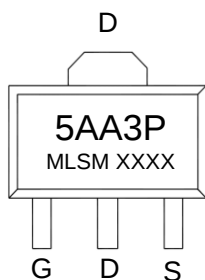


Features

- P-Channel
- High density cell design for ultra low Rdson
- Enhancement mode
- Logic Level
- dv/dt rated

Application

- PWM applications
- Power management
- Load switch

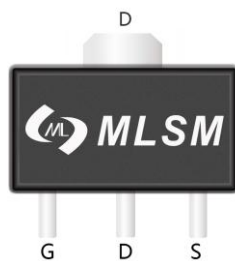


Marking and pin assignment

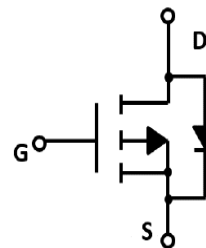
5AA3P: Device code
XXXX: Code

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
-500V	90Ω@-10V	-0.3A



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	-500	V
V_{GS}	Gate-Source Voltage	±30	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_C=25^{\circ}C$ -0.3	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$ -1	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$ -0.3	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$ 1	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	125	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MZ5AA3P	SOT-89-3L	5AA3P	1,000	10,000	40,000	7"reel

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

Symbol	Parameter	Condition	Min	Typ	Max	Unit
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Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated)

BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-500	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-500V, 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	-0.8	-1.8	-2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-0.3A	--	90	150	Ω

Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)

C _{ISS}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz	--	36.5	--	pF
C _{OSS}	Output Capacitance		--	7	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	1.55	--	pF

Switching Characteristics

Q _g	Total Gate Charge	V _{DS} =-25V, I _D =-0.3A, V _{GS} =-10V	--	2.1	--	nC
Q _{gs}	Gate Source Charge		--	0.65	--	nC
Q _{gd}	Gate Drain Charge		--	0.25	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-25V, I _D =-0.3A, V _{GS} =-10V, R _G =3.3Ω	--	5.2	--	nS
t _r	Turn-on Rise Time		--	7.5	--	nS
t _{d(off)}	Turn-Off Delay Time		--	8.4	--	nS
t _f	Turn-Off Fall Time		--	2.8	--	nS

Source- Drain Diode Characteristics

V _{SD}	Forward on voltage	T _J =25°C, I _S =-0.3A	--	--	-5	V
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Typical Operating Characteristics

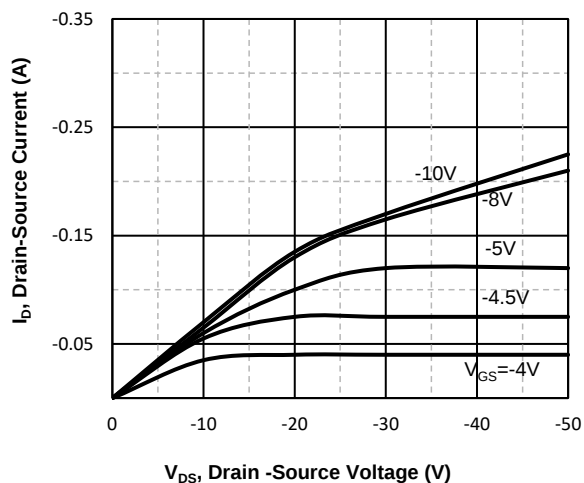


Fig1. Typical Output Characteristics

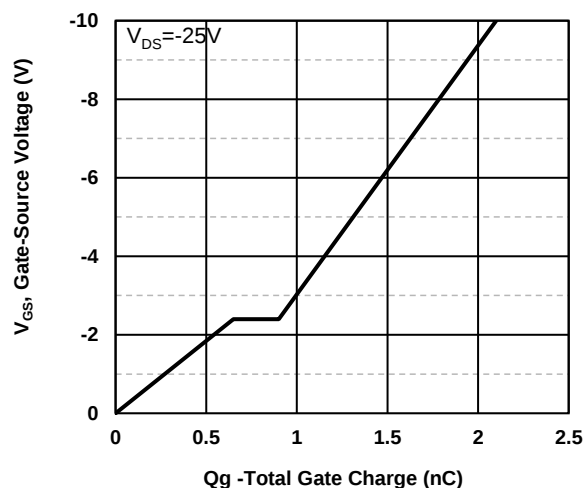


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

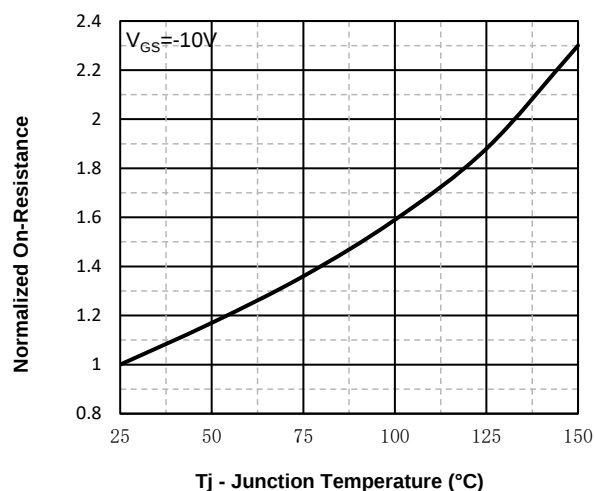


Fig3. Normalized On-Resistance Vs. Temperature

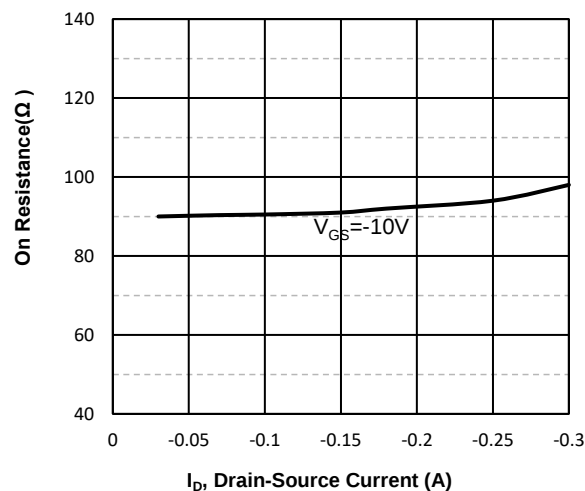


Fig4. On Resistance Vs. Drain-Source Current

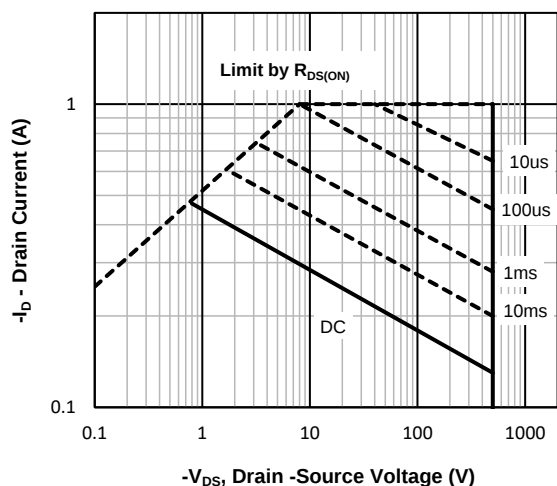


Fig5. Maximum Safe Operating Area

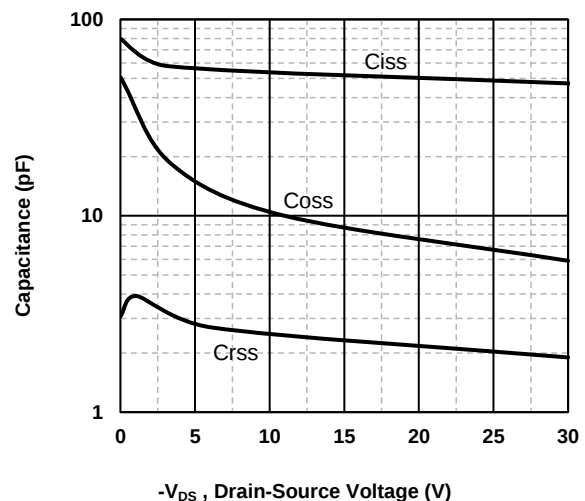
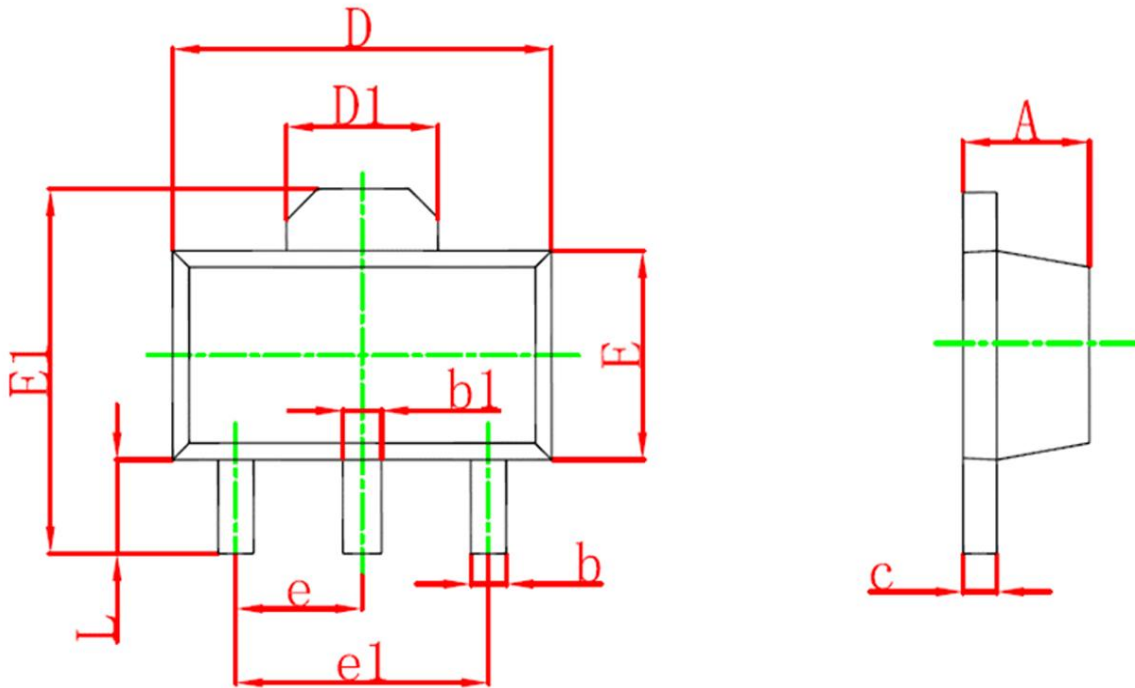


Fig6. Typical Capacitance Vs. Drain-Source Voltage

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