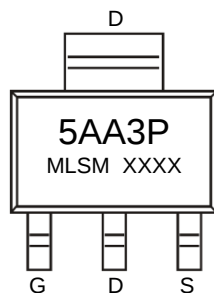


Features

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

Application

- PWM applications
- Power management
- Load switch

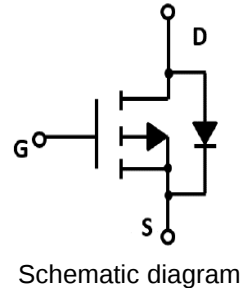
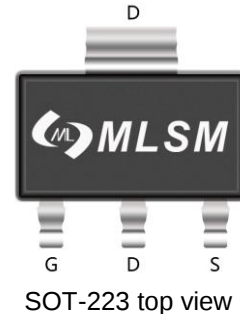


5AA3P: Device code
 XXXX: Code

Marking and pin assignment

Product Summary

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



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		-500	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	Tc=25°C	-0.3	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-1	A
I _D	Continuous Drain Current	Tc=25°C	-0.3	A
P _D	Maximum Power Dissipation	Tc=25°C	1	W
R _{θJA}	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
MT5AA3P	SOT-223	5AA3P	2,500	5,000	35,000	13"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	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	--	-2.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-0.3A	--	90	150	Ω
Dynamic Electrical Characteristics @ TJ = 25℃ (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	TJ=25℃, I _S =-0.3A	--	--	-5	V

Typical Operating Characteristics

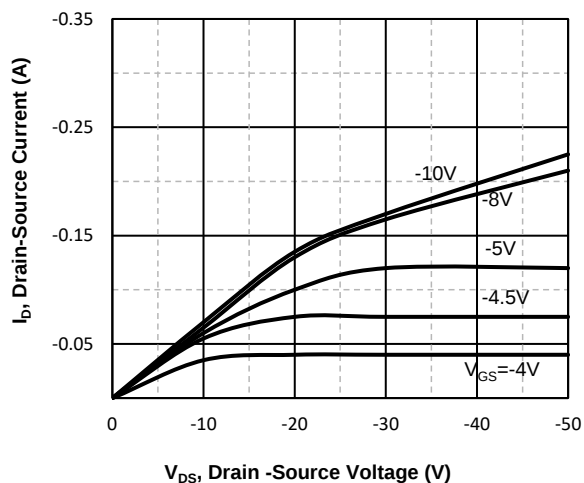


Fig1. Typical Output Characteristics

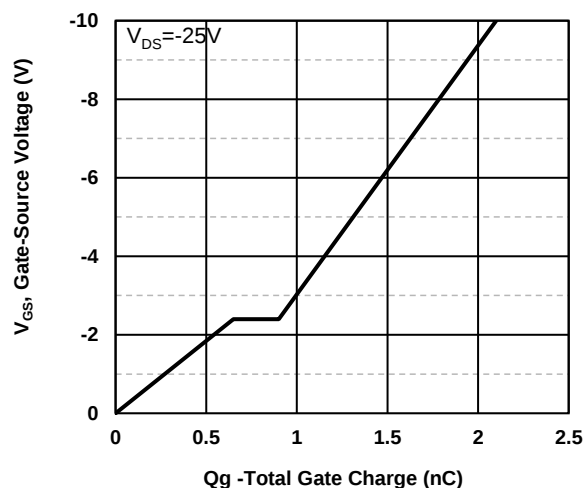


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

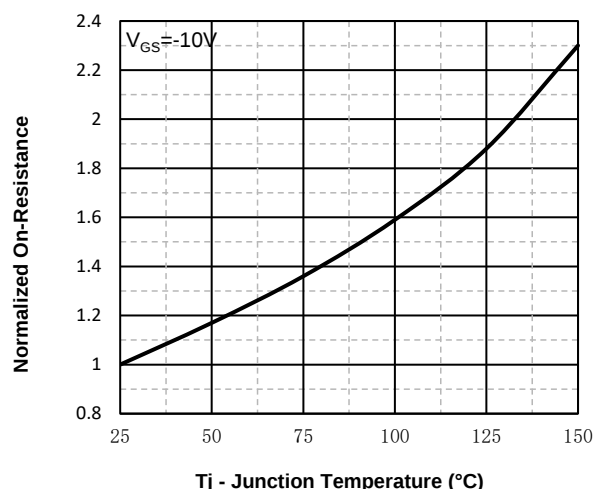


Fig3. Normalized On-Resistance Vs. Temperature

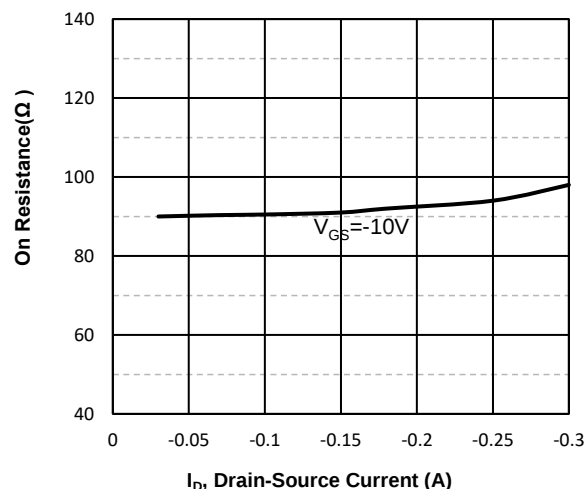


Fig4. On Resistance Vs. Drain-Source Current

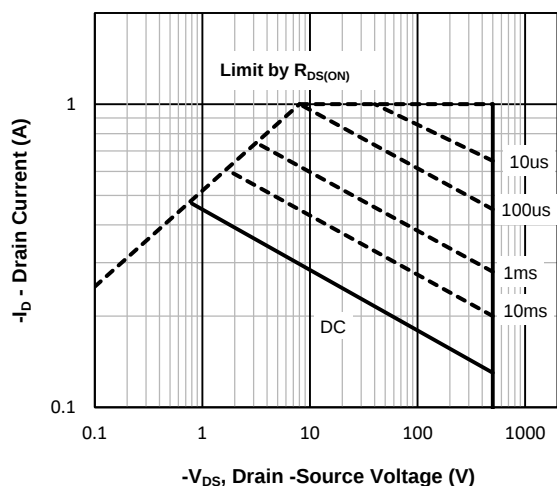


Fig5. Maximum Safe Operating Area

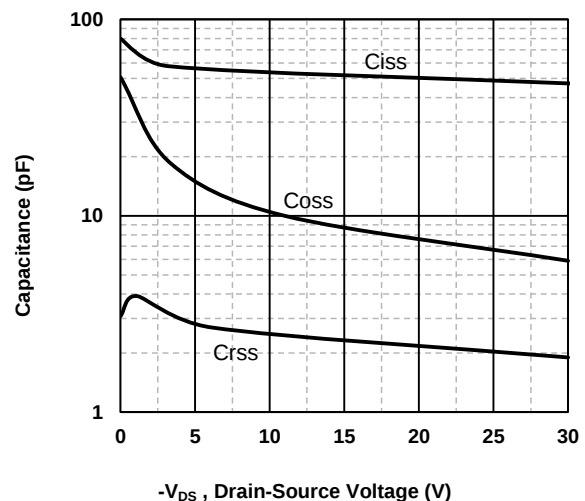
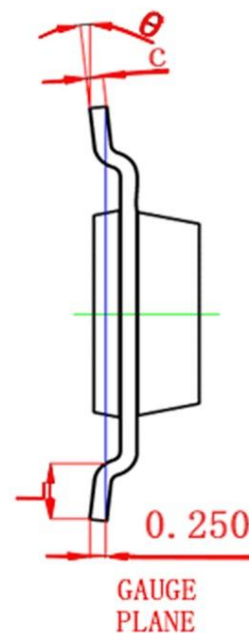
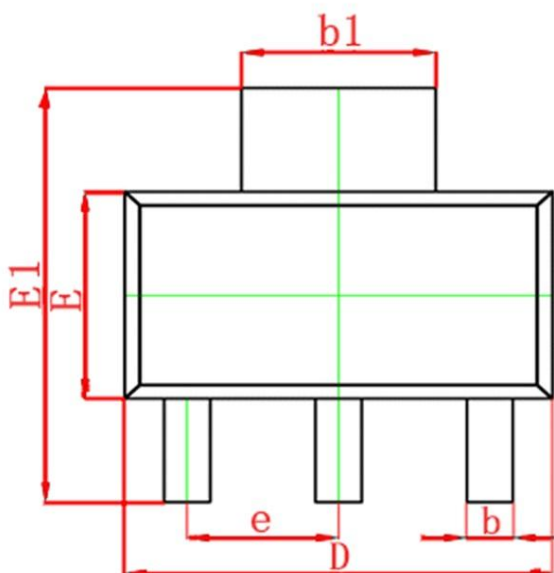


Fig6. Typical Capacitance Vs. Drain-Source Voltage

SOT-223 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	--	1.800	--	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	3.300	3.700	0.130	0.146
E1	6.700	7.300	0.264	0.287
e	2.300(BSC)		0.091(BSC)	
L	0.750	--	0.030	--
θ	0°	10°	0°	10°