MC3S04C065

4A 650V SiC Schottky Diode

Applications

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

Product Summary

V_{RRM}	650	V
I_F@Tc=150℃	4	A
$V_{F,TYP}$@Tc=25℃	1.5	V
$V_{F,TYP}$@Tc=175℃	1.8	V
Qc	8.5	nC

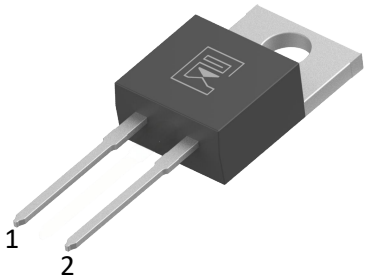
Features

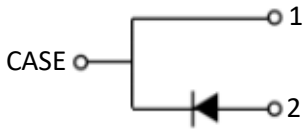
- No Reverse Recovery/ No Forward Recovery
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current Capability
- 100% UIS and RG Tested

Benefits

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

TO-220





Cathde：1

Anode：2

Package Marking and Ordering Information

Ordering code	Marking	Package	Packaging	Min. package quantity
MC3S04C065	MC3S04C065	TO-220	Tube	1000

Absolute Maximum Ratings（Tc=25℃ 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℃	I_F	4	A
Non-Repetitive Peak Forward Surge Current	I_{FSM}	35	A
Power Dissipation	P_D	75	W
Junction Temperature	T_j	175	℃
Storage Temperature	T_{stg}	-55-175	℃

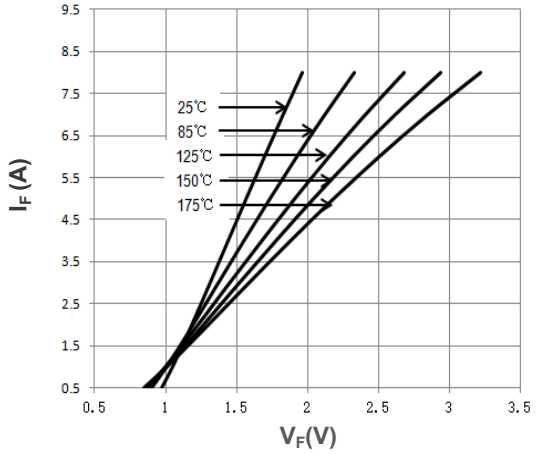
Thermal Characteristics

Parameter	Symbol	Max	Unit
Maximum Junction-to-Case	$R_{\theta JC}$	2	℃/W
Maximum Junction-to-Ambient	$R_{\theta JA}$	60	℃/W

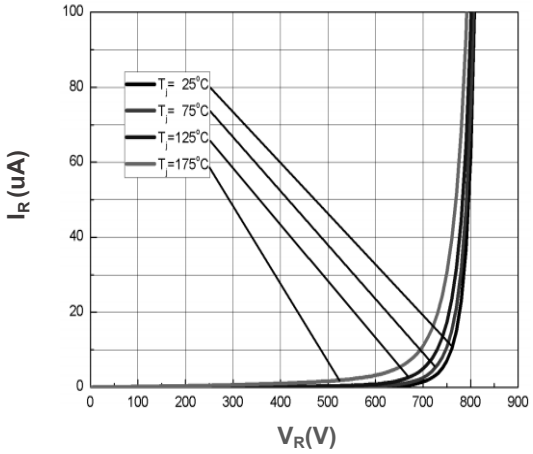
Electrical Characteristics（Tc=25℃ unless otherwise noted)

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=4A	-	1.5	1.7	V
		I_F=4A，T_J=175℃	-	1.8	2.3	V
Reverse Current	I_R	V_R=650V	-	0.5	10	uA
		V_R=650V，T_J=175℃	-	10	50	uA
AC Parameters						
Total Capacitive Charge	Q_C	I_F= 4A, dI/dt=500A/μs, V_R=400V, T_J=25℃	-	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	-	

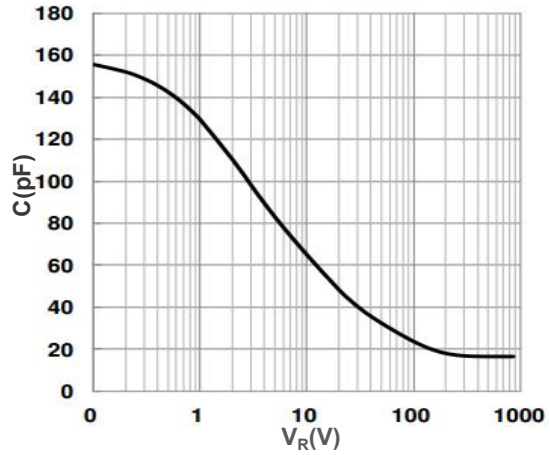
Characteristics Curves



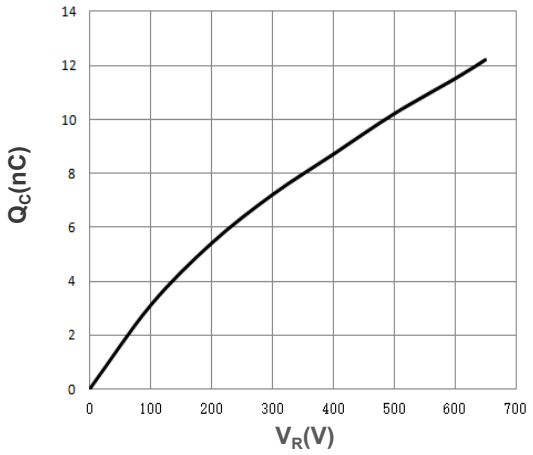
Output Characteritsics T_J=25℃



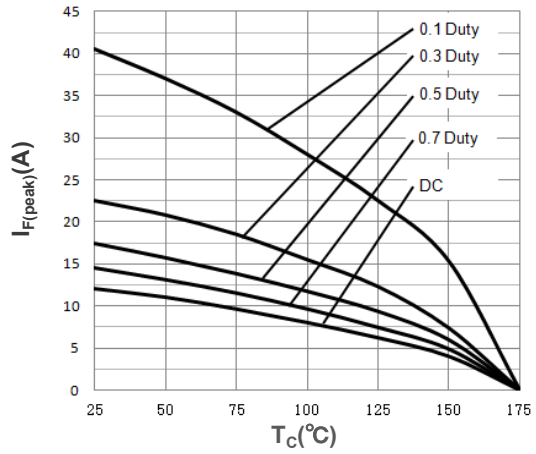
Output Characteritsics T_J=175℃



Transfer Characteritsics



Normalized On-Resistance vs. Temperature



Current Derating

TO-220 Package Dimensions

Unit：mm

Symbol	Min	Nom	Max	Symbol	Min	Nom	Max
A	4		4.8	e		2.54	
B	1.2		1.4	e1	1		1.5
B1	1		1.4	F	1.1		1.4
b1	0.65		1	L	12.5		14.5
c	0.4		0.55	Ll	3	3.5	4
D	15		16.5	ΦP		3.8	
D1	5.9		6.9	Q	2.5		3
E	9.9		10.7	Q1	2		2.9