

Features

- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

Application

- Power switching application

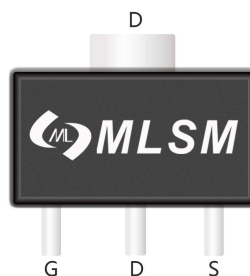
Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-40V	50mΩ@-10V	-5A
	70mΩ@-4.5V	

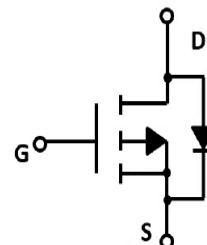


Marking and pin assignment

0E05AP: Device code
 XXXX: Code



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		-40	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	$T_c=25^\circ\text{C}$	-5	A

Mounted on Large Heat Sink

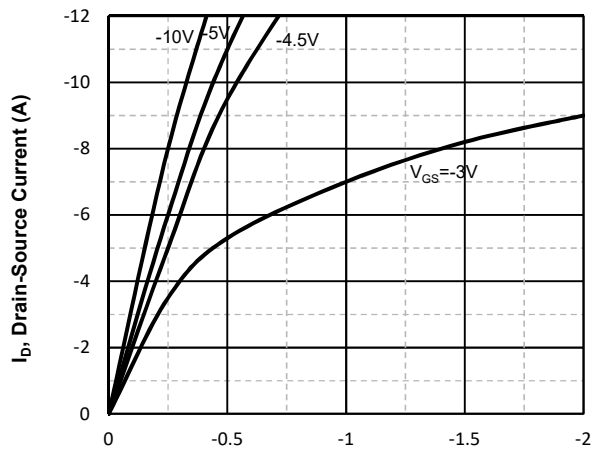
I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	-19	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	-5	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	0.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		175	°C/W

Ordering Information (Example)

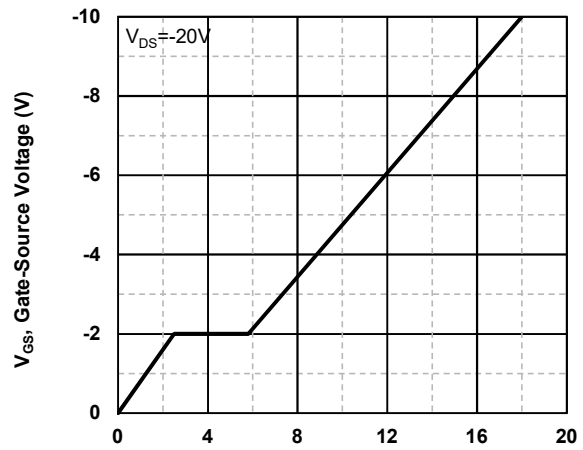
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MZ0E05AP	SOT-89-3L	0E05AP	1,000	10,000	40,000	7"reel

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	-40	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-40V, 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 =-5A	--	35	50	mΩ
		V _{GS} =-4.5V, I _D =-3A	--	50	70	mΩ
Dynamic Electrical Characteristics @ T _J = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz	--	1005	--	pF
C _{OSS}	Output Capacitance		--	110	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	80	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =-25V, I _D =-5A, V _{GS} =-10V	--	8.5	--	nC
Q _{gs}	Gate Source Charge		--	2.5	--	nC
Q _{gd}	Gate Drain Charge		--	3.1	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-25V, I _D =-5A, V _{GS} =-10V, R _G =6Ω	--	19.5	--	nS
t _r	Turn-on Rise Time		--	13	--	nS
t _{d(off)}	Turn-Off Delay Time		--	48.5	--	nS
t _f	Turn-Off Fall Time		--	4.5	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =-5A	--	--	-1.2	V

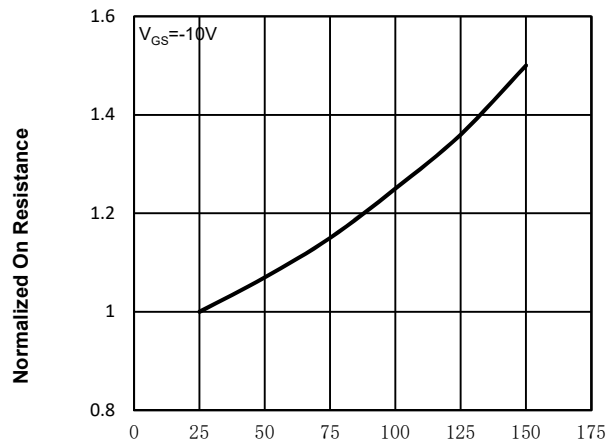
Typical Operating Characteristics



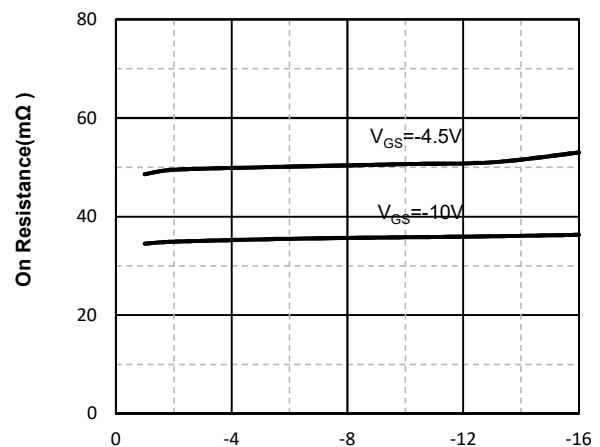
V_{DS} , Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



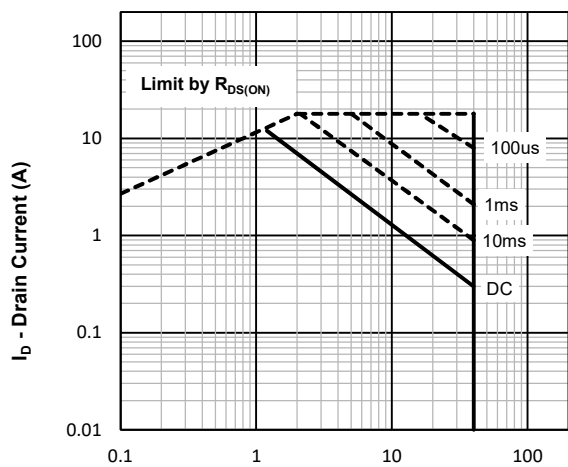
Q_g -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



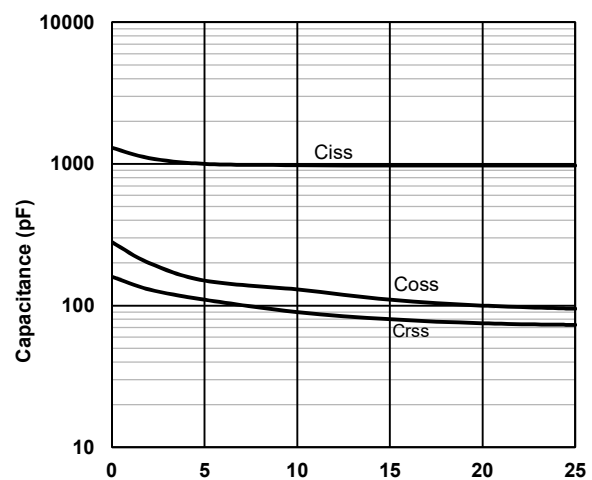
T_J - Junction Temperature ($^{\circ}C$)
Fig3. Normalized On-Resistance Vs. Temperature



I_D , Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current

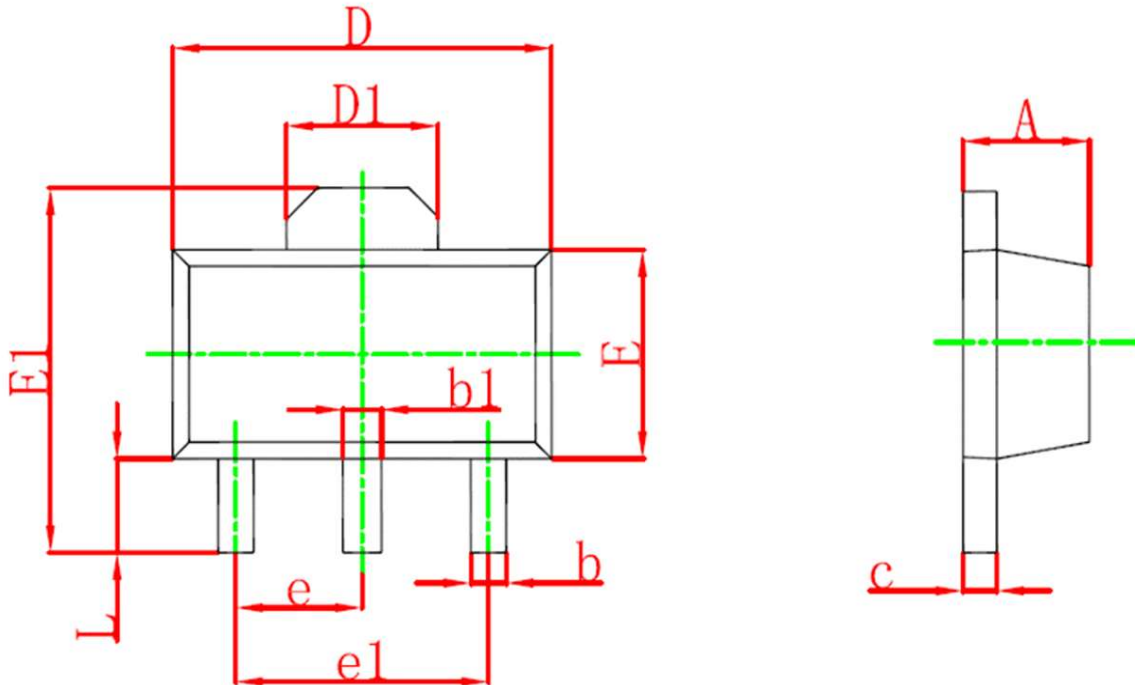


V_{DS} , Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



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

SOT-89-3L 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