

Features

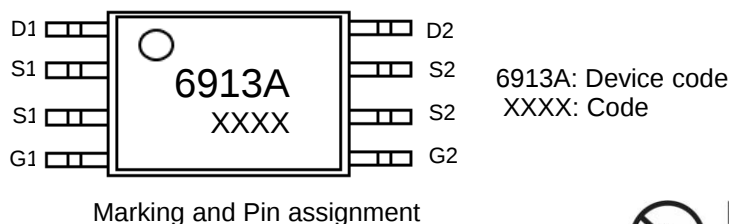
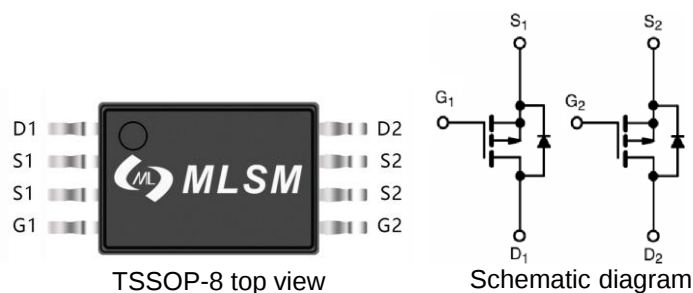
- High power and current handling capability
- Lead free product is acquired
- Surface mount package

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
-12V	16mΩ@-4.5V	-5.8A
	21mΩ@-2.5V	

Application

- Power management
- Portable equipment



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		-12	V
V _{GS}	Gate-Source Voltage		±8	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	-5.8	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-25	A
I _D	Continuous Drain Current	Tc=25°C	-5.8	A
P _D	Maximum Power Dissipation	Tc=25°C	1.3	W
R _{θJA}	Thermal Resistance Junction-Ambient		358	°C/W

Ordering Information (Example)						
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MS6913A	TSSOP-8	6913A	3,000	6,000	42,000	13"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	V _{GS} =0V, I _D =-250μA	-12	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-12V, V _{GS} =0V	--	--	-1.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±8V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-0.4	-0.62	-1.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-4.5V, I _D =-5.8A	--	16	21	mΩ
		V _{GS} =-2.5V, I _D =-5.0A	--	21	28	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-10V, V _{GS} =0V, f=1MHz	--	2995	--	pF
C _{OSS}	Output Capacitance		--	330	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	270	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =-10V, I _D =-5.8A, V _{GS} =-9V	--	73	--	nC
Q _{gs}	Gate Source Charge		--	6.5	--	nC
Q _{gd}	Gate Drain Charge		--	10	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-10V, I _D =-5.8A, V _{GS} =-10V, R _G =3Ω	--	7	--	nS
t _r	Turn-on Rise Time		--	33	--	nS
t _{d(off)}	Turn-Off Delay Time		--	130	--	nS
t _f	Turn-Off Fall Time		--	135	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=-5.8A	--	-0.8	-1.2	V

Typical Operating Characteristics

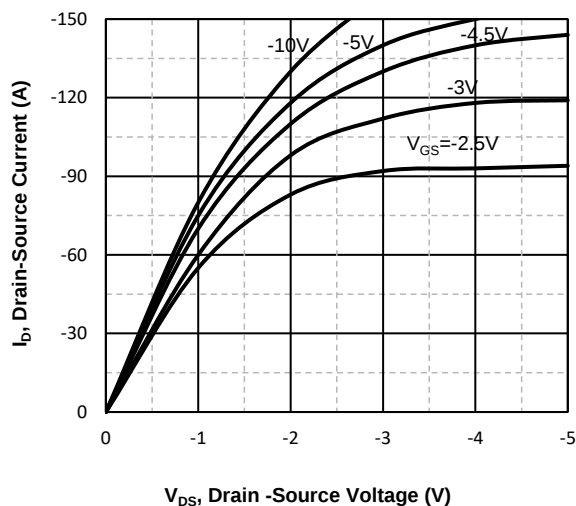


Fig1. Typical Output Characteristics

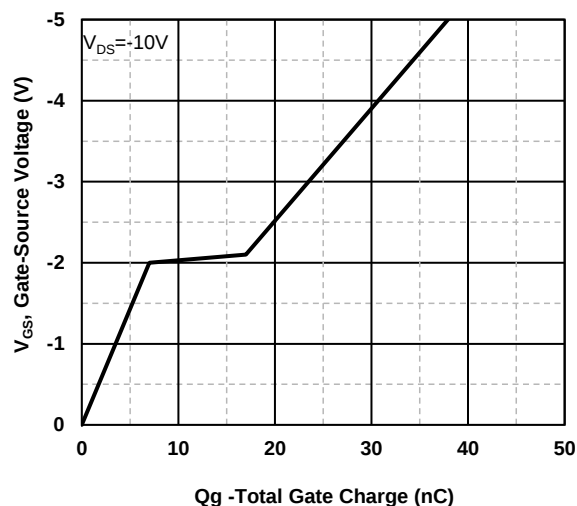


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

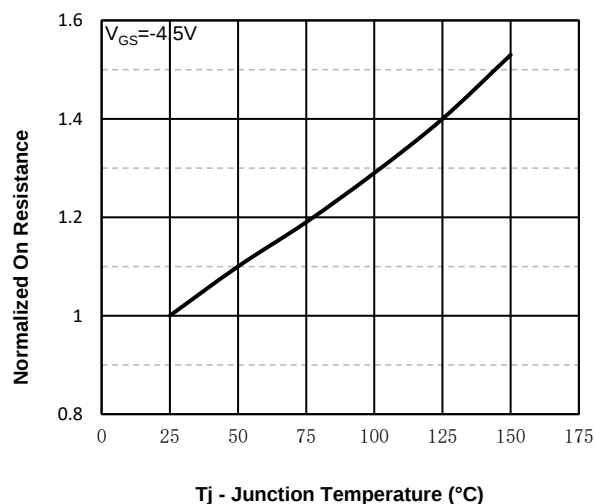


Fig3. Normalized On-Resistance Vs. Temperature

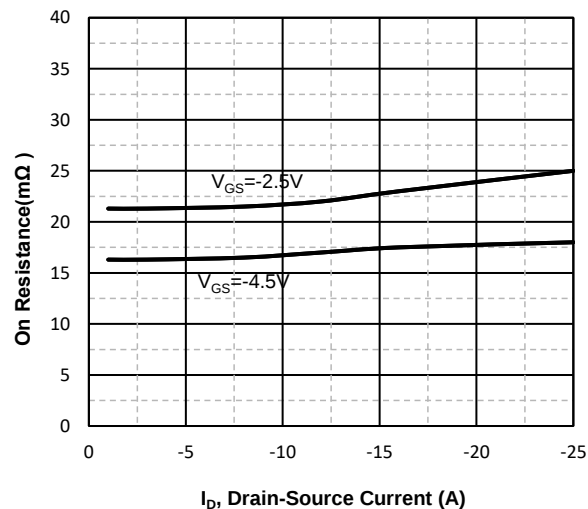


Fig4. On-Resistance Vs. Drain-Source Current

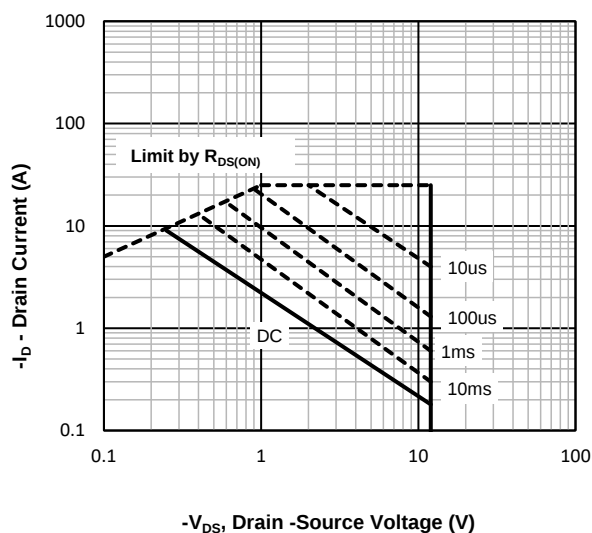


Fig5. Maximum Safe Operating Area

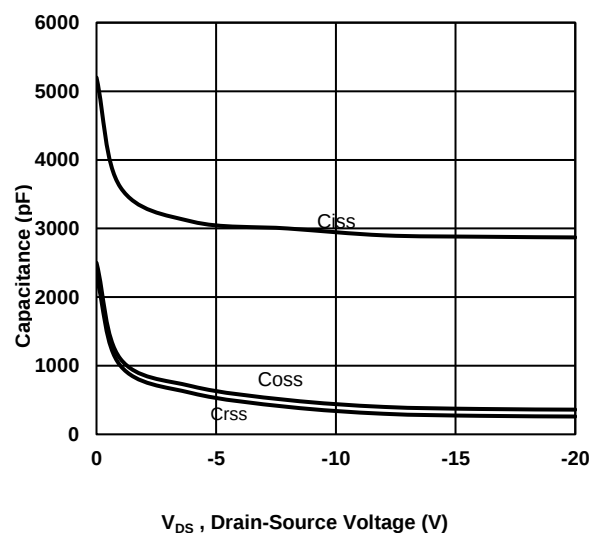
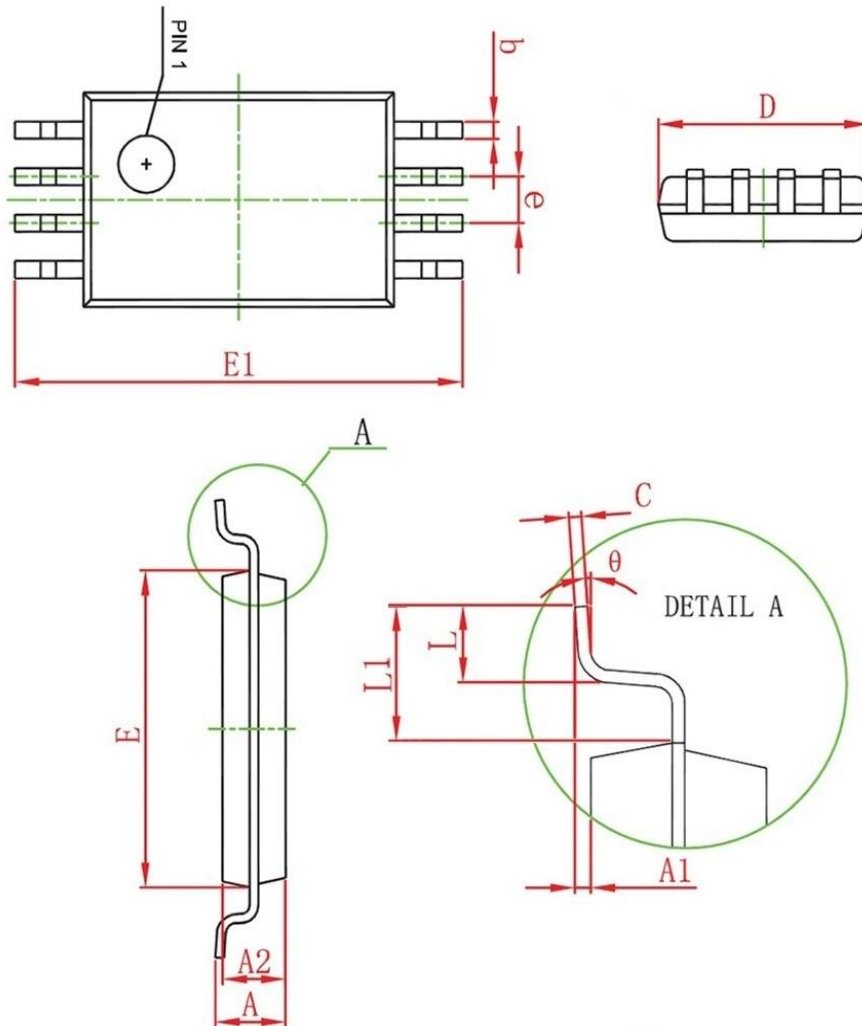


Fig6 Typical Capacitance Vs. Drain-Source Voltage

TSSOP-8 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions in Inches	
	Min	Max	Min	Max
A	1.000	1.200	0.039	0.047
A1	0.020	0.180	0.000	0.007
A2	0.900	1.100	0.035	0.043
b	0.170	0.270	0.006	0.010
c	0.122	0.132	0.004	0.005
D	2.870	3.070	0.112	0.120
e	0.65BSC		0.025BSC	
E	4.300	4.500	0.169	0.177
E1	6.200	6.600	0.244	0.259
L	0.400	0.800	0.015	0.031
L1	1.00BSC		0.039BSC	
Ø1	0.500	0.700	0.001	0.027
θ	0°	10°	0°	10°