

Features

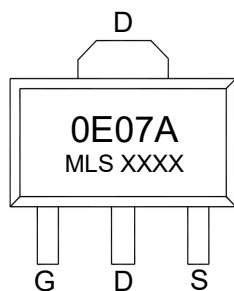
- Trench Power LV MOSFET technology
- High Power and current handing capability

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
40V	45mΩ@10V	7A
	58mΩ@4.5V	

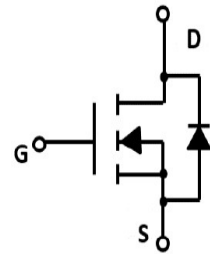
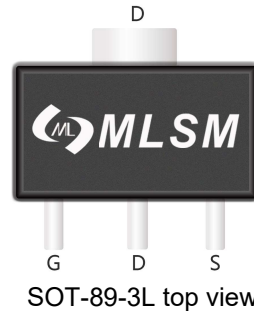
Application

- PWM application
- Load switch



0E07A: Device code
 XXXX: Code

Marking and pin assignment



Schematic diagram



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		40	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 150	°C
I _S	Diode Continuous Forward Current	Tc=25°C	7	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$	28	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$	7	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$	1.2	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		104	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MZ0E07A	SOT-89-3L	0E07A	1,000	10,000	40,000	7"reel

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV(BR)DSS	Drain-Source Breakdown Voltage	VGS=0V, ID=250μA	40	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=40V, VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	0.8	1.5	2.2	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=7A	--	30	45	mΩ
		VGS=4.5V, ID=5A	--	40	58	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=10V, VGS=0V, f=1MHz	--	490	--	pF
COSS	Output Capacitance		--	90	--	pF
CRSS	Reverse Transfer Capacitance		--	70	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=10V, ID=7A, VGS=4.5V	--	5.2	--	nC
Qgs	Gate Source Charge		--	1.0	--	nC
Qgd	Gate Drain Charge		--	1.3	--	nC
td(on)	Turn-on Delay Time	VDD=20V, RL=2Ω, VGS=10V, RG=3Ω	--	13	--	nS
tr	Turn-on Rise Time		--	54	--	nS
td(off)	Turn-Off Delay Time		--	18	--	nS
tf	Turn-Off Fall Time		--	11	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25℃, IS=7A	--	--	1.2	V

Typical Operating Characteristics

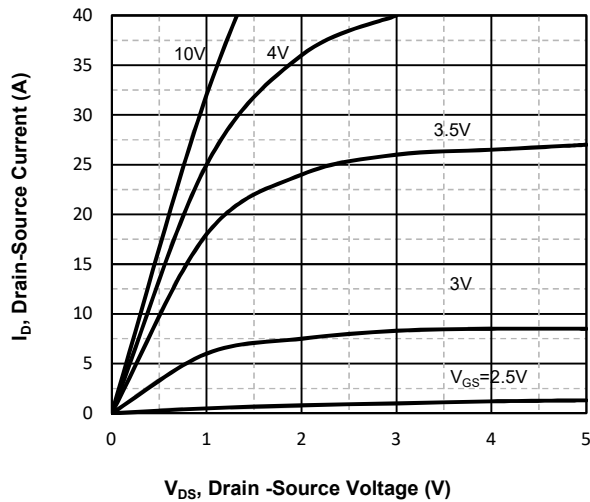


Fig1. Typical Output Characteristics

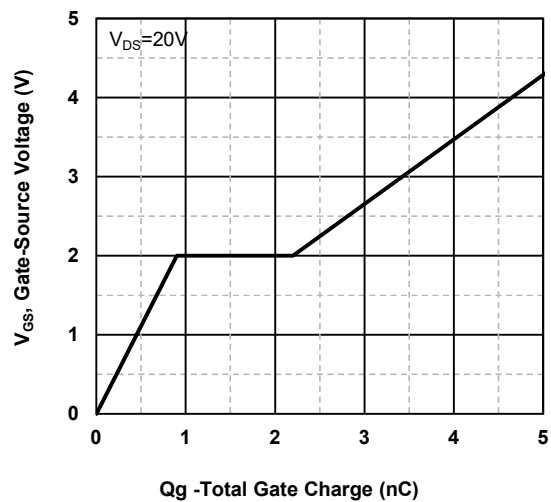


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

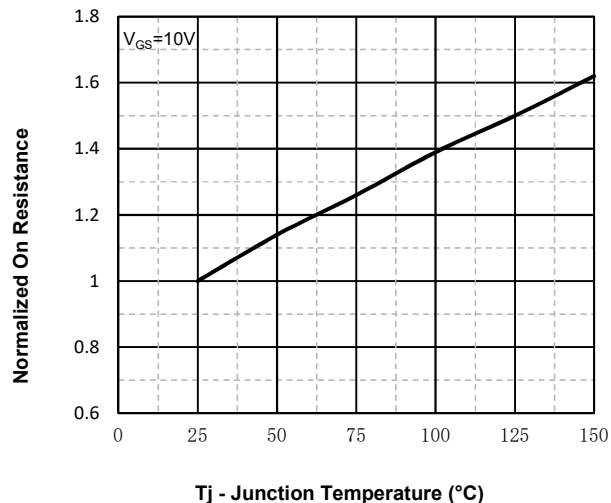


Fig3. Normalized On-Resistance Vs. Temperature

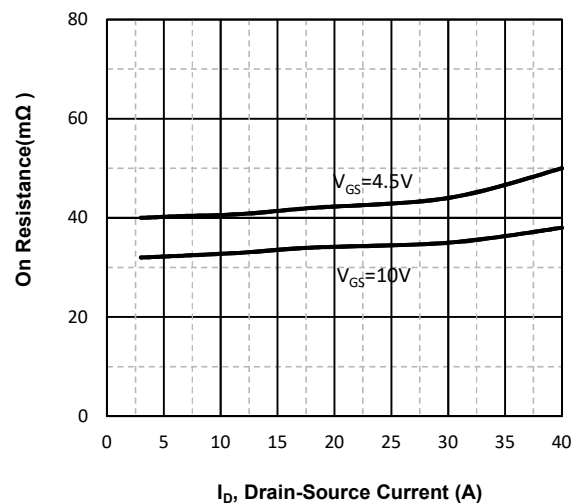


Fig4. On-Resistance Vs. Drain-Source Current

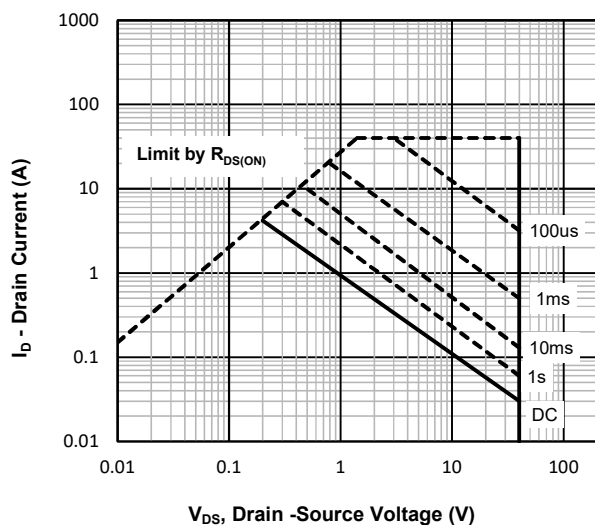


Fig5. Maximum Safe Operating Area

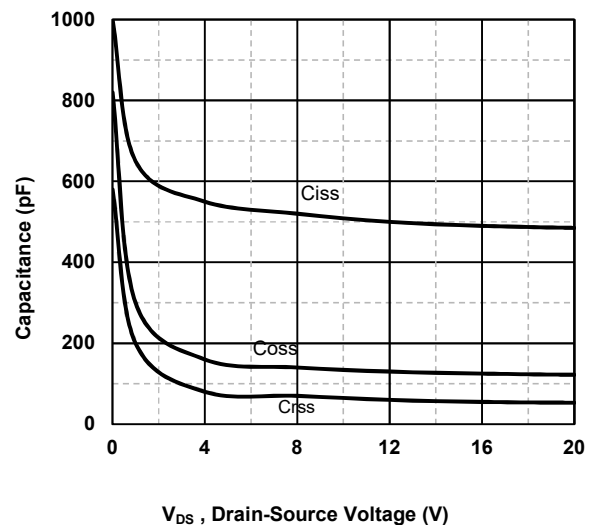
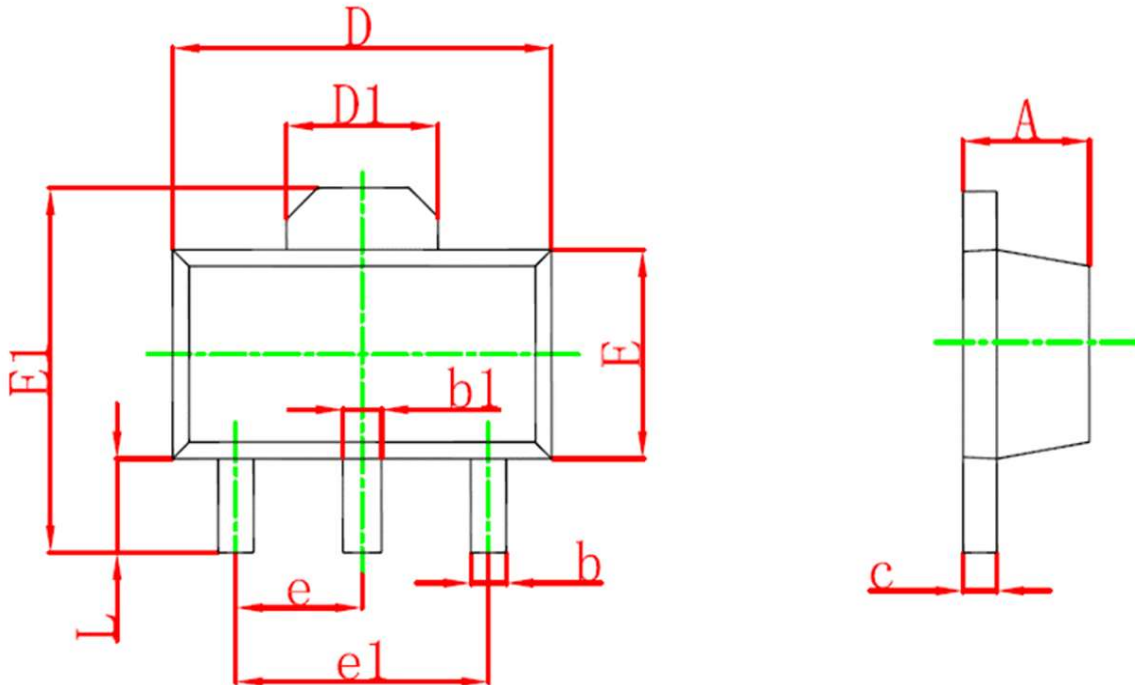


Fig6 Typical Capacitance Vs. Drain-Source Voltage

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