

Features

- Split gate trench MOSFET technology
- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity

Application

- Power management
- Portable equipment

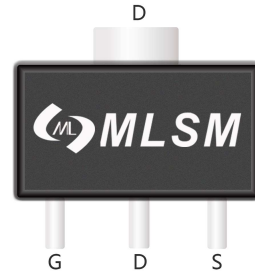


1A05AP: Device code
 XXXX : Code

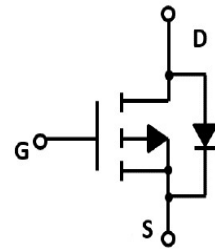
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(on)}$ MAX	I_D MAX
-100V	200mΩ@-10V	-5A
	250mΩ@-4.5V	



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		-100	V
V_{GS}	Gate-Source Voltage		±20	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 155	°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	$T_c=25^\circ\text{C}$	-33	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	-5	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	2.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		315	°C/W

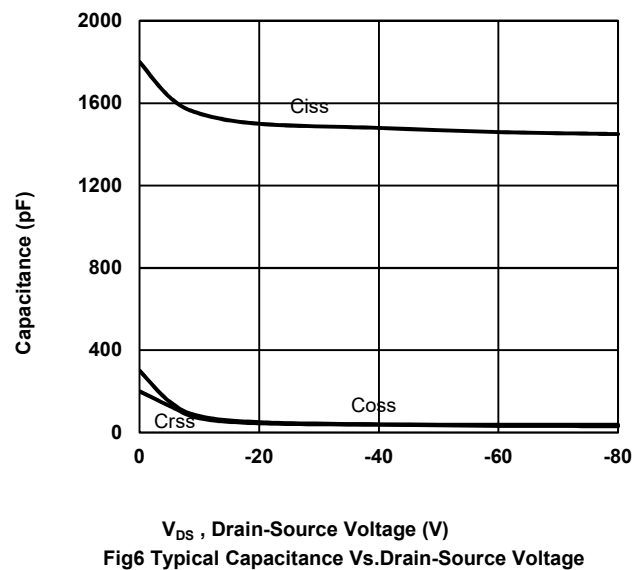
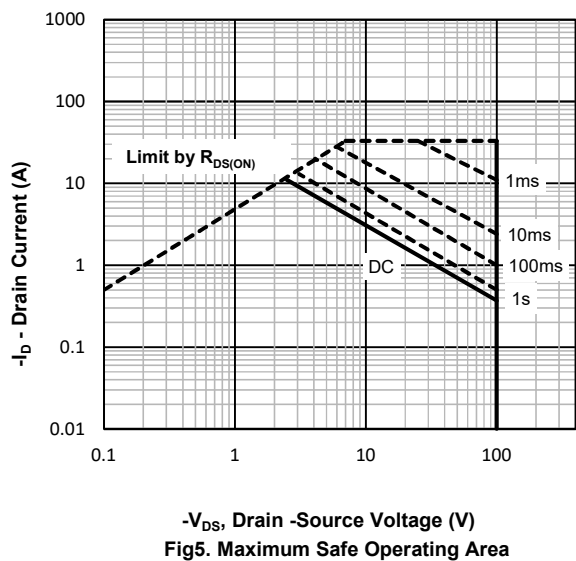
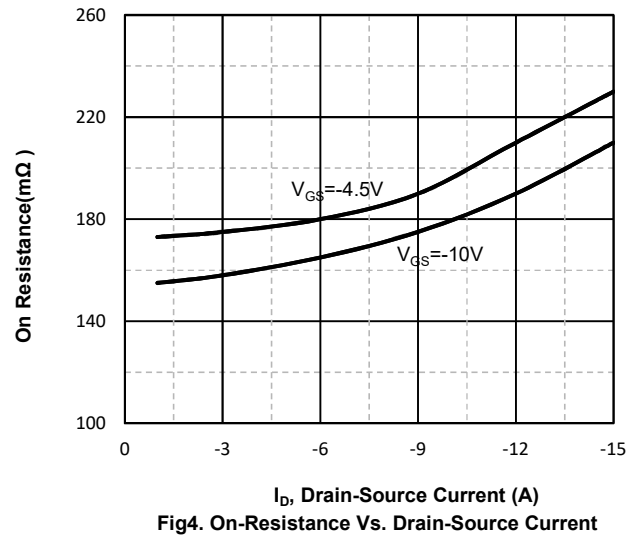
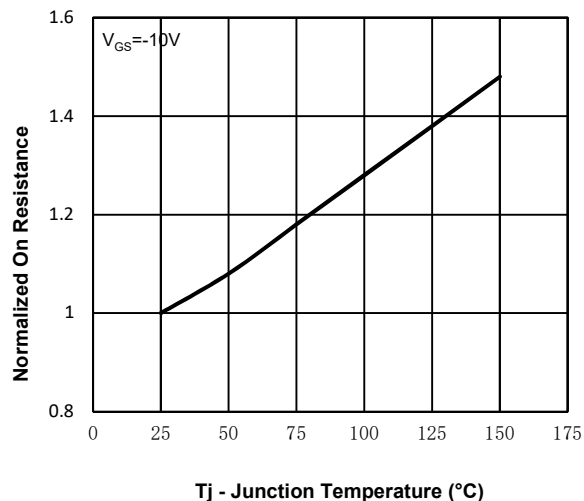
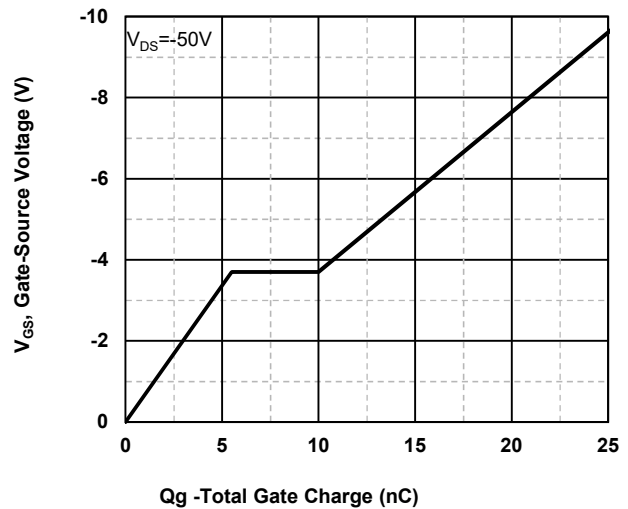
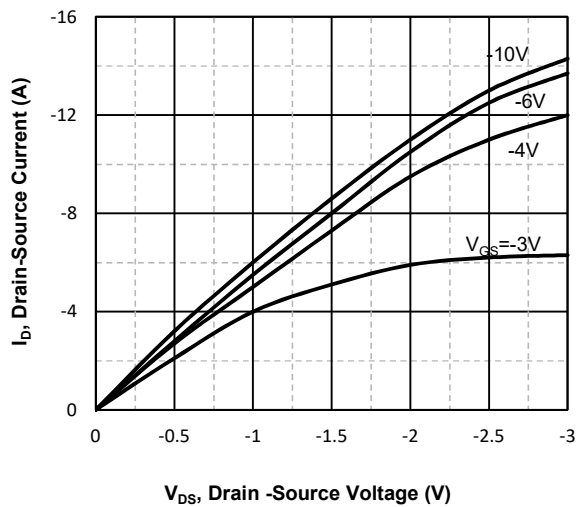
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MZ1A05AP	SOT-89-3L	1A05AP	1,000	10,000	40,000	7" reel

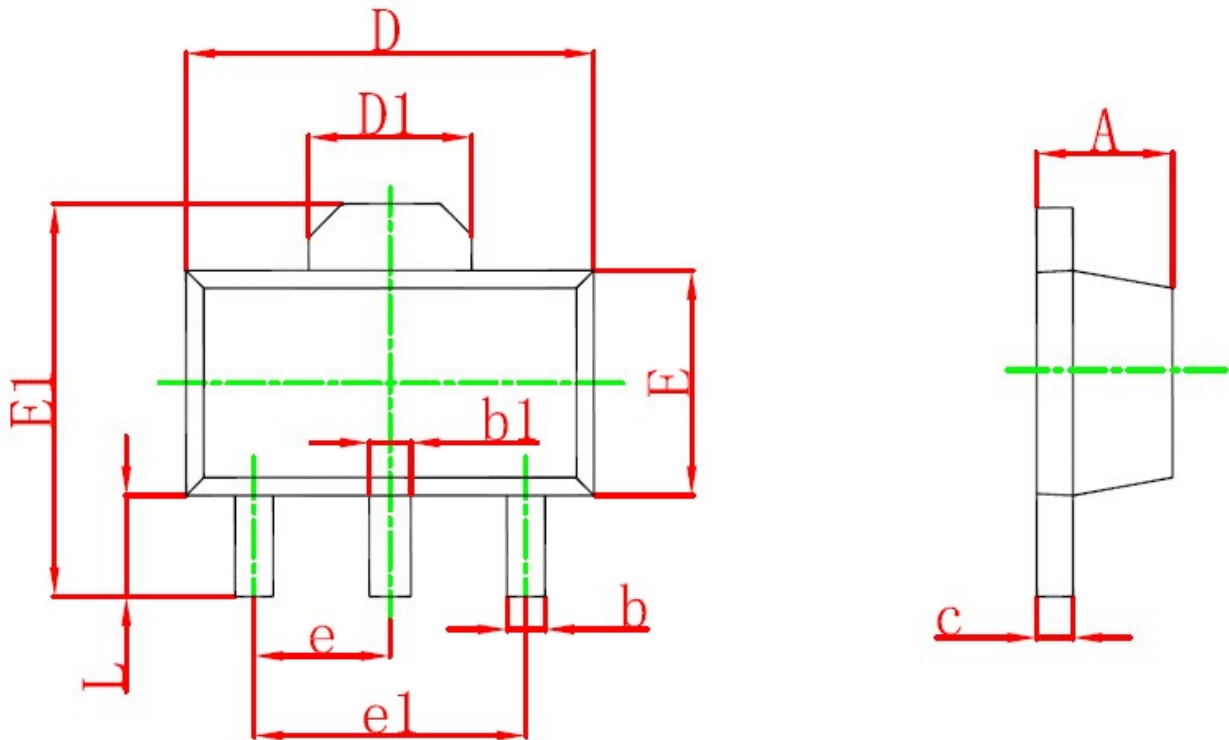
Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV(BR)DSS	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-100	–	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=-100V, VGS=0V	–	–	-1.0	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	–	–	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	-1.8	-2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-8A	–	155	200	mΩ
		VGS=-4.5V, ID=-6A	–	170	250	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=-50V, VGS=0V, f=1MHz	–	1488	--	pF
COSS	Output Capacitance		–	39	--	pF
CRSS	Reverse Transfer Capacitance		–	30	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=-50V, ID=-5A, VGS=-10V	–	26.5	--	nC
Qgs	Gate Source Charge		–	6	--	nC
Qgd	Gate Drain Charge		–	4	--	nC
tD(on)	Turn-on Delay Time	VDS=-50V, ID=-5A, VGS=-10V, RG=4.5Ω	–	14	--	nS
tR	Turn-on Rise Time		–	45	--	nS
tD(off)	Turn-Off Delay Time		–	227	--	nS
tF	Turn-Off Fall Time		–	93	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25°C, IS=-5A	–	-0.8	-1.2	V

Typical Operating Characteristics



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