

4A 650V SiC Schottky Diode
Applications

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

Features

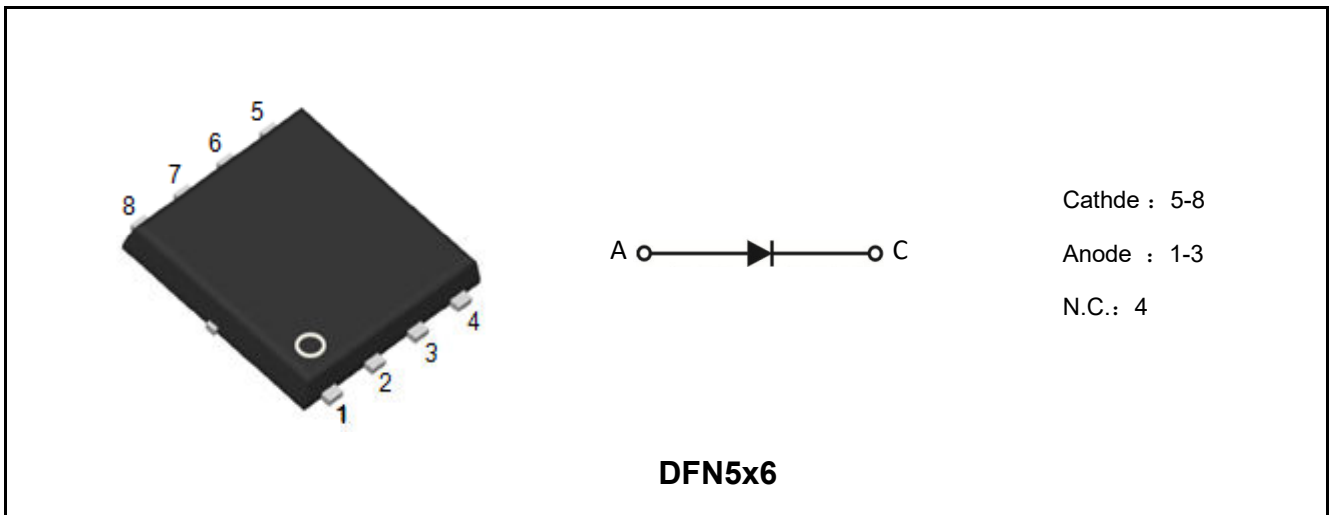
- No Reverse Recovery/ No Forward Recovery
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current Capability
- 100% UIS and RG Tested

Product Summary

V_{RRM}	650	V
$I_F@T_c=150^\circ\text{C}$	4	A
$V_{F,TYP}@T_c=25^\circ\text{C}$	1.5	V
$V_{F,TYP}@T_c=175^\circ\text{C}$	1.8	V
Q_c	8.5	nC

Benefits

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



Marking	Package	Packaging	Min. package quantity
MDG3S04C065	DFN5x6	Tape & Reel	5000



■ 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	4	A
Tc=150°C			
Repetitive Peak Forward Surge Current	I_{FSM}	35	A
Power Dissipation	P_D	50	W
Junction Temperature	T_j	175	°C
Storage Temperature	T_{stg}	-55-175	°C

■ Thermal Characteristics

Parameter	Symbol	Max	Unit
Maximum Junction-to-Case	$R_{\theta JC}$	3	°C/W
Maximum Junction-to-Ambient	$R_{\theta JA}$	60	°C/W

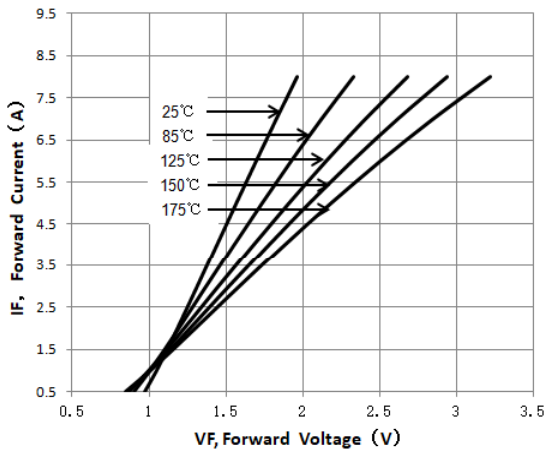
■ Electrical Characteristics (Tc=25°C unless otherwise noted)

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	$I_F=4A$	-	1.5	1.7	V
		$I_F=4A, T_J=175^\circ C$	-	1.8	2.3	V
Reverse Current	I_R	$V_R=650V$	-	0.5	10	μA
		$V_R=650V, T_J=175^\circ C$	-	10	50	μA
AC Parameters						
Total Capacitive Charge	Q_C	$I_F=4A, di/dt=500A/\mu s, V_R=400V, T_J=25^\circ C$	-	8.5	-	nC
Total Capacitive	C	$V_R=1V, f=1MHz$	-	135	-	pF
		$V_R=200V, f=1MHz$	-	17	-	
		$V_R=400V, f=1MHz$	-	16	-	

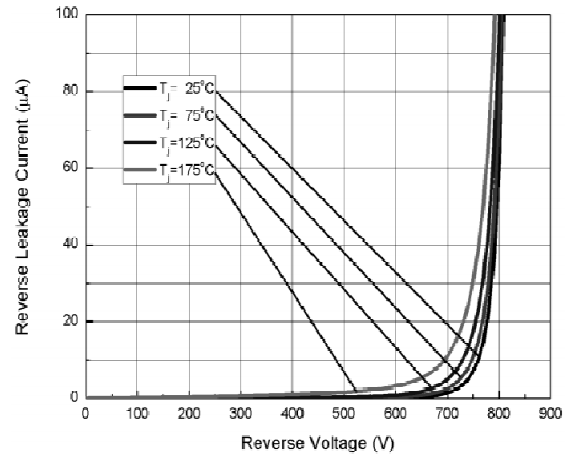




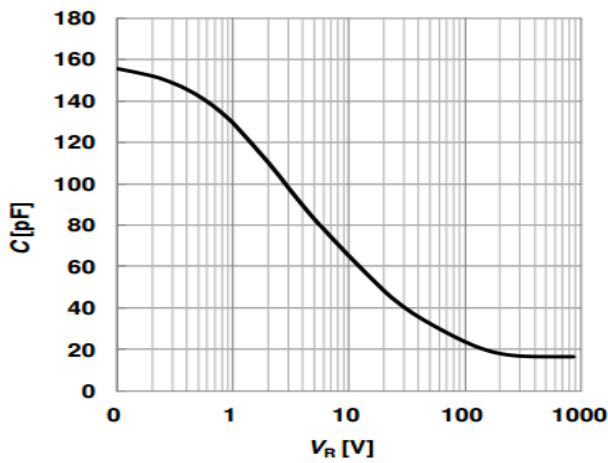
Characteristics Curves



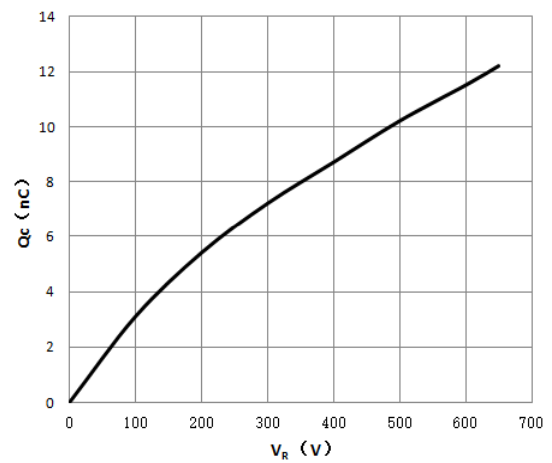
Forward Characteristics



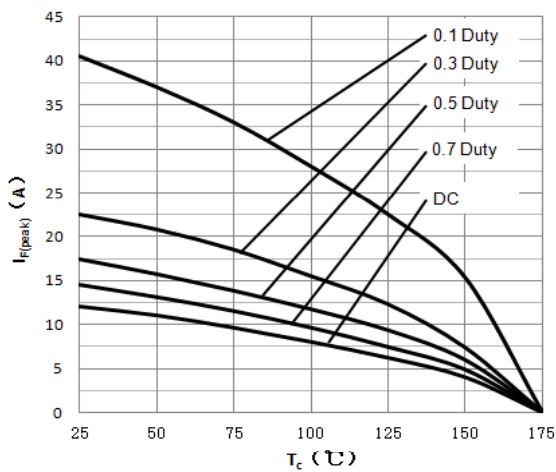
Reverse Characteristics



Capacitance



Recovery Charge vs. Reverse Voltage



Current Derating





DFN5x6 Package Dimensions

Unit: mm

Symbol	Min	Nom	Max	Symbol	Min	Nom	Max
A	0.90		1.10	k	1.15		1.35
A3	0.15		0.30	b	0.20		0.40
D	4.90		5.10	e	1.15		1.35
D1	3.90		4.10	L	0.50		0.65
D2	4.75		5.05	L1	0.43		0.55
E	5.85		6.15	H	0.55		0.68
E1	3.35		3.55	θ	8°		12°
E2	5.55		5.85				

