

Features

- Leading trench technology for low $R_{DS(on)}$
- Low Gate Charge
- Excellent package for good heat dissipation

Product Summary

V_{DS}	$R_{DS(on)}$ MAX	I_D MAX
-60V	215mΩ@-10V	-3A
	280mΩ@-4.5V	

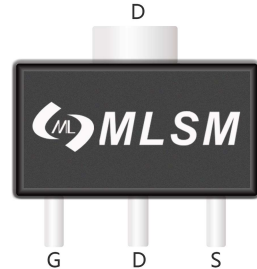
Application

- Video monitor
- Power management

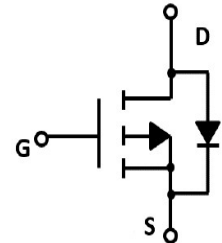


0G03AP: Device code
 XXXX : Code

Marking and pin assignment



SOT-89-3L top view



Schematic diagram



Pb-Free



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$	-3

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	-9	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	-3	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	0.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		250	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MZ0G03AP	SOT-89-3L	0G03AP	1,000	10,000	40,000	7"reel

Electrical Characteristics (T _J =25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
B _{V(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-60	—	—	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-60V, V _{GS} =0V	—	—	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	—	—	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.7	-2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-3A	—	130	180	mΩ
		V _{GS} =-4.5V, I _D =-2A	—	150	250	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-30V, V _{GS} =0V, f=1MHz	—	430	—	pF
C _{OSS}	Output Capacitance		—	33	—	pF
C _{RSS}	Reverse Transfer Capacitance		—	22	—	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =-30V, I _D =-3A, V _{GS} =-10V	—	8.5	—	nC
Q _{gs}	Gate Source Charge		—	2.1	—	nC
Q _{gd}	Gate Drain Charge		—	1.6	—	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-30V, I _D =-3A, V _{GS} =-10V, R _G =6Ω	—	5.3	—	nS
t _r	Turn-on Rise Time		—	20	—	nS
t _{d(off)}	Turn-Off Delay Time		—	33	—	nS
t _f	Turn-Off Fall Time		—	10	—	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =-3A	—	—	-1.2	V

Typical Operating Characteristics

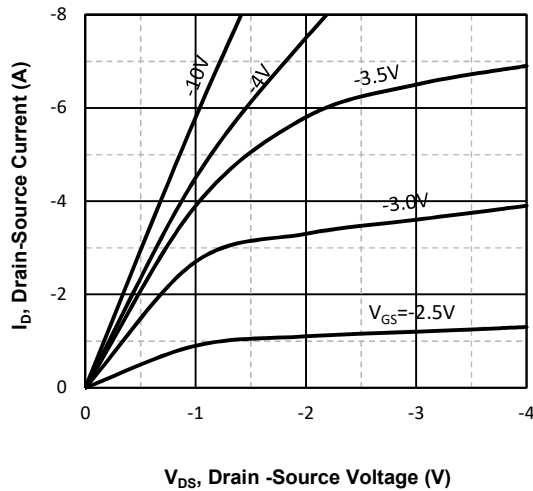


Fig1. Typical Output Characteristics

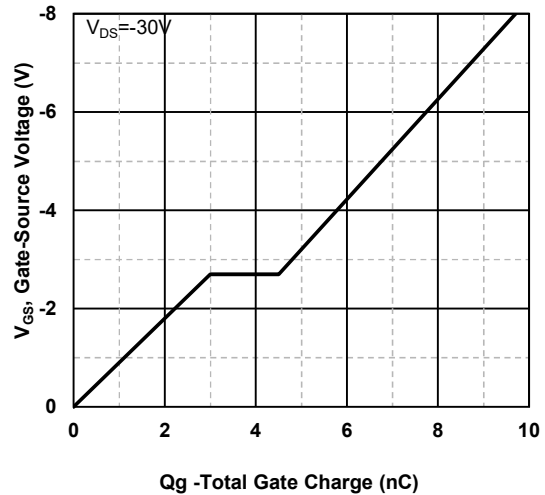


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

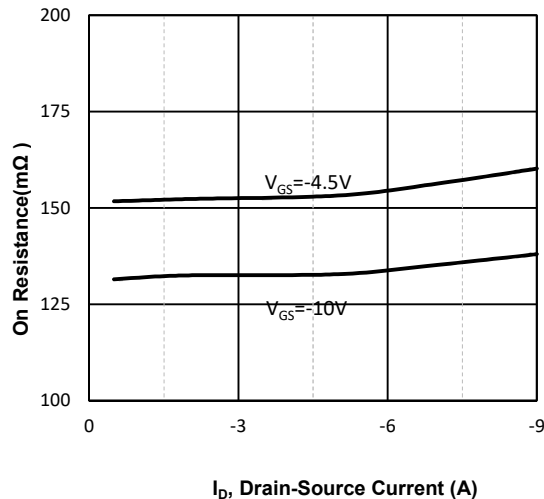


Fig3. On Resistance Vs. Drain-Source Current

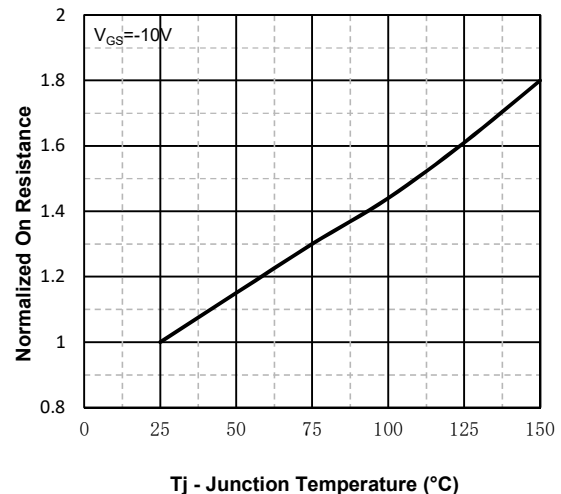


Fig4. Normalized On-Resistance Vs. Temperature

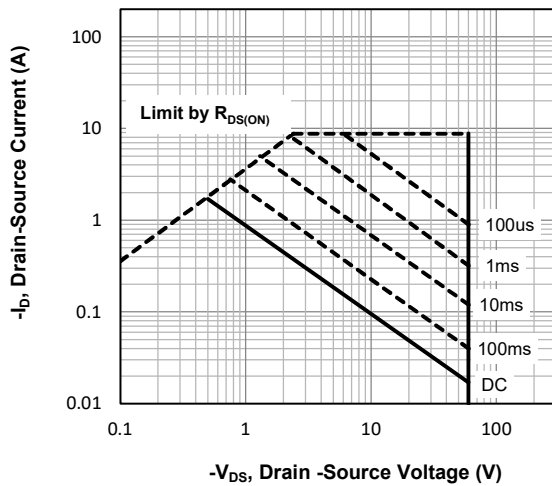


Fig5. Maximum Safe Operating Area

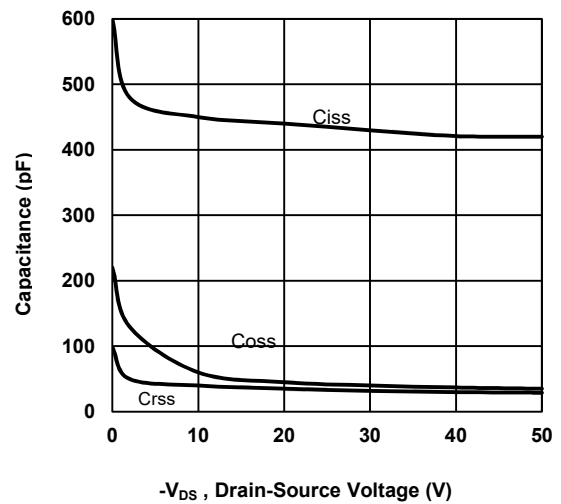
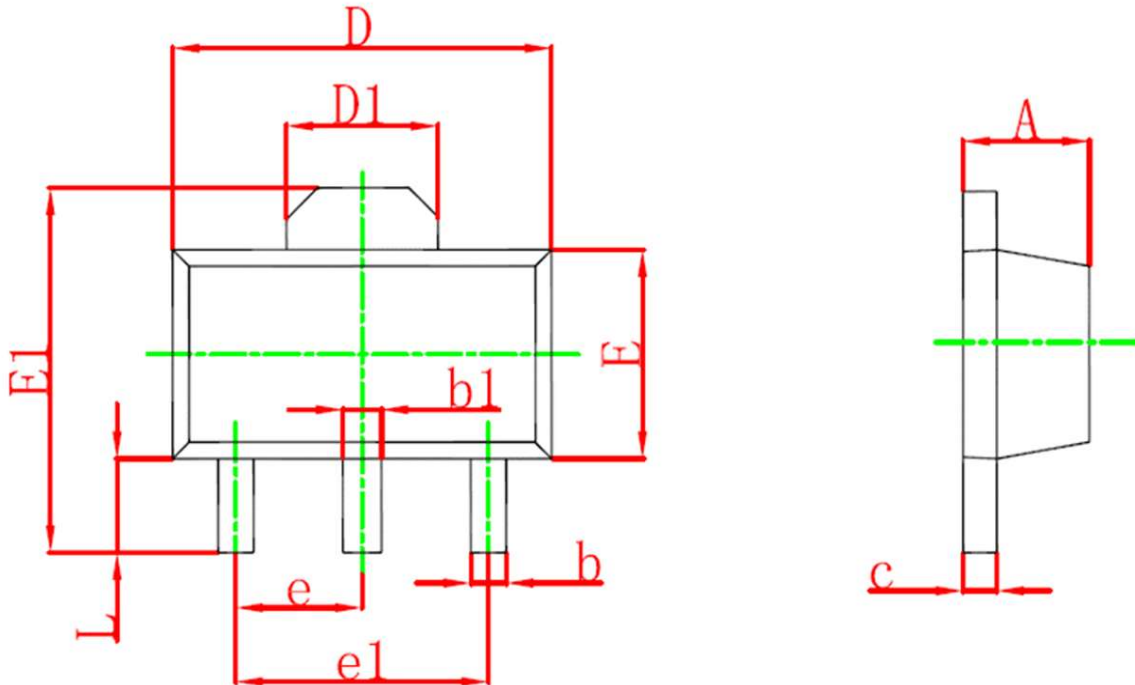


Fig6 Typical Capacitance Vs. Drain-Source Voltage

SOT-89-3L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions in Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047