

6A 650V SiC Schottky Diode
■ Applications

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

■ Features

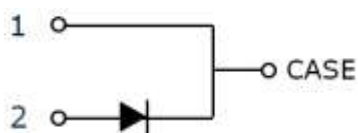
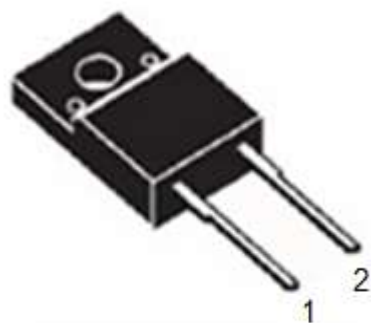
- No Reverse Recovery/ No Forward Recovery
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current Capability
- 100% UIS and RG Tested

■ 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



Cathde : 1

Anode : 2

TO-220F

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 Tc=150°C	I_F	6	A
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

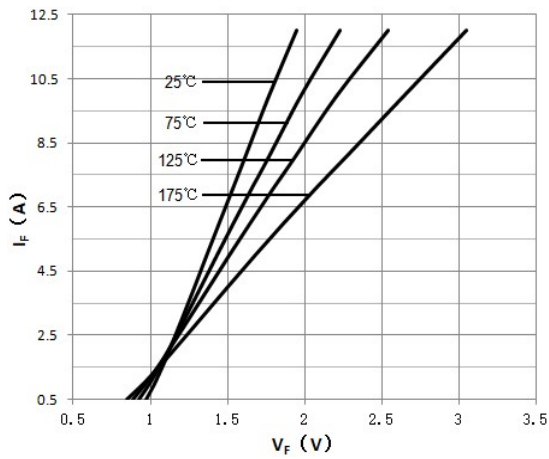
■ Electrical Characteristics (Tc=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Parameters						
DC Blocking Voltage	V _{DC}	I _R =100uA	650	-	-	V
Forward Voltage	V _F	I _F =6A	-	1.5	1.7	V
		I _F =6A, T _J =175℃	-	1.9	2.2	V
Reverse Current	I _R	V _R =650V	-	0.3	10	uA
		V _R =650V, T _J =175℃	-	15	100	uA
AC Parameters						
Total Capacitive Charge	Q _C	I _F = 6A, dI/dt=200A/μs, V _R =400V, T _J =25℃	-	15	-	nC
Total Capacitive	C	V _R =1V, f=1MHz	-	195	-	pF
		V _R =300V, f=1MHz	-	25	-	
		V _R =600V, f=1MHz	-	24	-	

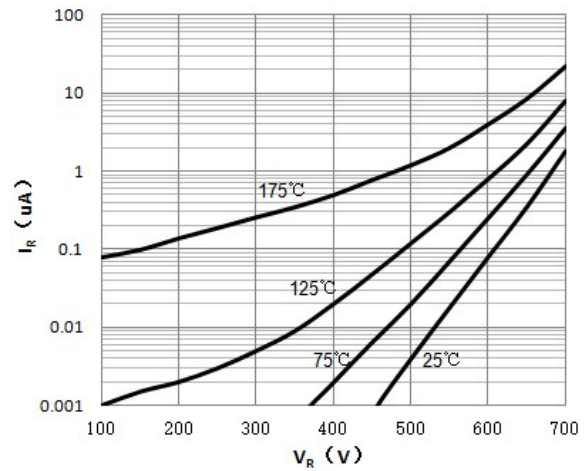




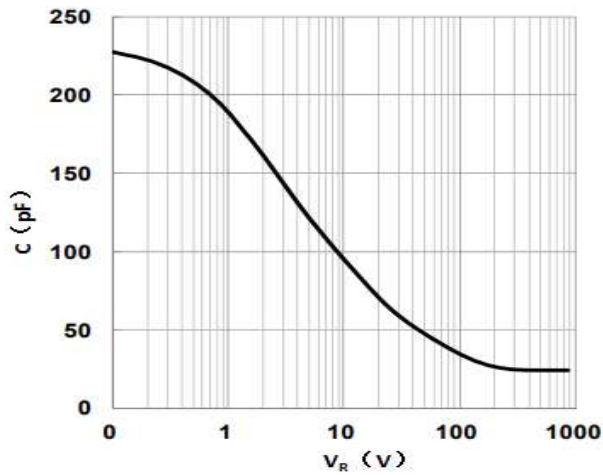
■ Characteristics Curves



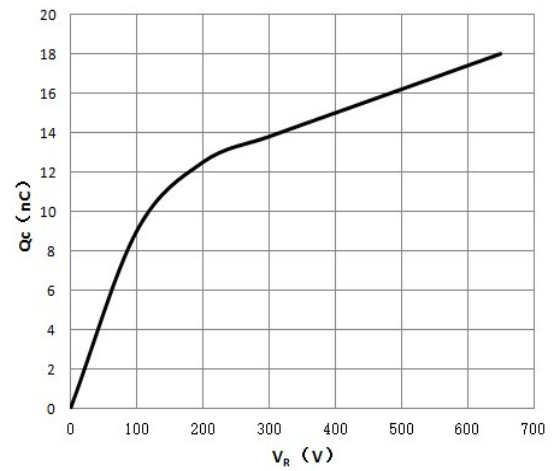
Forward Characteristics



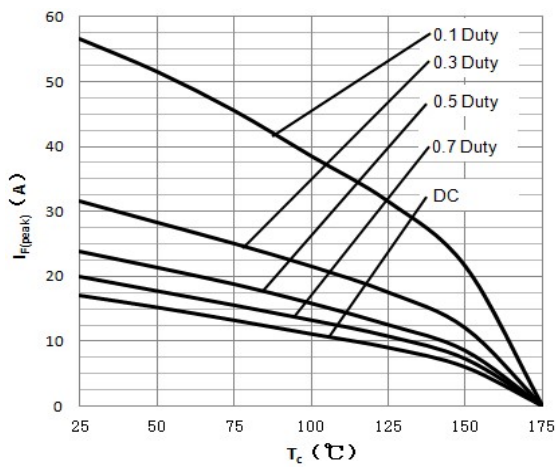
Reverse Characteristics



Capacitance



Recovery Charge vs. Reverse Voltage



Current Derating





MF3S06C065

Unit: mm

Symbol	Min	Nom	Max	Symbol	Min	Nom	Max
A	4.5		4.9	E1		7	
A1	2.3		2.9	e		2.54	
b	0.45		0.9	e1	1		1.5
b1	1.1		1.7	L	12.5		14.3
b2	1.2		1.4	L1	9.45		10.05
c	0.35		0.9	L2	15		16
D	14.5		17	L3	3.2		4.4
D1	6.1		6.9	ΦP	3		3.3
E	9.6		10.3	Q	2.5		2.9

