

# MSM06065G1

## 650V Silicon Carbide Schottky Diode

### Features

- 650-Volt Schottky Rectifier
- Shorter recovery time
- High-speed switching possible
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on VF

### Benefits

- Higher safety margin against overvoltage
- Improved efficiency all load conditions
- Increased efficiency compared to Silicon Diode alternatives
- Reduction of Heat Sink Requirements
- Parallel Devices Without Thermal Runaway
- Essentially No Switching Losses

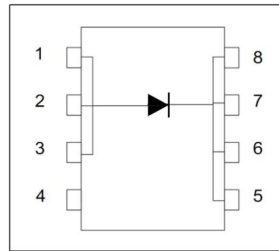
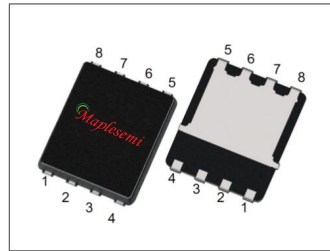
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### Applications

- Switch Mode Power Supplies
- Power Factor Correction
- Motor Drives
- HID Lighting

### Package

Type : DFN 5\*6



5.6.7.8: Cathode

1.2.3: Anode

### Absolute Maximum Ratings

$T_c = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	MSM06065G1	Units
VRRM	Repetitive Peak Reverse Voltage	650	V
VRSM	Surge Peak Reverse Voltage	650	V
VDC	DC Blocking Voltage	650	V
IF	Continuous Forward Current @ $T_c=25^\circ\text{C}$ @ $T_c=135^\circ\text{C}$ @ $T_c=150^\circ\text{C}$	- - 6	A
IFRM	Repetitive Peak Forward Surge Current @ $T_c=25^\circ\text{C}$ $t_p = 10$ ms, Half Sine Wave	40	A
IFSM	Non-Repetitive Peak Forward Surge Current @ $T_c=25^\circ\text{C}$ $t_p = 10$ ms, Half Sine Wave	65	A
IFSM	Non-Repetitive Peak Forward Surge Current @ $T_c=25^\circ\text{C}$ , $t_p = 10$ us, pulse	520	A
Ptot	Power Dissipation @ $T_c=25^\circ\text{C}$ @ $T_c=110^\circ\text{C}$	111 48	W
TJ , Tstg	Operating Junction and Storage Temperature	-55 to +175	$^\circ\text{C}$

## Electrical Characteristics

$T_C = 25^\circ \text{C}$  unless otherwise noted

Symbol	Test Conditions	Test Conditions	Min	Typ	Max	Unit
VF	Forward Voltage	IF=6A, TC=25° C IF=6A, TC=175° C	-	1.3 1.6	1.6 2.0	V
IR	Reverse Current	VR=650V, TC=25° C VR=650V, TC=175° C	-	1 10	5 50	μA
QC	Total Capacitive Charge	VR =400V TJ = 25° C $Q_c = \int_0^{V_r} C(V) dv$	-	17	-	nC
C	Total Capacitance	VR =0V, TJ = 25° C, f=1MHz VR =200V, TJ = 25° C, f=1MHz VR =400V, TJ = 25° C, f=1MHz	-	332 33 28	-	pF
EC	Capacitance Stored Energy	VR=400V	-	4.3	-	μJ

## Thermal Characteristics

Symbol	Parameter	Typ	Unit
RθJC	Thermal Resistance from Junction to Case	1.0	°C/W

## Typical Characteristics

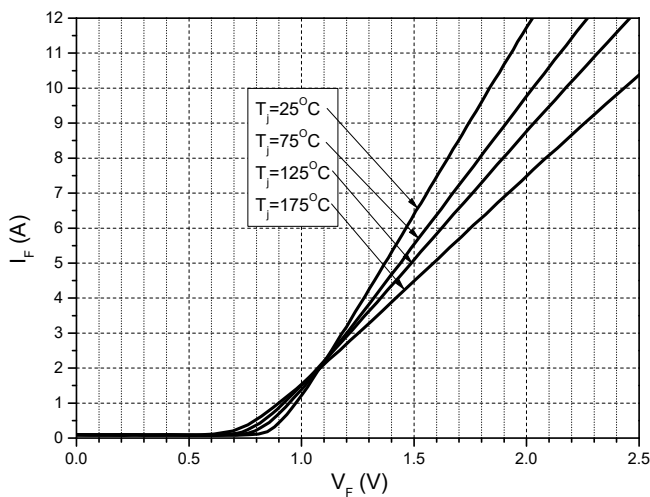


Figure 1. Forward Characteristics

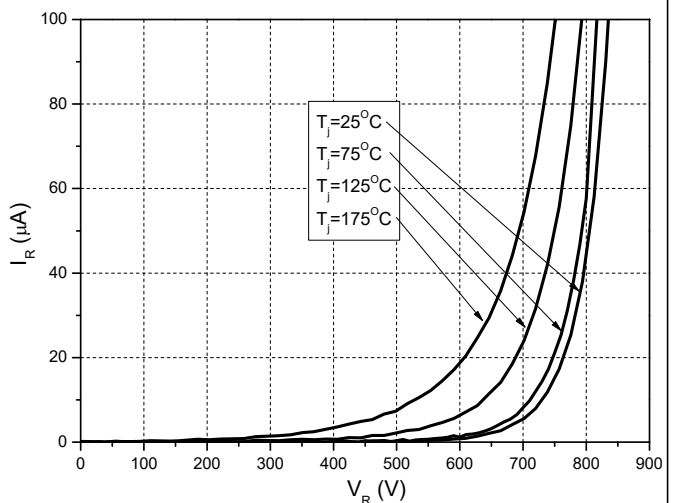


Figure 2. Reverse Characteristics

# Typical Characteristics

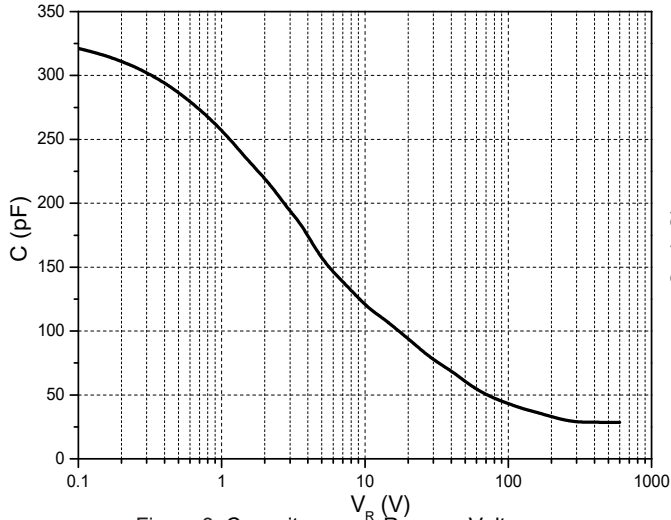


Figure 3. Capacitance vs. Reverse Voltage

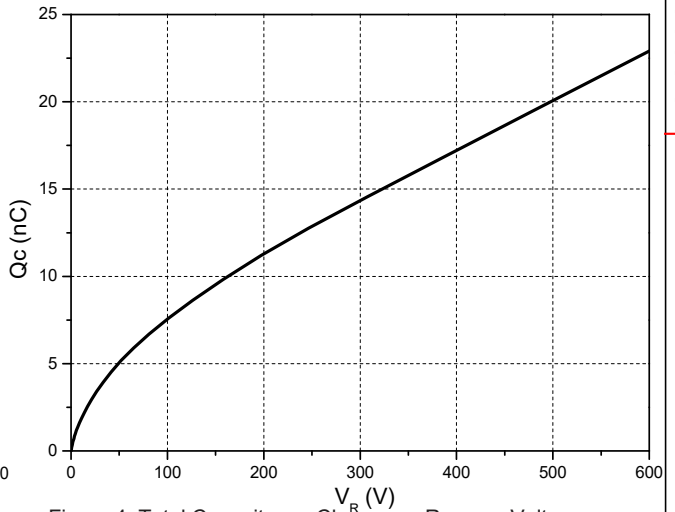


Figure 4. Total Capacitance Charge vs. Reverse Voltage

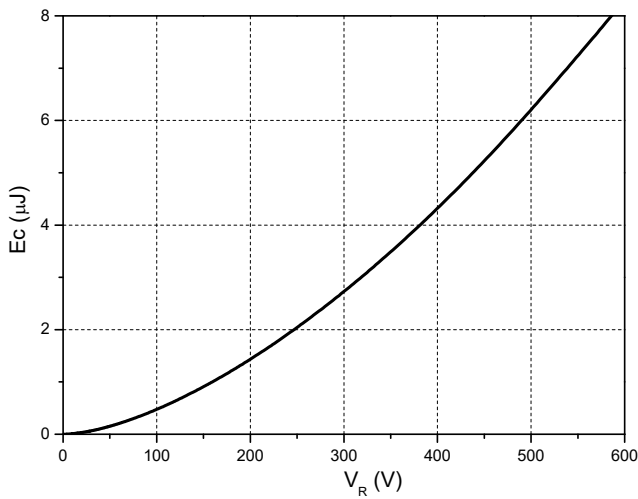


Figure 5. Capacitance Stored Energy

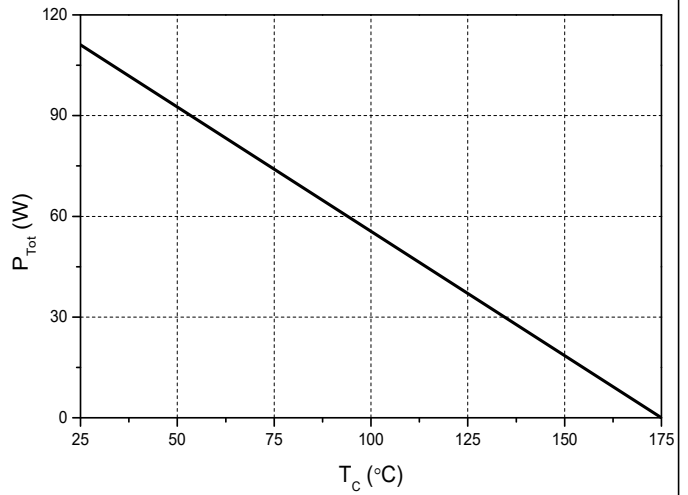


Figure 6. Power Derating

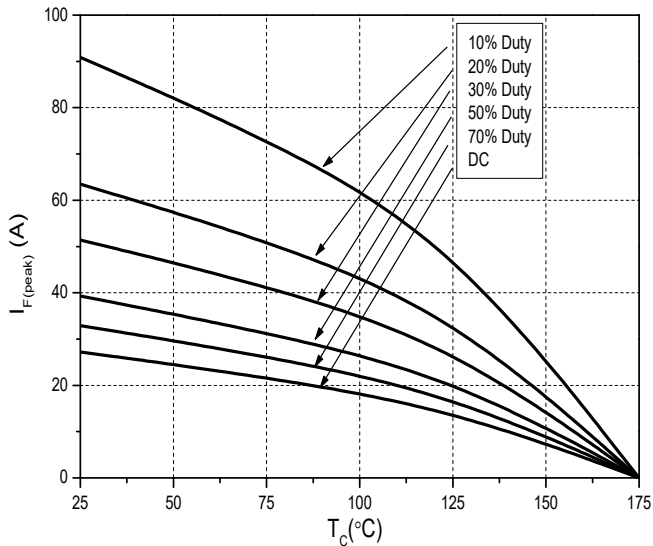


Figure 7. Current Derating

单击下面可查看定价，库存，交付和生命周期等信息

[>>Maplesemi\(美浦森半导体\)](#)