

Features

- Trench Power LV MOSFET technology
- High Density Cell Design for Low $R_{DS(ON)}$
- High Speed switching

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
-20V	21mΩ@-4.5V	-8A
	30mΩ@-2.5V	

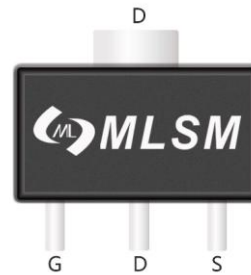
Application

- Battery protection
- Load switch
- Power management

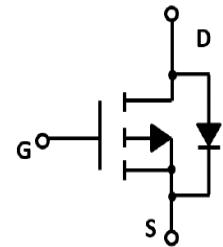


0C08AP : Device code
 XXXX : Code

Marking and pin assignment



SOT-89-3L top view



Schematic diagram



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	-20	V
V_{GS}	Gate-Source Voltage	±12	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$ -8	A

Mounted on Large Heat Sink

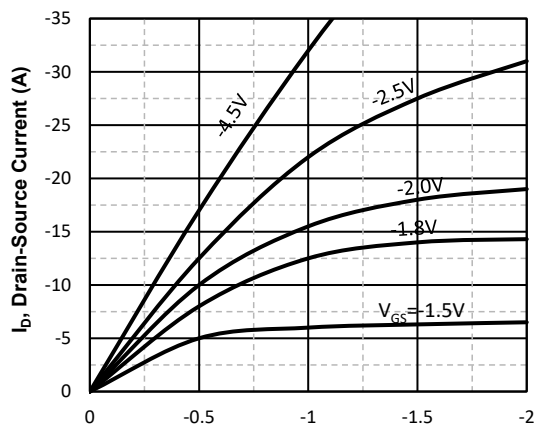
I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ -32	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$ -8	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 1.7	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	315	°C/W

Ordering Information (Example)

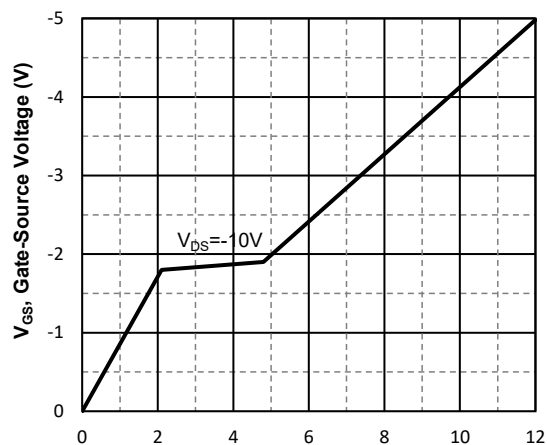
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MZ0C08AP	SOT-89-3L	0C08AP	1,000	10,000	40,000	7"reel

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)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-18V, V _{GS} =0V	--	--	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±10V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.7	-1.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-4.5V, I _D =-4A	--	21	30	mΩ
		V _{GS} =-2.5V, I _D =-3A	--	30	40	mΩ
		V _{GS} =-1.8V, I _D =-1A	--	40	75	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-9V, V _{GS} =0V, f=1MHz	--	1015	--	pF
C _{OSS}	Output Capacitance		--	138	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	105	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =-9V, I _D =-5.6A, V _{GS} =-4.5V	--	11.3	--	nC
Q _{gs}	Gate Source Charge		--	2.3	--	nC
Q _{gd}	Gate Drain Charge		--	2.4	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-9V, I _D =-1A, V _{GS} =-4.5V, R _G =2.5Ω	--	8.5	--	nS
t _r	Turn-on Rise Time		--	35.5	--	nS
t _{d(off)}	Turn-Off Delay Time		--	78	--	nS
t _f	Turn-Off Fall Time		--	58	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =-8A	--	--	-1.2	V

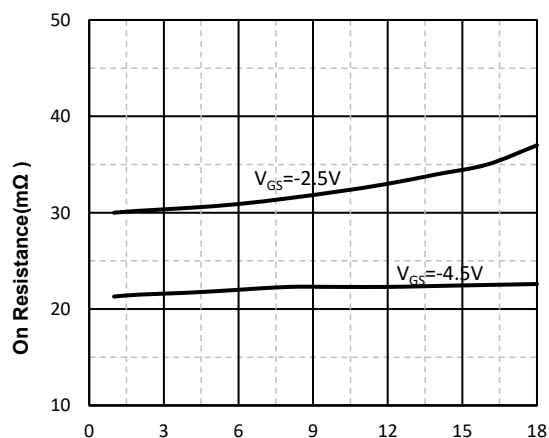
Typical Operating Characteristics



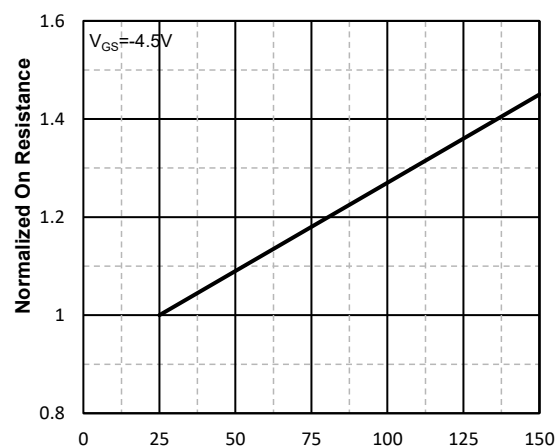
V_{DS} , Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



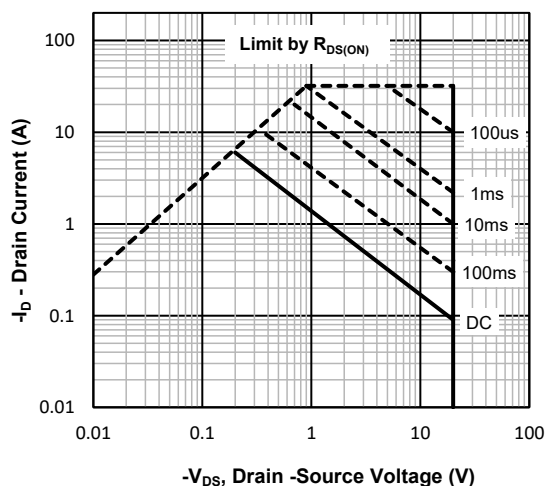
Q_g -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



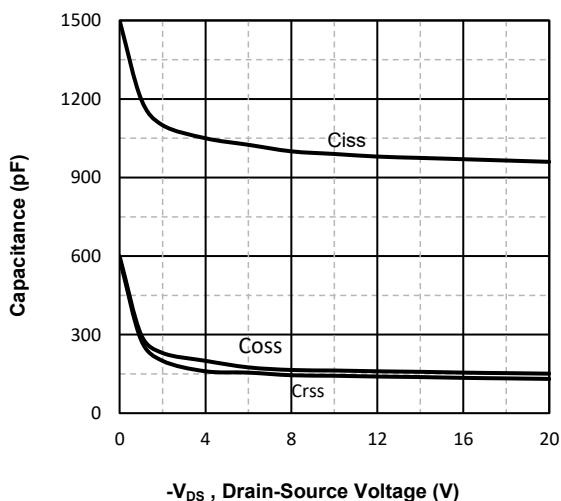
I_D , Drain-Source Current (A)
Fig3. Drain-Source on Resistance



T_j - Junction Temperature ($^{\circ}C$)
Fig4. Normalized On-Resistance Vs. Temperature

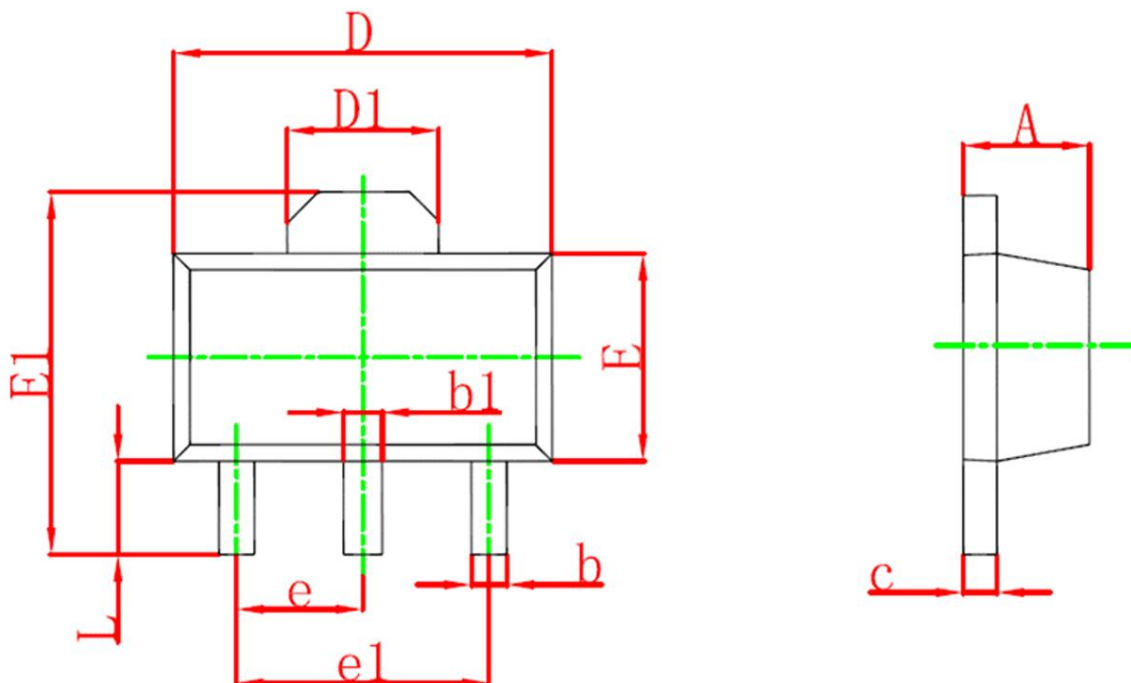


V_{DS} , Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



V_{DS} , Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs. Drain-Source Voltage

SOT-89 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