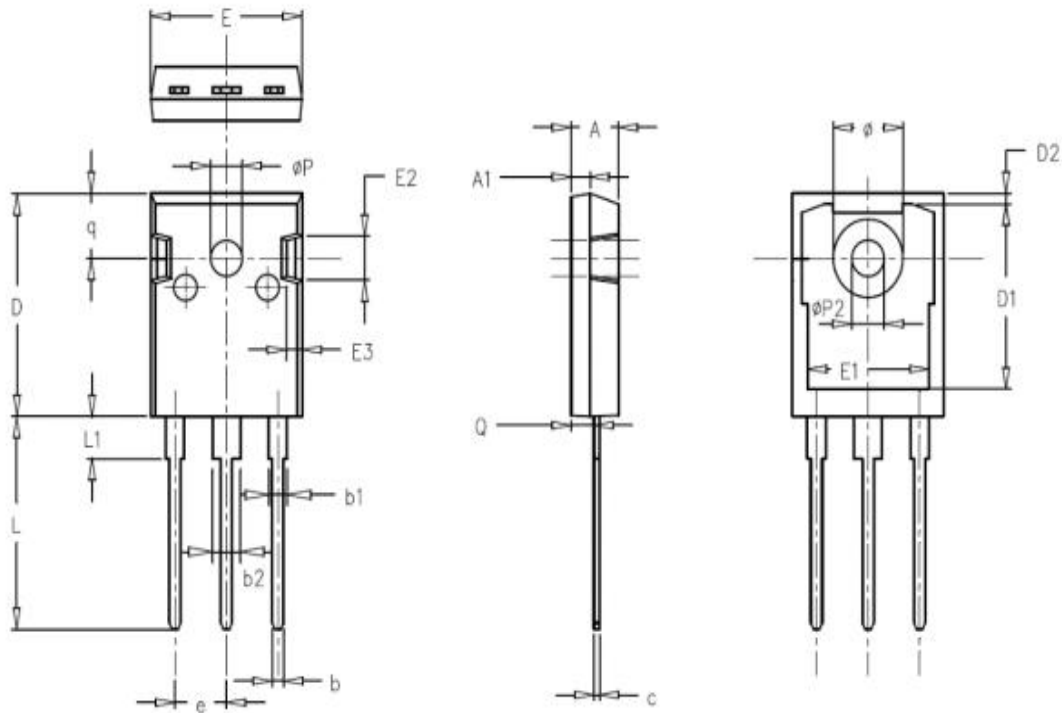


Figure 8 Transient Thermal Impedance

Package outline drawing(TO-247-3 Unit: mm )



SYMBOL	MILLIMETERS			NOTES	SYMBOL	MILLIMETERS			NOTES
	Normal	MIN.	MAX.			Normal	MIN.	MAX.	
A	4.98	4.68	5.36		$\phi P$	3.66	3.45	3.85	
A1	1.99	1.90	2.10		e	5.44	BSC		
Q	2.41	2.30	2.60		q	6.24	5.99	6.58	
c	0.60	0.48	0.72		$\phi P2$	3.45	3.24	3.64	
b	1.20	1.00	1.40		$\phi$	7.14	7.10	7.30	
b1	2.07	1.90	2.30		D1	16.56	16.10	17.10	
b2	3.07	2.90	3.30		D2	0.98	0.80	1.36	
D	21.10	20.80	21.80		E1	13.30	13.00	13.52	
E	15.98	15.38	16.20		E2	5.64	5.10	6.10	
L	20.28	19.50	20.50		E3	2.33	1.90	2.70	
L1	4.01	3.75	4.35						

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