

6A 650V SiC Schottky Diode
■ Applications

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

■ Features

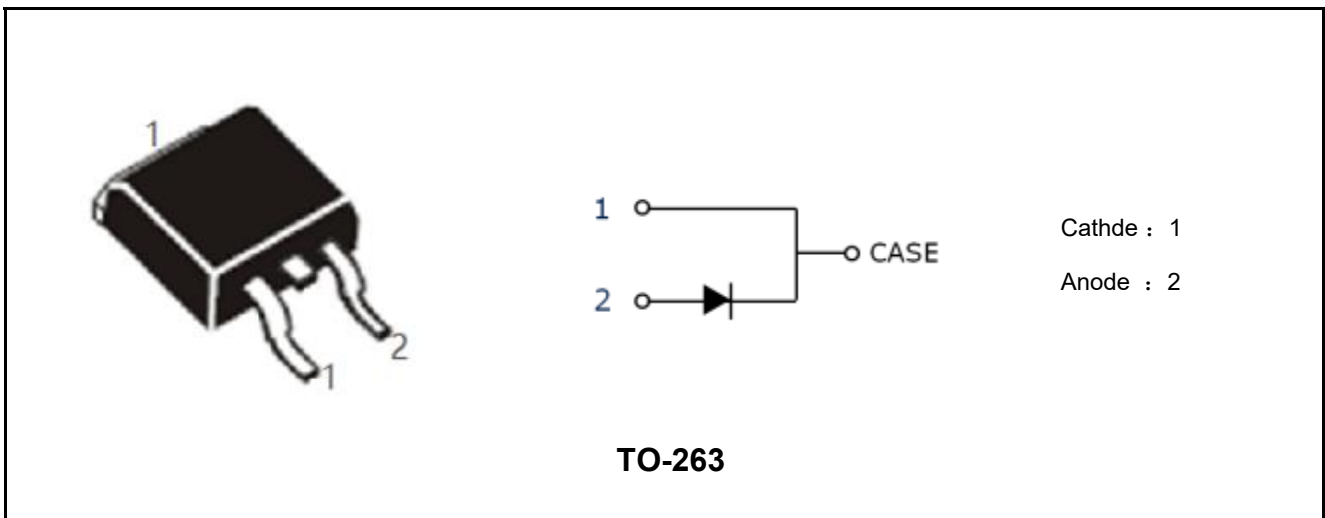
- No Reverse Recovery/ No Forward Recovery
- Temperature Independent Switching Behavior
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current Capability
- 100% UIS and RG Tested

■ 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
ML3S06C065	TO-263	Tube	1000
ML3S06C065	TO-263	Tape & Reel	800



■ 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	75	W
Junction Temperature	T_J	175	°C
Storage Temperature	T_{stg}	-55-175	°C

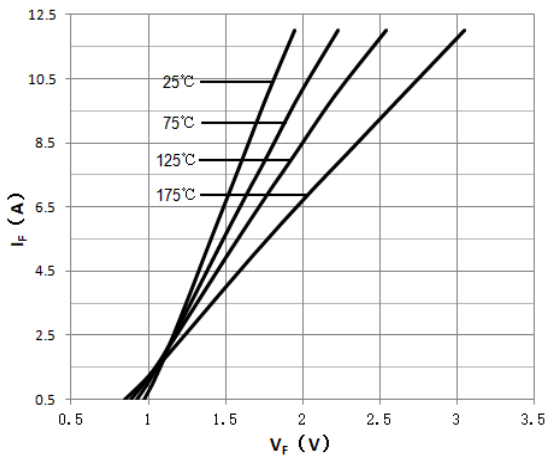
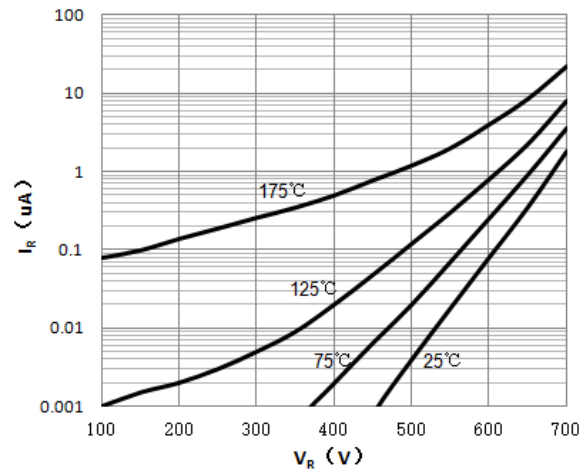
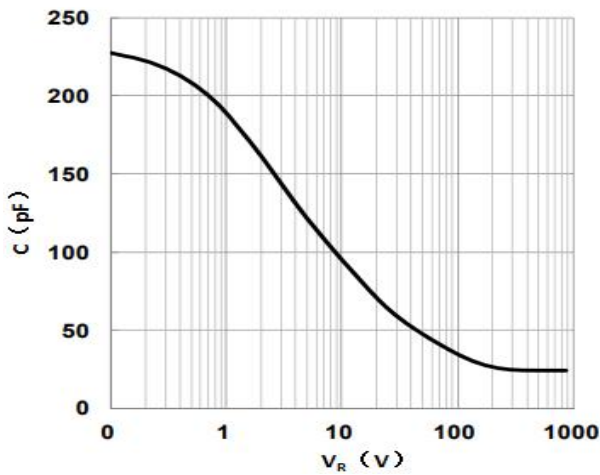
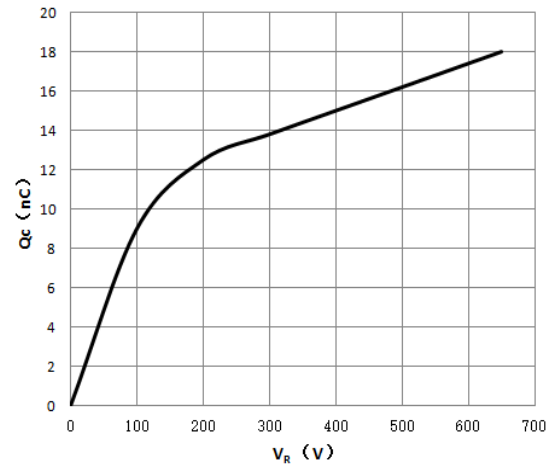
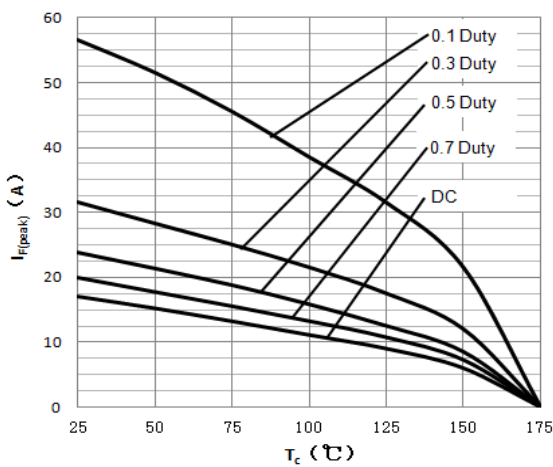
■ Thermal Characteristics

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	$I_F=6A$	-	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


■ TO-263 Package Dimensions

Unit: mm

Symbol	Min	Nom	Max	Symbol	Min	Nom	Max
A	4.42		4.72	e1	2.44	2.54	2.64
B	1.22		1.4	e2	4.98		5.18
b	0.76		0.86	L1	14.7	15.1	15.5
b1	1.22		1.4	L2	2	2.3	2.6
b2	0.33		0.43	L3	1.5		2
C	1.22		1.35	K	-0.1		0.1
D	9.95		10.25	Y	8.51	8.61	8.71
E	8.99		9.29				

