

6A 650V SiC Schottky Diode
■ Applications

- Switch Mode Power Supply
- Power Factor Correction
- Solar Inverter
- Uninterruptible Power Supply

■ Features

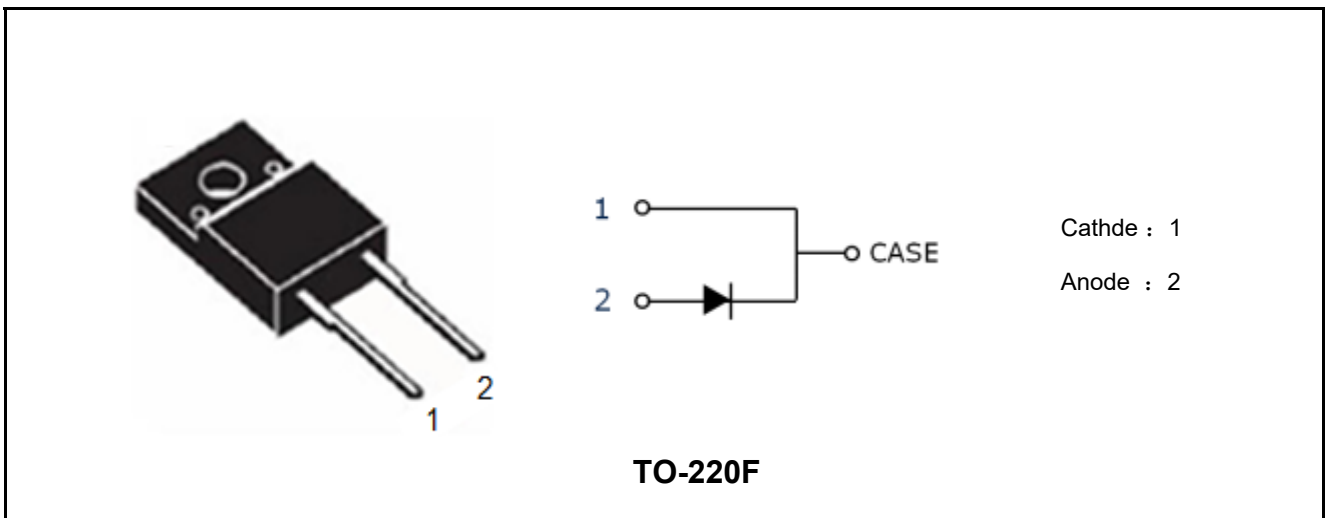
- No Reverse Recovery/ No Forward Recovery
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current Capability
- 100% UIS and RG Tested

■ Product Summary

V_{RRM}	650	V
$I_F@T_c=150^\circ\text{C}$	6	A
$V_{F,TYP}@T_c=25^\circ\text{C}$	1.5	V
$V_{F,TYP}@T_c=175^\circ\text{C}$	1.9	V
Q_C	15	nC

■ Benefits

- Higher System Efficiency
- System Cost and Size Savings
- High Frequency Operation
- Higher System Reliability
- Reduced EMI



Marking	Package	Packaging	Min. package quantity
MF3S06C065	TO-220F	Tube	1000



■ Absolute Maximum Ratings (Tc=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	650	V
Surge Peak Reverse Voltage	V_{RSM}	650	V
DC Peak Blocking Voltage	V_R	650	V
Continuous Forward Current	I_F	6	A
Tc=150°C			
Non-Repetitive Peak Forward Surge Current	I_{FSM}	55	A
Power Dissipation	P_D	37.5	W
Junction Temperature	T_J	175	°C
Storage Temperature	T_{stg}	-55-175	°C

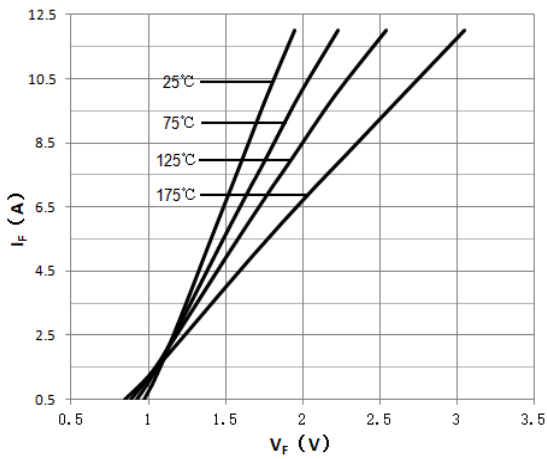
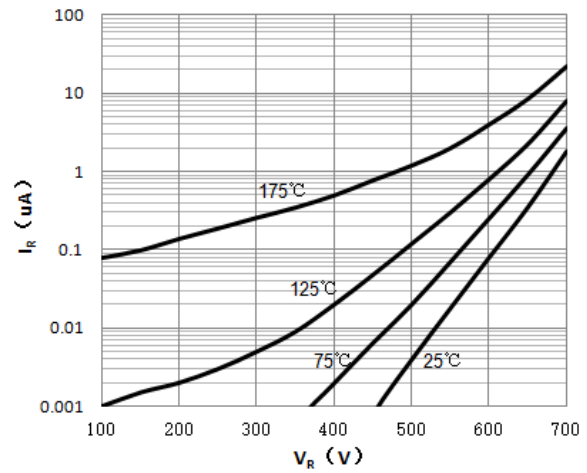
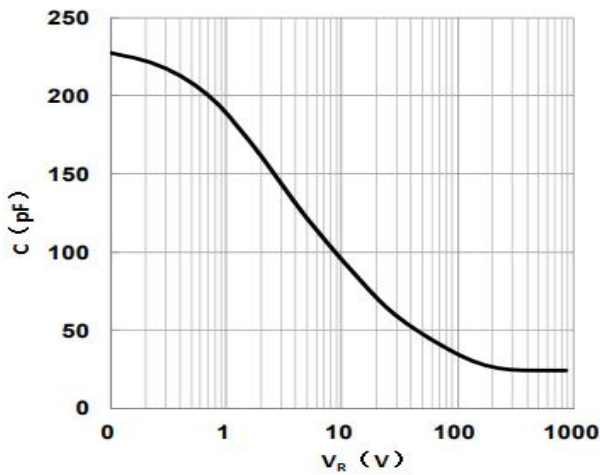
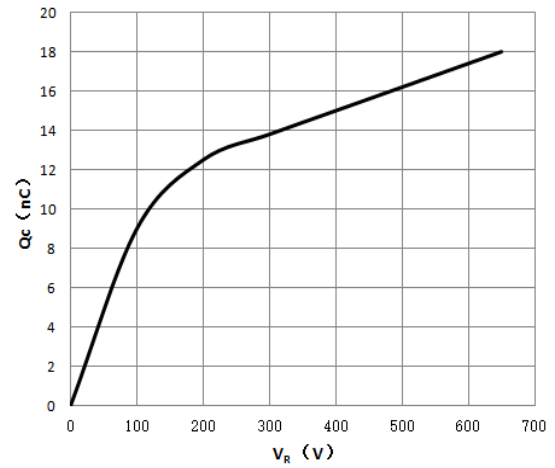
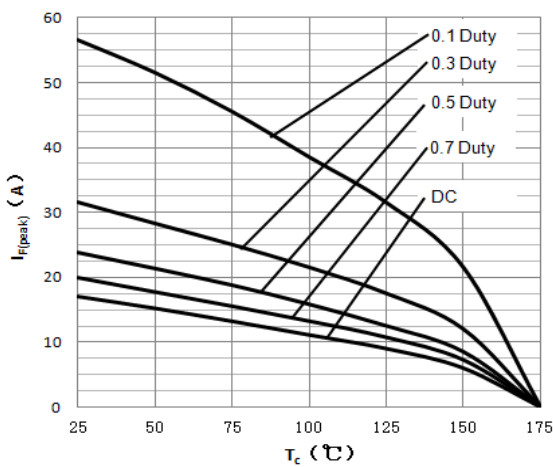
■ Thermal Characteristics

Parameter	Symbol	Max	Unit
Maximum Junction-to-Case	$R_{\theta JC}$	4	°C/W
Maximum Junction-to-Ambient	$R_{\theta JA}$	60	°C/W

■ Electrical Characteristics (Tc=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Parameters						
DC Blocking Voltage	V_{DC}	$I_R=100\mu A$	650	-	-	V
Forward Voltage	V_F	$I_F=6A$	-	1.5	1.7	V
		$I_F=6A, T_J=175^\circ C$	-	1.9	2.2	V
Reverse Current	I_R	$V_R=650V$	-	0.3	10	μA
		$V_R=650V, T_J=175^\circ C$	-	15	100	μA
AC Parameters						
Total Capacitive Charge	Q_C	$I_F=6A, di/dt=200A/\mu s, V_R=400V, T_J=25^\circ C$	-	15	-	nC
Total Capacitive	C	$V_R=1V, f=1MHz$	-	195	-	pF
		$V_R=300V, f=1MHz$	-	25	-	
		$V_R=600V, f=1MHz$	-	24	-	



■ Characteristics Curves

Forward Characteristics

Reverse Characteristics

Capacitance

Recovery Charge vs. Reverse Voltage

Current Derating