

» Applications

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

» 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

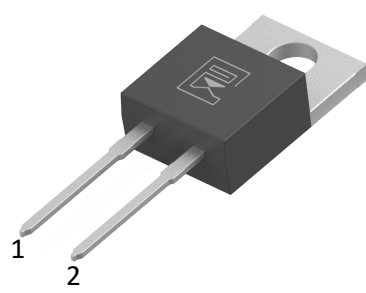
» Features

- No Reverse Recovery/ No Forward Recovery
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current Capability



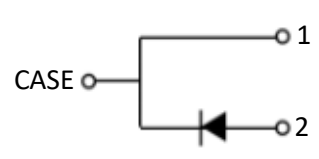
» Benefits

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



1
2

TO-220



CASE

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°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			
Non-Repetitive Peak Forward Surge Current	I_{FSM}	35	A
Power Dissipation	P_D	75	W
Junction Temperature	T_j	175	°C
Storage Temperature	T_{stg}	-55-175	°C

» Thermal Characteristics

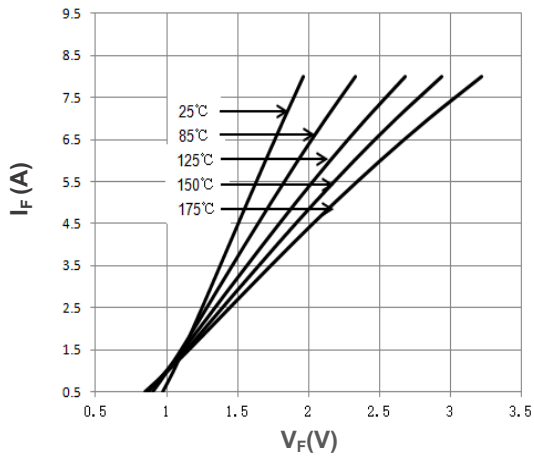
Parameter	Symbol	Max	Unit
Maximum Junction-to-Case	$R_{\theta JC}$	2	°C/W
Maximum Junction-to-Ambient	$R_{\theta JA}$	60	°C/W

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

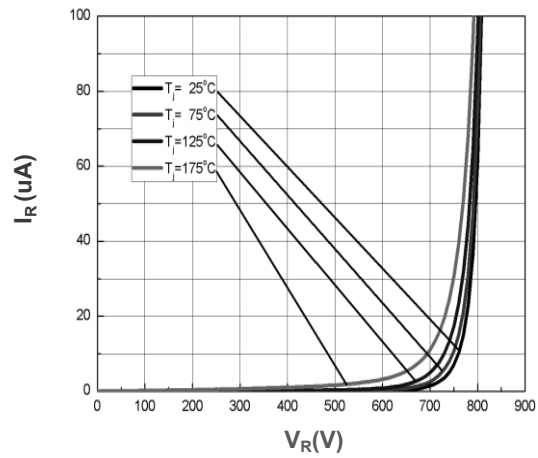
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Parameters						
DC Blocking Voltage	V_{DC}	$I_R=100\mu A$	650	-	-	V
Forward Voltage	V_F	$I_F=4A$	-	1.5	1.7	V
		$I_F=4A, T_J=175^\circ C$	-	1.8	2.3	V
Reverse Current	I_R	$V_R=650V$	-	0.5	10	μA
		$V_R=650V, T_J=175^\circ C$	-	10	50	μA
AC Parameters						
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	-	



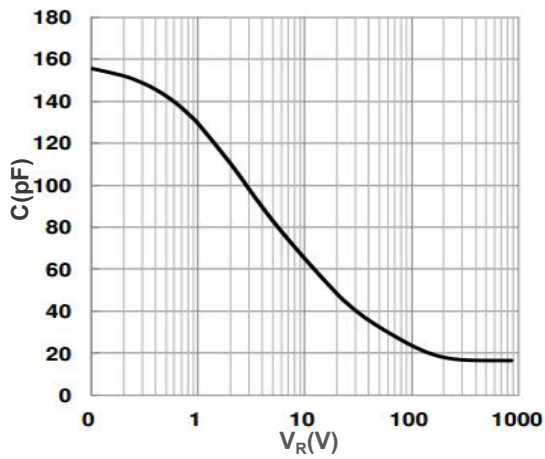
Characteristics Curves



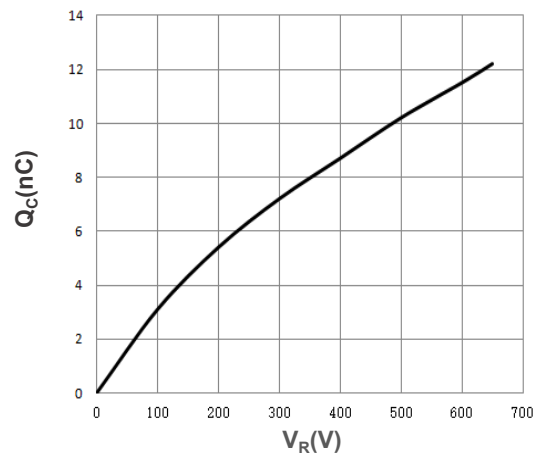
Output Characteristics $T_J=25^\circ\text{C}$



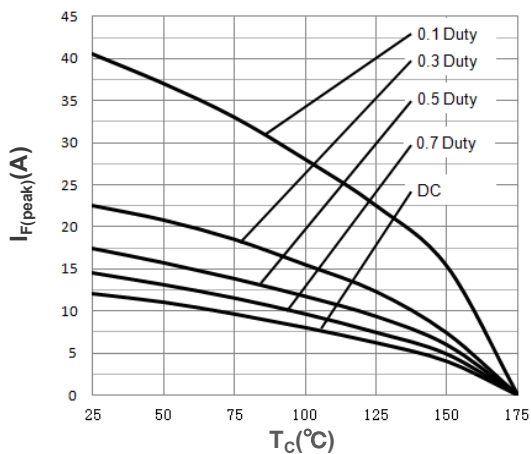
Output Characteristics $T_J=175^\circ\text{C}$



Transfer Characteristics



Normalized On-Resistance vs. Temperature



Current Derating

