

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
Qc	8.5	nC

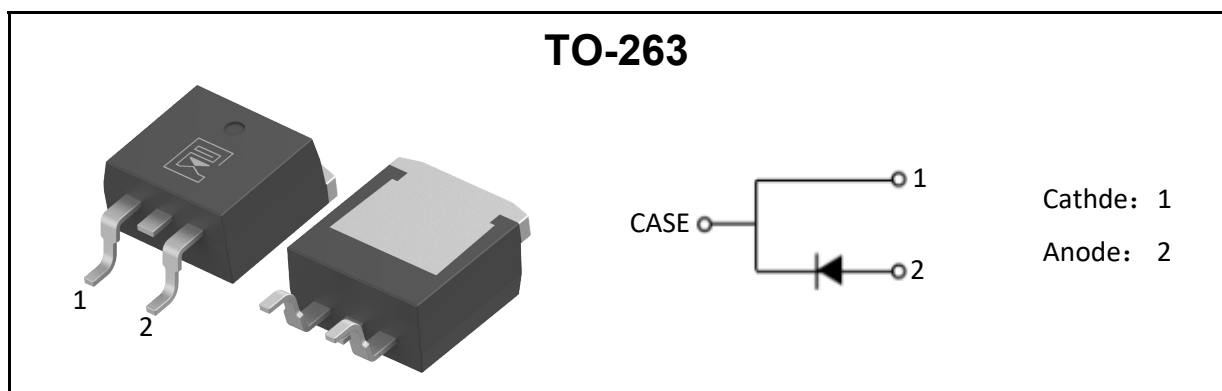
Features

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



Benefits

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



Package Marking and Ordering Information

Ordering code	Marking	Package	Packaging	Min. package quantity
ML3S04C065	ML3S04C065	TO-263	Tube	1000
ML3S04C065	ML3S04C065	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 Tc=150°C	I_F	4	A
Non-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

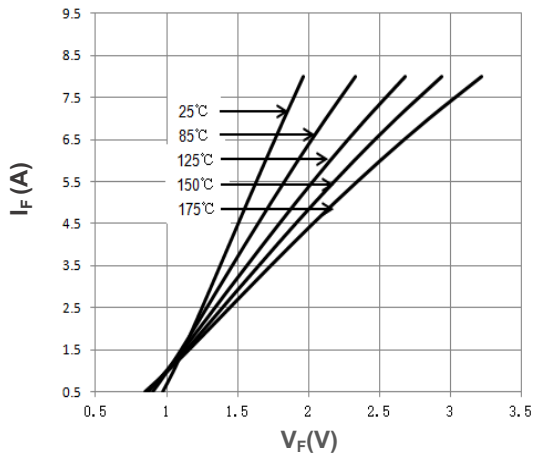
» Thermal Characteristics

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

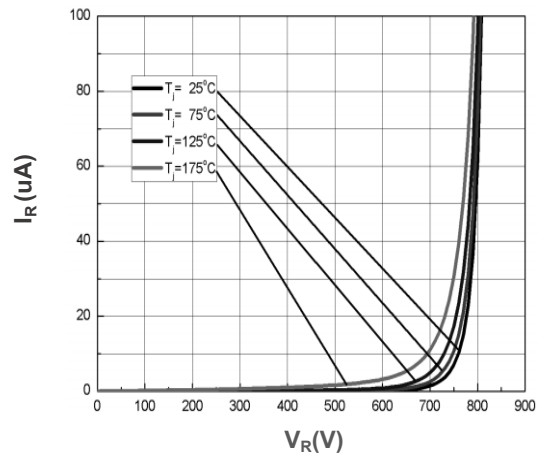
» Electrical Characteristics (Tc=25°C unless otherwise noted)

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	-	

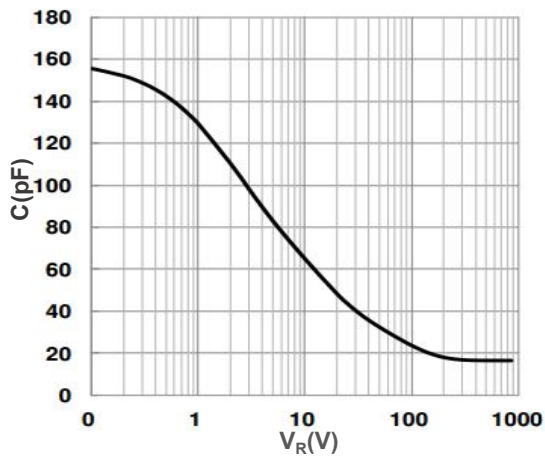
Characteristics Curves



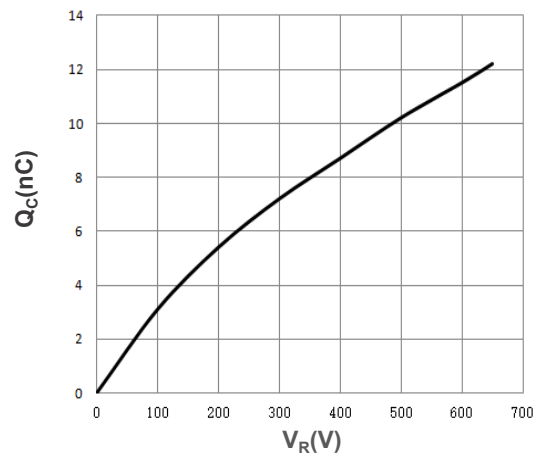
Output Characteristics $T_J=25^\circ\text{C}$



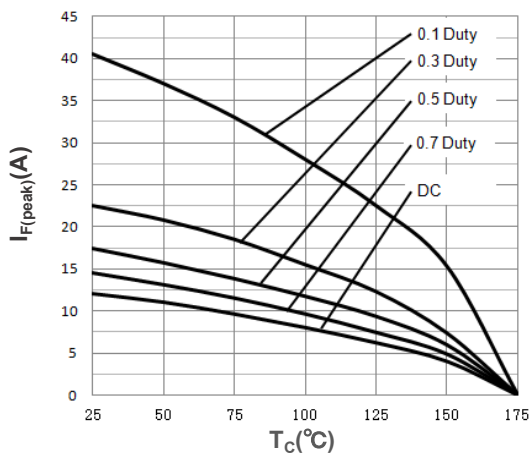
Output Characteristics $T_J=175^\circ\text{C}$



Transfer Characteristics



Normalized On-Resistance vs. Temperature



Current Derating



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				

