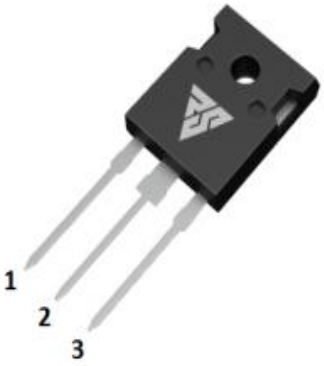
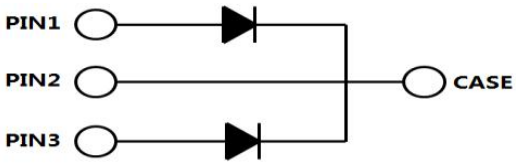
VRRM	IF	QC
650V	20A	27nC





Applications:

- Power Factor Correction
- Sever Mode Power Supplies
- Uninterruptible Power Supply

Features:

- Low Forward Voltage Drop
- High-Speed Switching
- Positive Temperature Coefficient
- Temperature-Independent Switching Behavior

Ordering Information

Part Number	Package	Marking	Packing	Qty.
RSS20065K	TO-247-3	RSS20065K	Tube	30 PCS

Maximum Ratings (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Min	Typ	Unit	Test Conditions	Note
VRRM	Repetitive Peak Reverse Voltage		650	V		
VRSM	Surge Peak Reverse Voltage		650	V		
VR	DC Blocking Voltage	650	879	V	IR=1mA,TJ = 25℃	Fig.3
IF	Forward Current		42* 24*	A	TC=25℃ TC=125℃	Fig.4
IFRM	Repetitive Peak Forward Surge Current(Note*1)	50* 48*	63* 60*	A	TC = 25℃, tp = 10ms Half Sine Wave TC = 125℃, tp = 10ms Half Sine Wave	
IFSM	Non-Repetitive Forward Surge Current(Note*1)	59* 49*	74* 61*	A	TC = 25℃, tp = 10ms Half Sine Wave TC = 125℃, tp = 10ms Half Sine Wave	Fig.9
Ptot	Power Dissipation		98* 33*	W	TC = 25℃ TC = 125℃	Fig.5
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	1.38* 1.58* 1.76*	1.5* - -	V	IF = 10A, TJ = 25℃ IF = 10A, TJ = 125℃ IF = 10A, TJ = 175℃	Fig.1
IR	Reverse Current	0.04* 0.29* 1.32*	5* - -	μA	VR = 650V, TJ = 25℃ VR = 650V, TJ = 125℃ VR = 650V, TJ = 175℃	Fig.2 Fig.3
C	Total Capacitance	495* 51* 49*	/	pF	VR = 0V, TJ = 25℃, f = 1MHz VR = 200V, TJ = 25℃, f = 1MHz VR = 400V, TJ = 25℃, f = 1MHz	Fig.6
QC	Total Capacitive Charge	27*	/	nC	VR =400V,TJ = 25℃	Fig.7
Ec	Capacitance Stored Energy	4.2*	/	uJ	VR =400V	Fig.8

Thermal Characteristics (TJ= 25℃ unless otherwise specified)

Symbol	Parameter	Typ.	Unit	Note
RθJC	Thermal Resistance from Junction to Case	1.5*	℃/W	Fig.10

Note:
*1:After test:VF≥0.5V@IF=1mA,VR≥500V@IR=1mA,IR≤5mA@VR=650V
*2: * Per Leg, ** Per Device

Typical Feature Curve

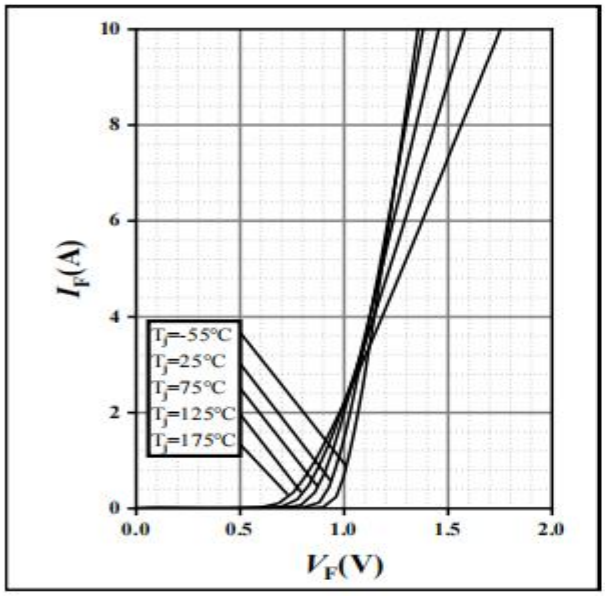


Fig.1 Forward Characteristics

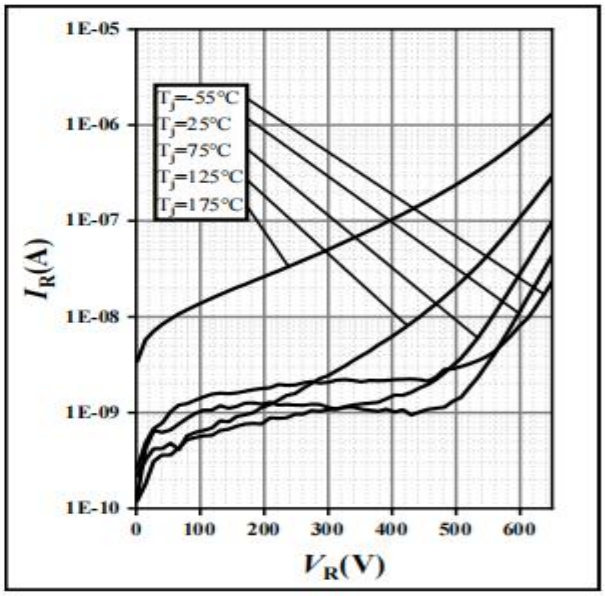


Fig.2 Reverse Characteristics

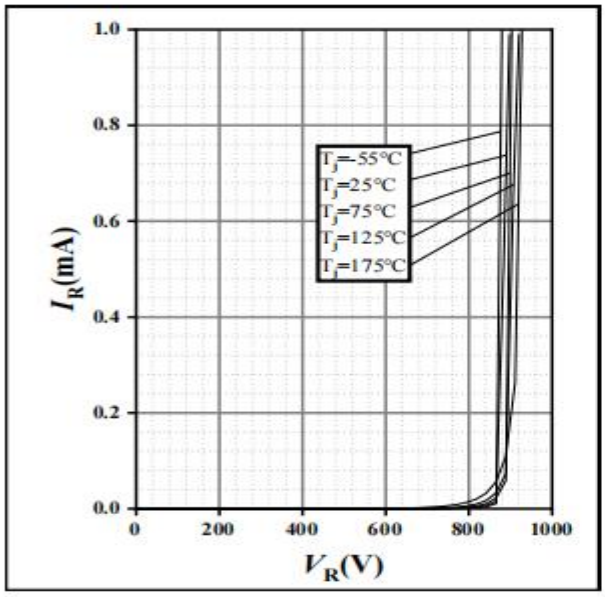


Fig.3 Reverse Characteristics

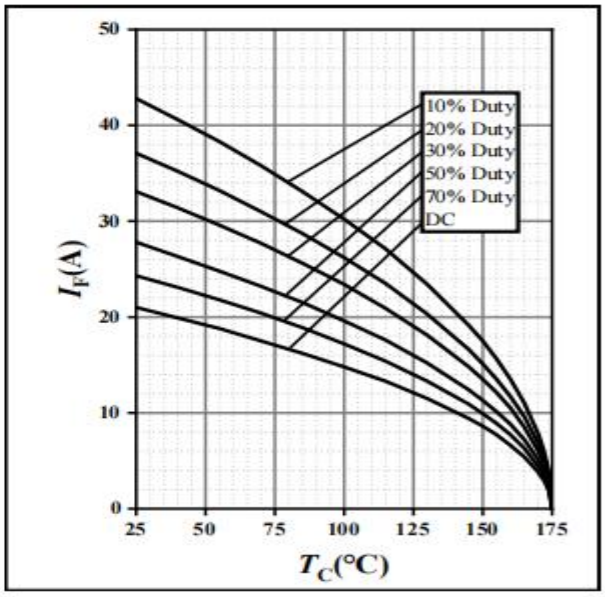


Fig.4 Peak Forward Current Derating

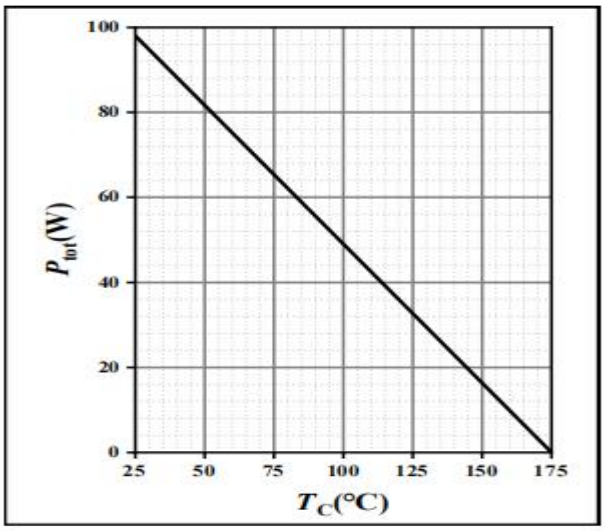


Fig.5 Power Dissipation

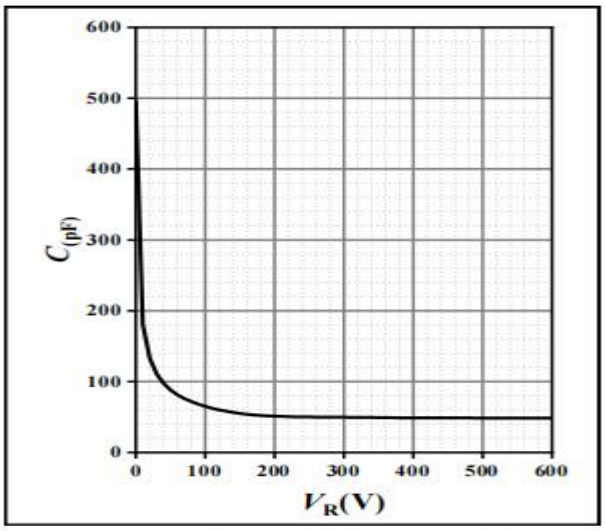


Fig.6 Capacitance vs. Reverse Voltage

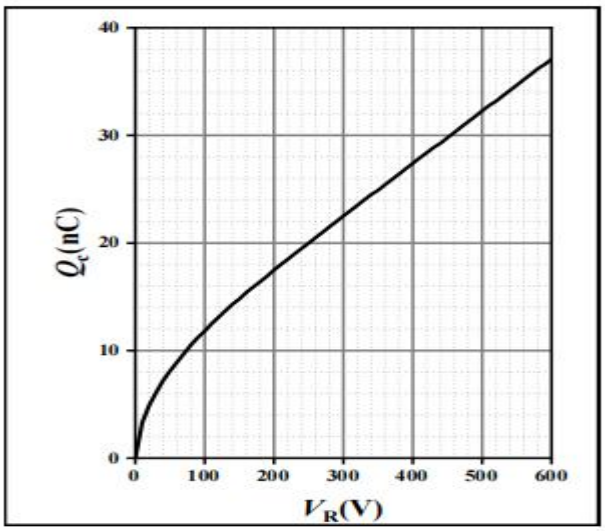


Fig.7 Capacitance Charge vs. Reverse Voltage

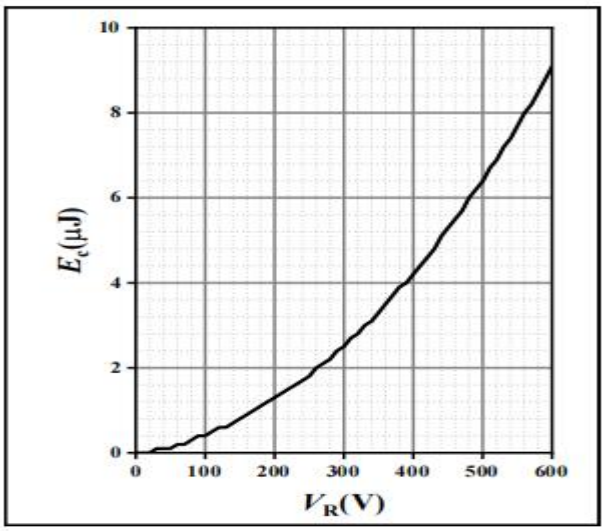


Fig.8 Capacitance Stored Energy

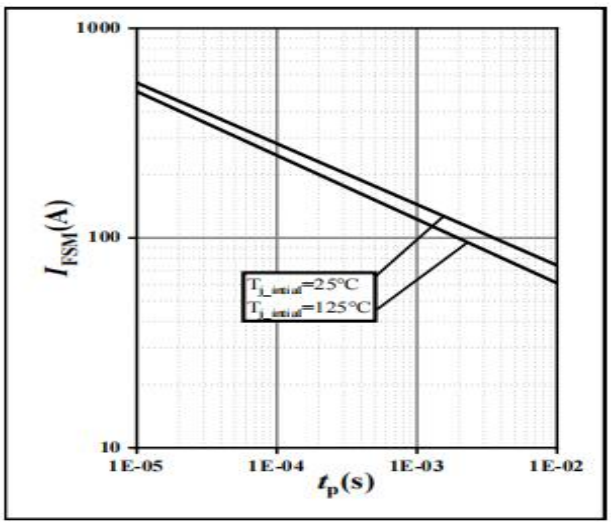


Fig.9 Non-Repetitive Peak Forward Surge Current vs. Pulse Duration

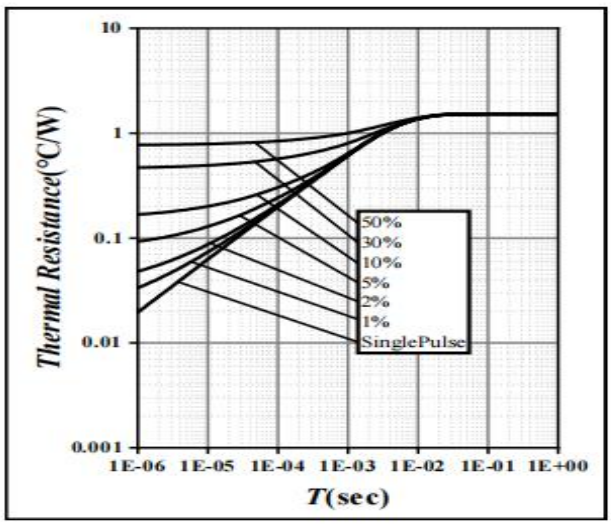
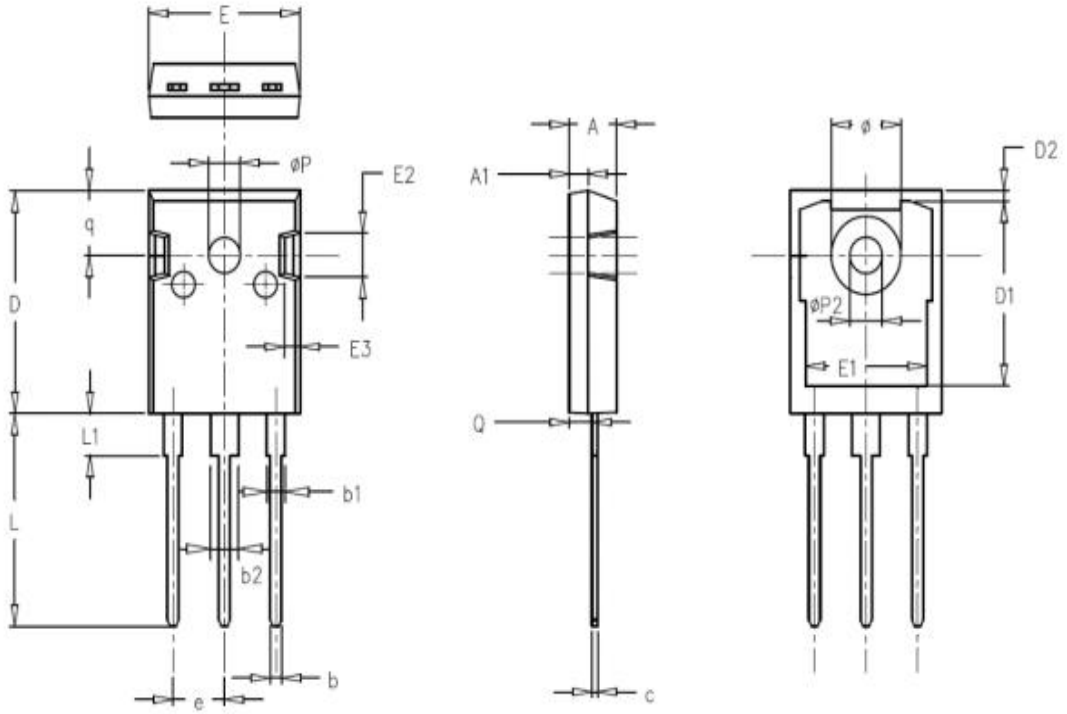


Fig.10 Transient Thermal Impedance

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



SYMBOL	MILLIMETERS			N OTES	SYMBOL	MILLIMETERS			N OTES
	N ormal	MIN.	MAX.			Normal	MIN.	MAX.	
A	4.98	4.68	5.36		øP	3.66	3.45	3.85	
A 1	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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