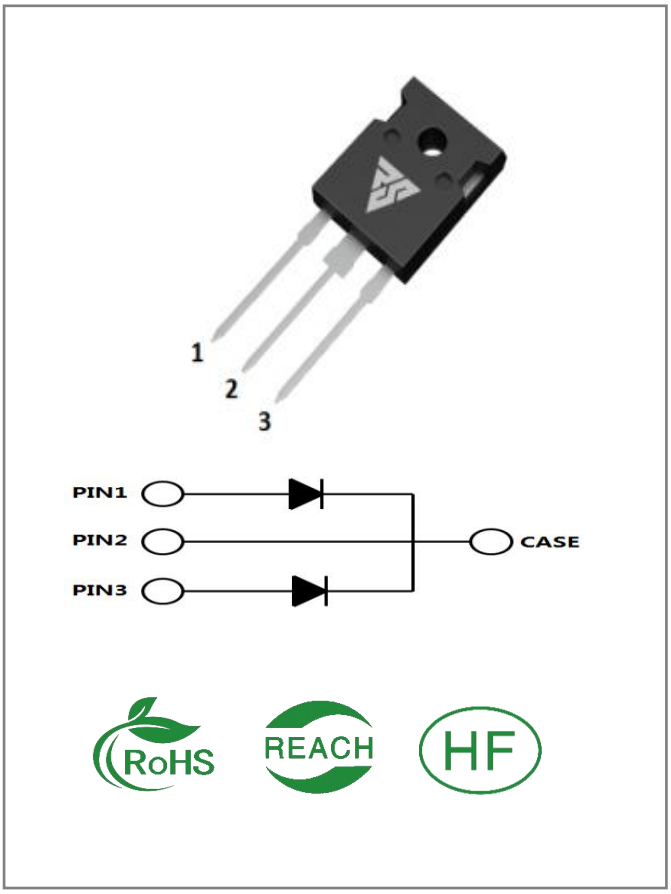
VRRM	IF (TC≤135℃)	QC
650V	56A	124nC



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.
RSS40065K	TO-247-3	RSS40065K	Tube	30 PCS

Maximum Ratings (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Value	Unit	Test Conditions	Note
VRRM	Repetitive Peak Reverse Voltage	650	V	TC = 25℃	
VRSM	Surge Peak Reverse Voltage	650	V	TC = 25℃	
VR	DC Blocking Voltage	650	V	TC = 25℃	
IF	Forward Current	58*2 8*2 20/40	A	TC ≤ 25℃ TC ≤ 135℃ TC ≤ 151℃	Fig.3
IFSM	Non-Repetitive Forward Surge Current	173*2 160*2	A	TC = 25℃, tp = 10ms, Half Sine Wave TC = 110℃, tp = 10ms, Half Sine Wave	
IFRM	Repetitive Peak Forward Surge Current	168*2	A	TC = 25℃, tp = 10ms, Half Sine Wave	
Ptot	Power Dissipation	227*2	W	TC = 25℃	Fig.4
TC	Maximum Case Temperature	151	℃		
TJ,TSTG	Operating Junction and Storage Temperature	-55 to175	℃		

Electrical Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
VF	Forward Voltage	1.35 1.7	1.6 -	V	IF = 20A, TJ = 25℃ IF = 20A, TJ = 175℃	Fig.1
IR	Reverse Current	6 15	100 -	μA	VR = 650V, TJ = 25℃ VR = 650V, TJ = 175℃	Fig.2
C	Total Capacitance	906 122 118	/	pF	VR = 1V, TJ = 25℃, f = 1MHz VR = 200V, TJ = 25℃, f = 1MHz VR = 400V, TJ = 25℃, f = 1MHz	Fig.5
QC	Total Capacitive Charge	62	/	nC	VR =400V,	Fig.6
Ec	Capacitance Stored Energy	10		uJ	VR =400V,	Fig.7

Thermal Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Unit	Note
RθJC	Thermal Resistance from Junction to Case	0.655	℃/W	Fig.8

Typical Feature Curve

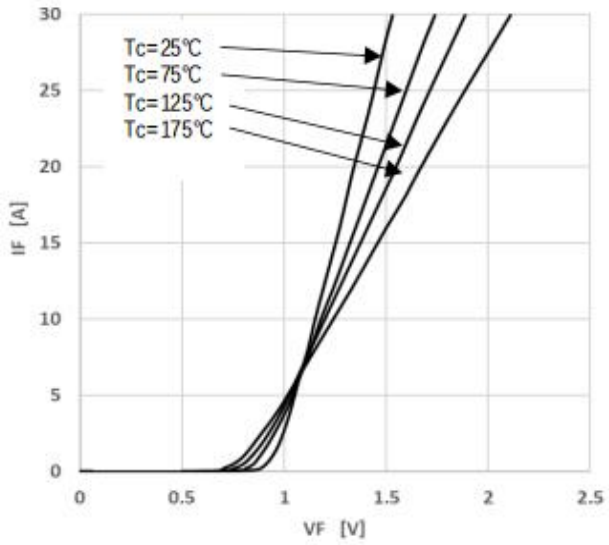


Figure 1 Forward Characteristics

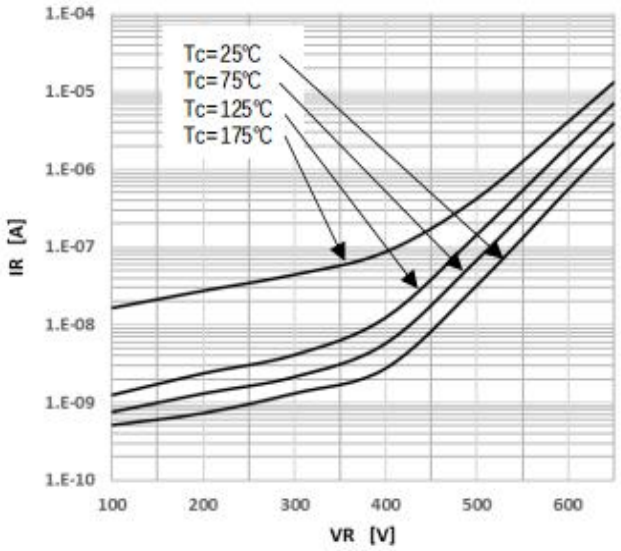


Figure 2 Reverse Characteristics

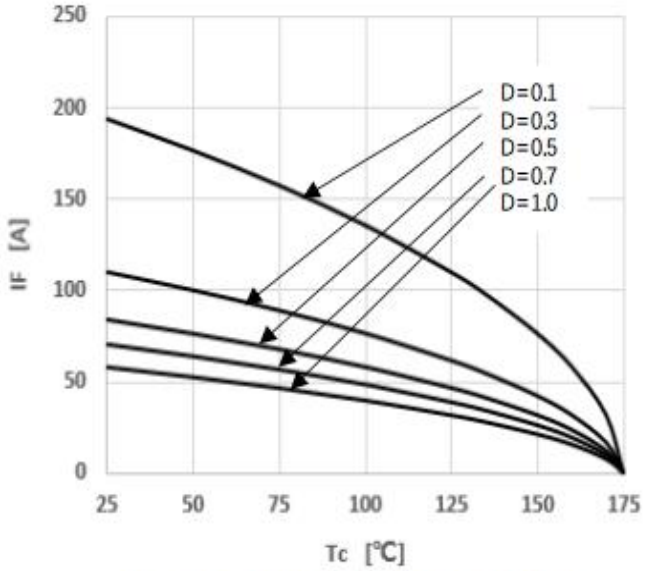


Figure 3 Peak Forward Current Derating

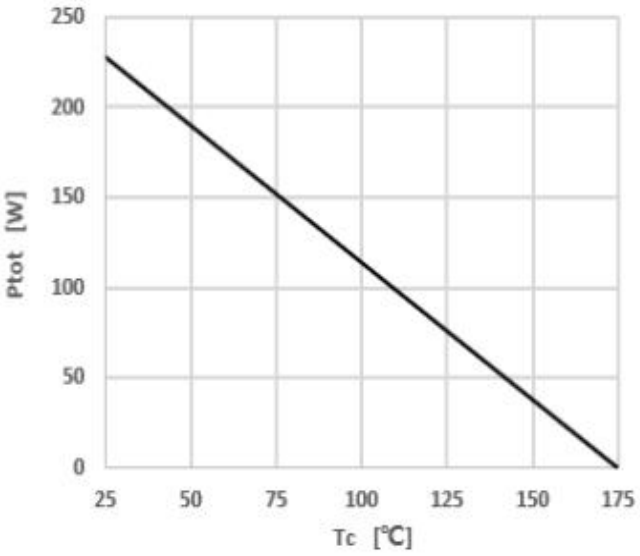


Figure 4 Power Dissipation

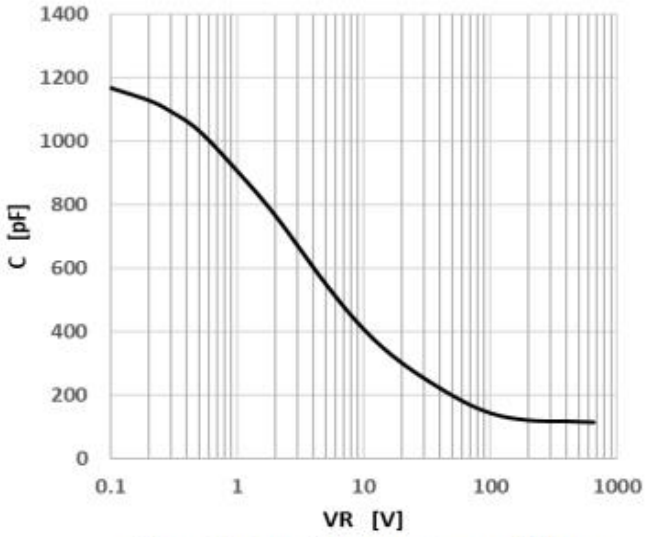


Figure 5 Capacitance vs. Reverse Voltage

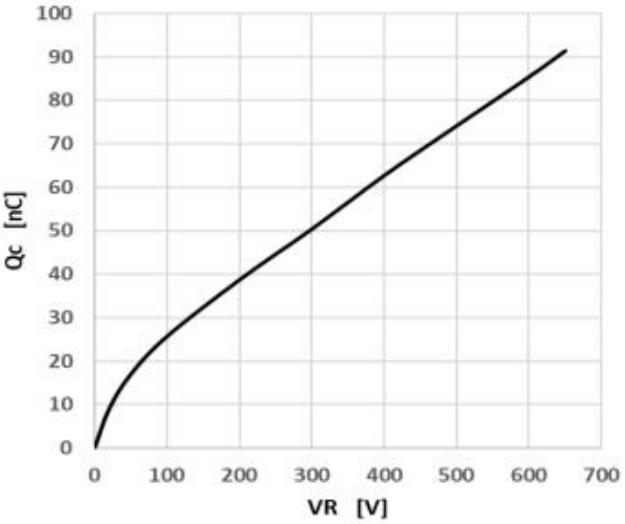


Figure 6 Capacitance Charge vs. Reverse Voltage

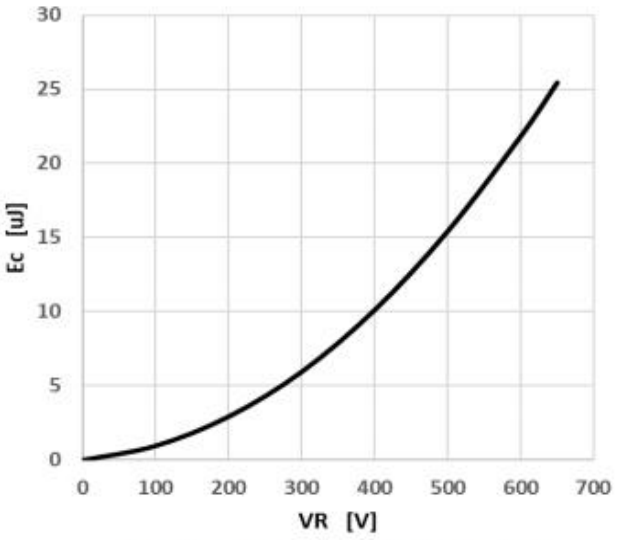


Figure 7 Capacitance Stored Energy

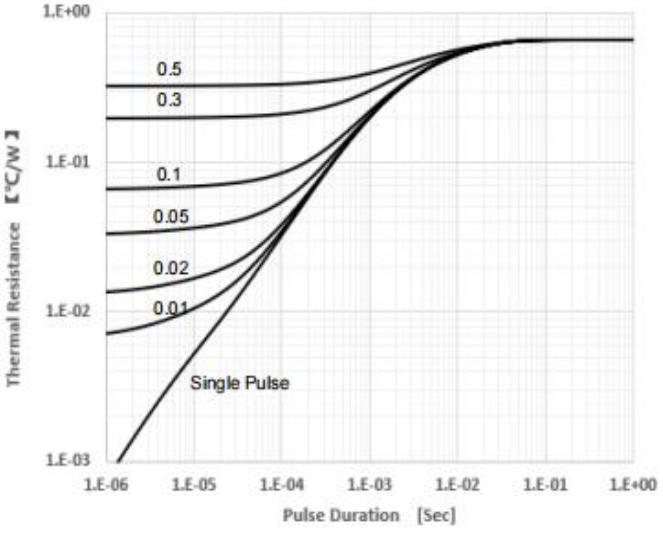
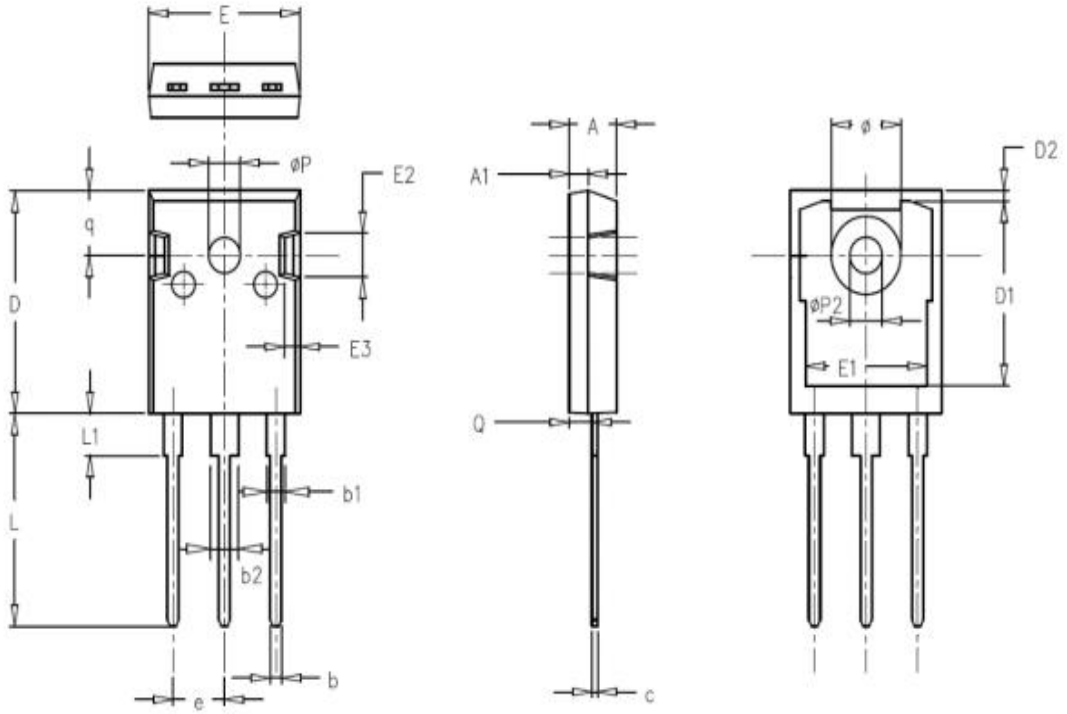


Figure 8 Transient Thermal Impedance

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		øP	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		øP2	3.45	3.24	3.64	
b	1.20	1.00	1.40		ø	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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