

Silicon Carbide Power Schottky Barrier Diode



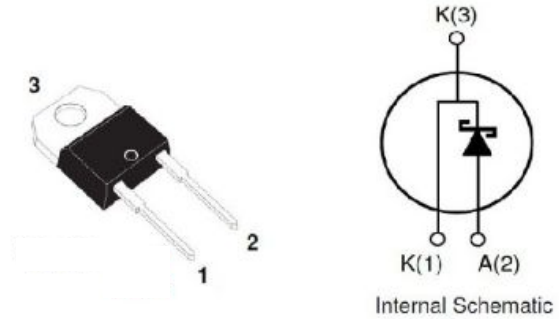
Applications:

- Power factor correction
- Solar wind inverters
- Industrial motor drivers
- Charge block for electrical cars
- Electrical household appliances
- Uninterruptible Power System(UPS)

$I_F, T_c \leq 135^\circ\text{C}$	Q_c	V_{RRM}
5.0A	7.4 nC	600V

Features:

- Rated to 600V at 3 Amps
- Zero reverse recovery current
- Zero forward recovery voltage
- Temperature independent switching behaviour
- High temperature operation
- High frequency operation
- Substantially reduced switching losses
- No thermal run-away with parallel devices
- Reduced heat sink requirements



Ordering Information

Part Number	Package	Marking
RSS03060A	TO-220-2	RSS03060A

Maximun Ratings

Symbol	Parameter	Value	Units	Test Conditions
VRRM	Repetitive Peak Reverse Voltage	600	V	Tj=25°C
VRSM	Surge Peak Reverse Voltage	600	V	Tj=25°C
VDC	DC Blocking Voltage	600	V	Tj=25°C
IF	Continuous Forward Current	11	A	Tj=25°C
		5		Tj=135°C
		3		Tj=156°C
IFRM	Repetitive Peak Forward Surge Current	15	A	Tc=25°C, Tp=10mS, Half Sine Wave, D=0.3
IFSM	Non-repetitive Peak Forward Surge Current	21	A	Tc=25°C, Tp=10mS, Half Sine Wave
PTOT	Power Dissipation	53	W	Tc=25°C
		23		Tc=110°C
Tc	Tc	135	°C	
Tj	Maximum Case Temperature	-55 to 175	°C	
Tstg	Operating Junction	-55 to 175	°C	
TL TPKG	Maximum Temperature for Soldering	300 260	°C	
	Leads at 0.063in(1.6mm)from Case for 10 seconds			
	Package Body for 10 seconds			
Mounting Torque		1 8.8	Nm lbf-in	M3 Screw 6-32 Screw

Thermal Resistance

Symbol	Parameter	Value	Units	Test Conditions
Rth JC	Junction-to-Case	2.82	°C/W	

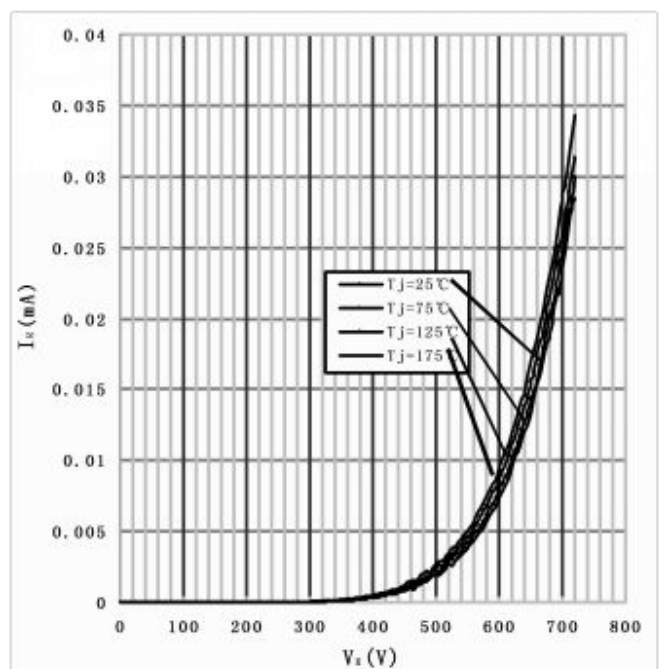
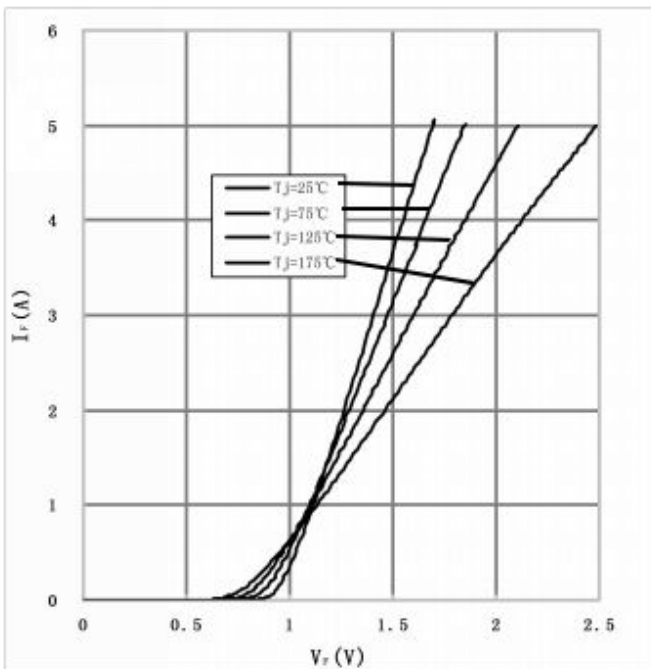
Electrical Characteristics

Symbol	Parameter	Typ.	Max.	Units	Test Conditions
VF	Forward Voltage	1.41	1.8	V	IF=3A Tj=25°C
		1.8	2.5		IF=3A Tj=175°C
IR	Reverse Current	10	100	µA	VR=600V Tj=25°C
		20	200		VR=600V Tj=175°C
Qc	Total Capacitive	7.4	--	nC	VR=600V, IF=3A, di/dt=500A/us, Tj=25°C
C	Total Capacitance	181	220	pF	VR=0V, Tj=25°C, f=1MHZ
		22.5	25		VR=200V, Tj=25°C, f=1MHZ
		20.5	21		VR=400V, Tj=25°C, f=1MHZ

Performance Graphs

Figure1. Forward IV characteristics as a function of Tj

Figure2. Reverse IV characteristics as a function of Tj



Performance Graphs

Figure3. Current Derating

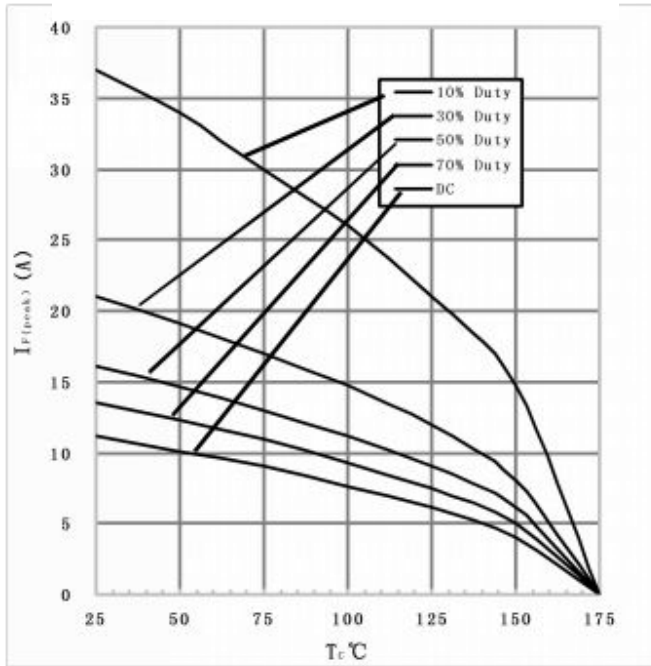
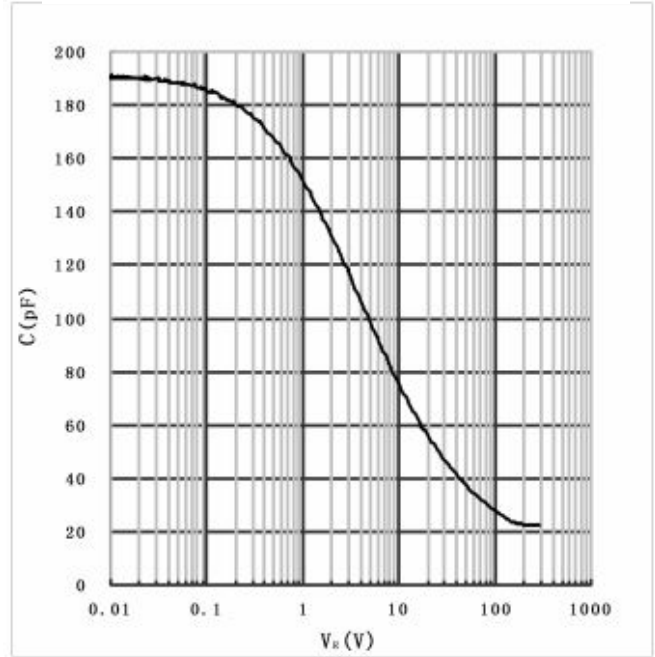
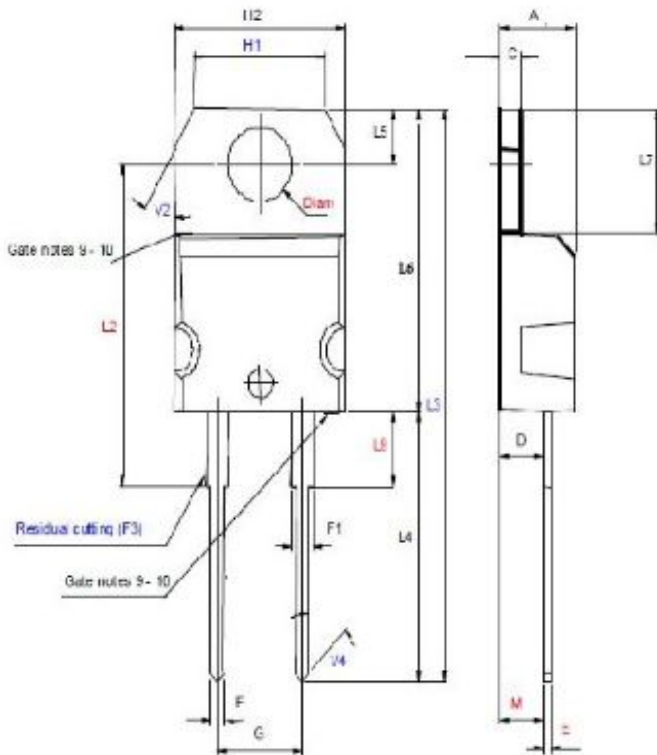


Figure4. Capacitance vs. reverse voltage



Package T0-220-2



DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.4	4.6	0.173	0.181
C	1.23	1.32	0.048	0.052
D	2.4	2.72	0.094	0.107
E	0.49	0.7	0.019	0.028
F	0.61	0.88	0.024	0.035
F1	1.14	1.7	0.045	0.067
F3		1		0.039
G	4.95	5.15	0.195	0.203
H1	7.7	7.9	0.303	0.311
H2	10	10.4	0.394	0.409
L2	16.4		0.646	
L3	28.9		1.138	
L4	13	14	0.512	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.2	6.6	0.244	0.260
L9	3.5	3.93	0.138	0.155
M	2.6			
V	5°			
V2	30°			
V4	45°			
diam	3.75	3.85	0.148	0.152

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