

VRRM	IF (TC≤135℃)	QC
650V	39A	86nC

**Applications:**

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

**Features:**

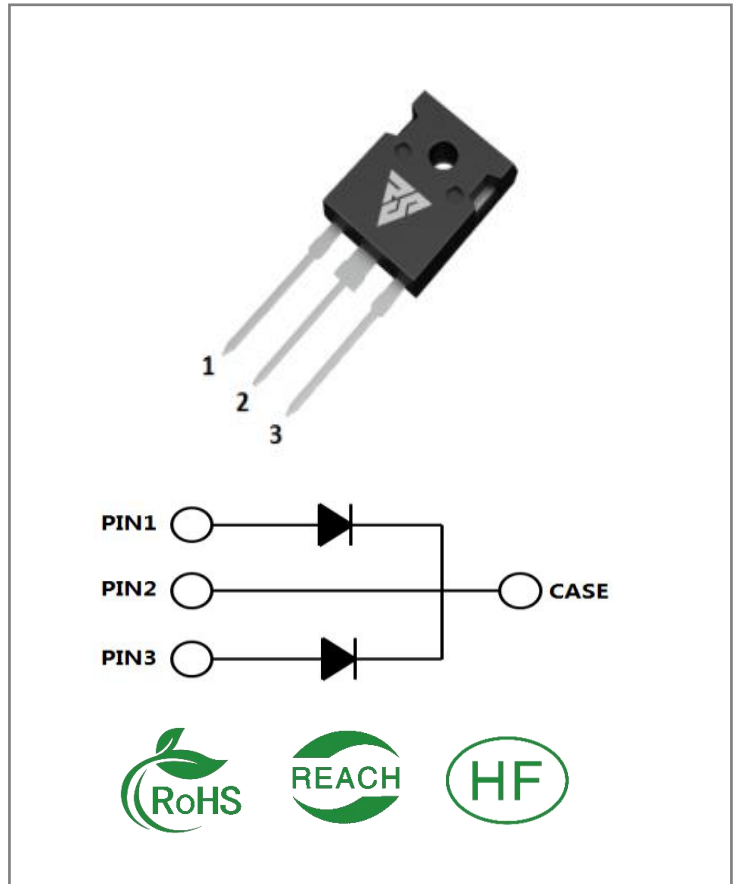
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- Positive Temperature Coefficient on VF
- Temperature-independent Switching
- 175°C Operating Junction Temperature

**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.
RSS30120K	TO-247-3	RSS30120K	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	42*21 9.5*2 15/30	A	TC ≤ 25°C TC ≤ 135°C TC ≤ 150°C	
IFRM	Repetitive Peak Forward Surge Current	137*2	A	TC = 25°C, tp =8.3ms, Half Sine Wave	
Ptot	Power Dissipation	214*2	W	TC = 25°C	Fig.3
TC	Maximum Case Temperature	150	°C		
TJ,TST G	Operating Junction and Storage Temperature	-55 to175	°C		

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

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
VF	Forward Voltage	1.55 2.2	1.8 2.5	V	IF = 15A, T <sub>J</sub> = 25°C IF = 15A, T <sub>J</sub> = 175°C	Fig.1
IR	Reverse Current	5 20	20 200	μA	VR = 1200V, T <sub>J</sub> = 25°C VR = 1200V, T <sub>J</sub> = 175°C	Fig.2
C	Total Capacitance	940 70 57	/	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	43	/	nC	VR =800V,	Fig.4

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

Symbol	Parameter	Typ.	Unit	Note
RθJC	Thermal Resistance from Junction to Case	0.7	°C/W	Fig.6

Typical Feature Curve

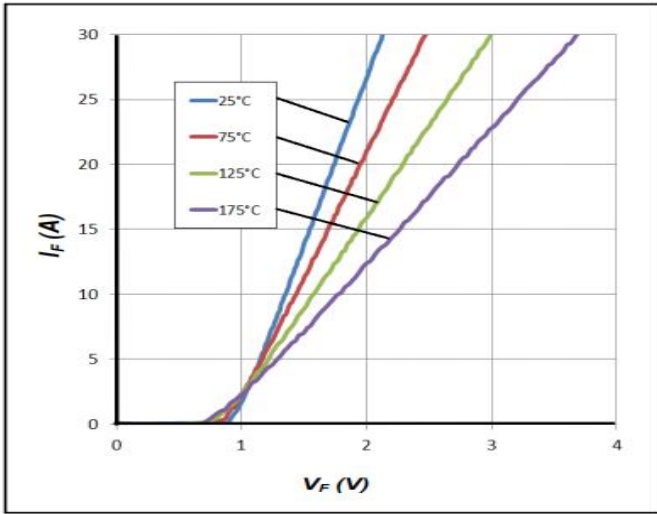


Figure 1. Forward Characteristics

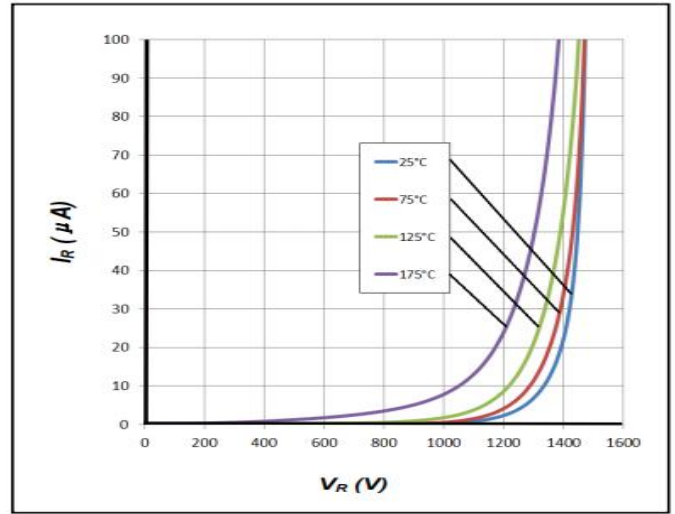


Figure 2. Reverse Characteristics

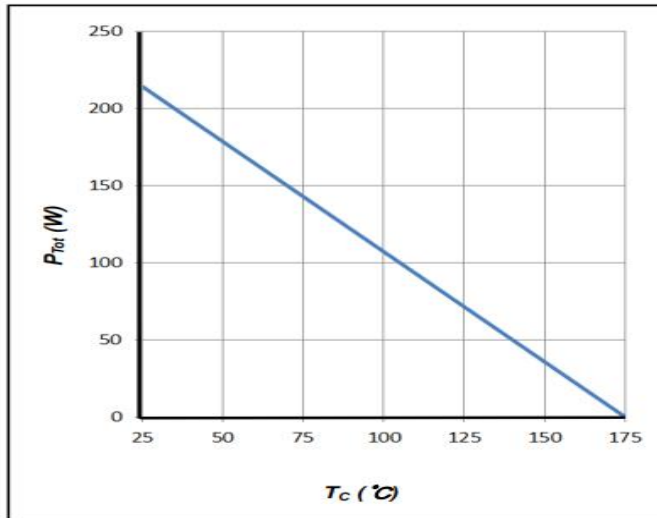


Figure 3. Power Derating

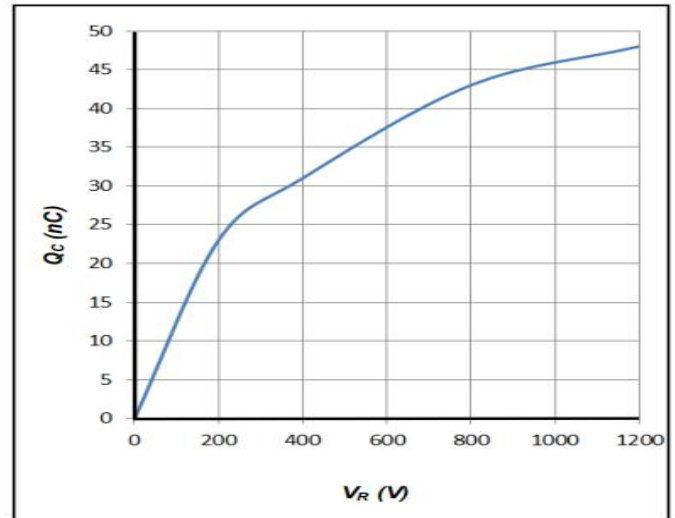


Figure 4. Total Capacitive Charge vs. Reverse Voltage

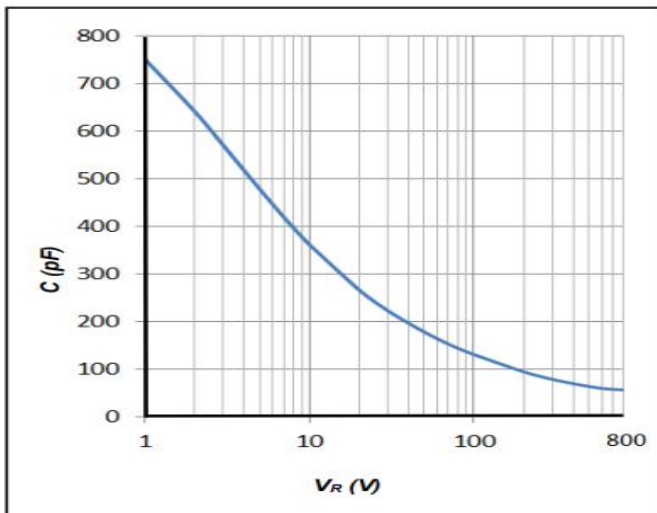


Figure 5. Total Capacitance vs. Reverse Voltage

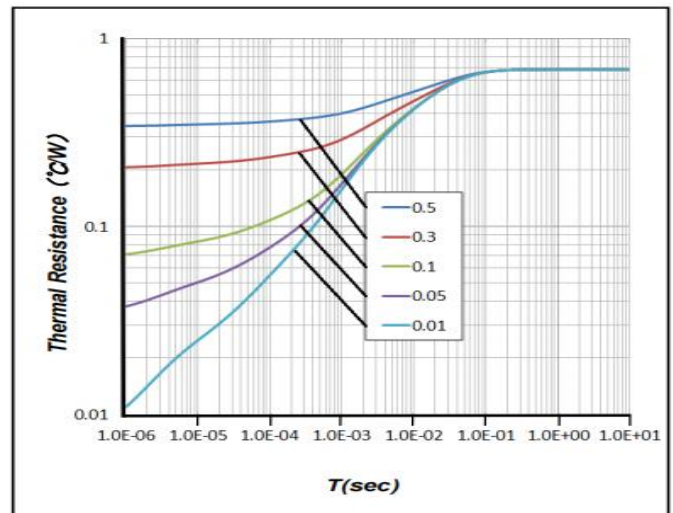
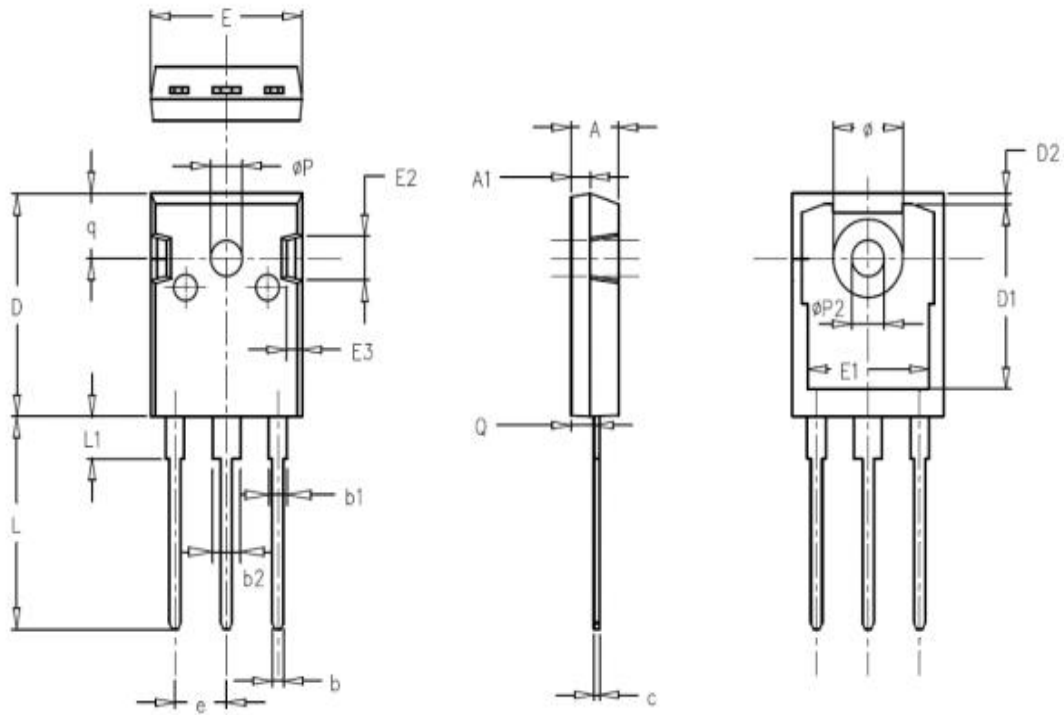


Figure 6. Transient Thermal Impedance

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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