MLSS8801A

-20V/-4.5A Dual P-Channel MOSFET

Features

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

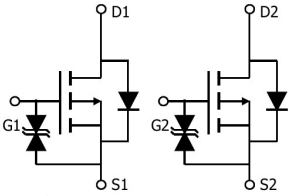
Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-20V	42mΩ@-4.5V	-4.5A
	54mΩ@-2.5V	

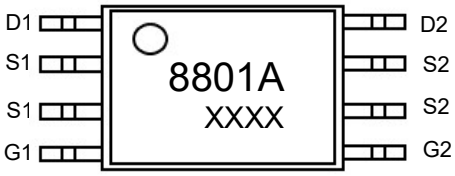
Application

- Battery protection
- Load switch
- Power management

TSSOP-8 top view



Schematic diagram



Marking and Pin assignment

8801A: Device code
XXXX: Code

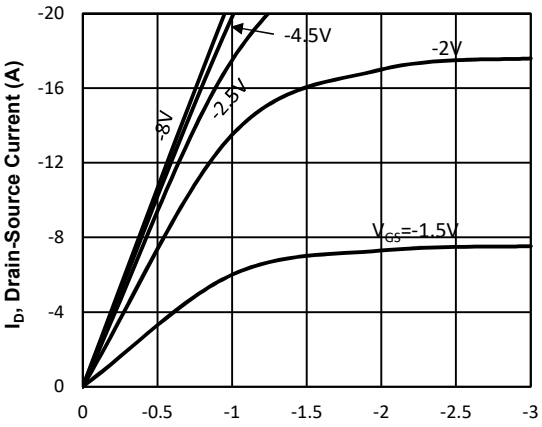
Pb-Free RoHS Halogen-Free

Absolute Maximum Ratings (TA=25℃unless otherwise noted)				
Symbol	**Parameter**		**Rating**	**Unit**
Common Ratings (TC=25°C Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		-20	V
V_{GS}	Gate-Source Voltage		±8	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	-4.5	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	-4.5	A
P_D	Maximum Power Dissipation	Tc=25°C	1.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		130	°C/W

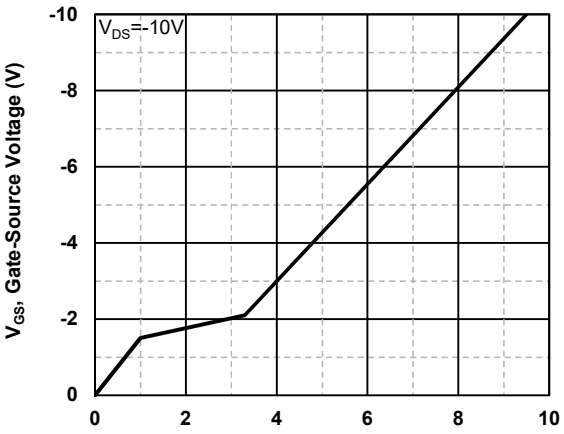
Ordering Information (Example)						
Type	**Package**	**Marking**	**Minimum Package(pcs)**	**Inner Box Quantity(pcs)**	**Outer Carton Quantity(pcs)**	**Delivery Mode**
MLSS8801A	TSSOP-8	8801A	3,000	6,000	42,000	13"reel

Electrical Characteristics (TJ=25℃ 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	-20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-20V，V_{GS}=0V	--	--	-1	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±12V，V_{DS}=0V	--	--	±10	μA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}，I_D=-250μA	-0.3	-0.7	-0.9	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=-4.5V，I_D=-4A	--	35	42	mΩ
		V_{GS}=-2.5V，I_D=-3A	--	43	54	mΩ
		V_{GS}=-1.8V，I_D=-1A	--	80	120	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	V_{DS}=-10V，V_{GS}=0V， f=1MHz	--	750	--	pF
C_{OSS}	Output Capacitance		--	115	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	77	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DS}=-10V，I_D=-4.5A，V_{GS}=-4.5V	--	9.5	--	nC
Q_{gs}	Gate Source Charge		--	1.1	--	nC
Q_{gd}	Gate Drain Charge		--	2	--	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=-10V，R_L=2.5Ω，V_{GS}=-4.5V，R_G=2.8Ω	--	12.8	--	nS
t_r	Turn-on Rise Time		--	8.9	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	18.8	--	nS
t_f	Turn-Off Fall Time		--	30	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃，Is=-4.5A	--	--	-1.2	V

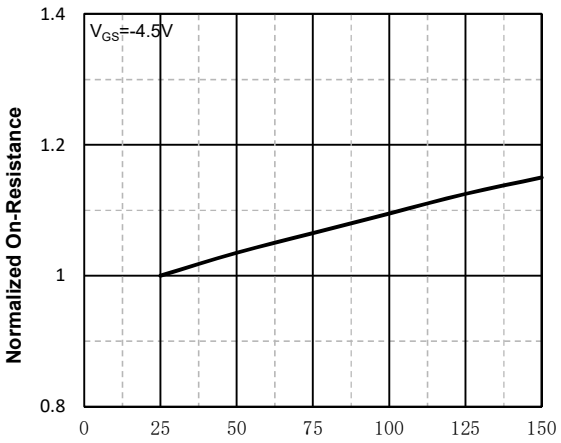
Typical Operating Characteristics



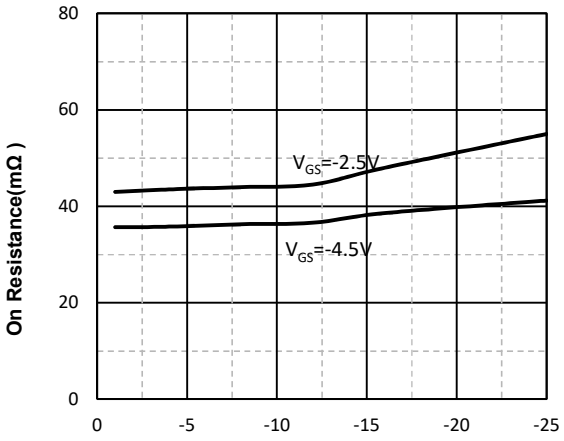
V_{DS}, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



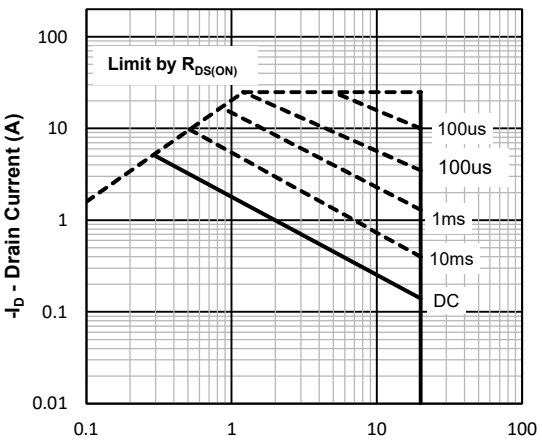
Qg -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs.Gate-Source Voltage



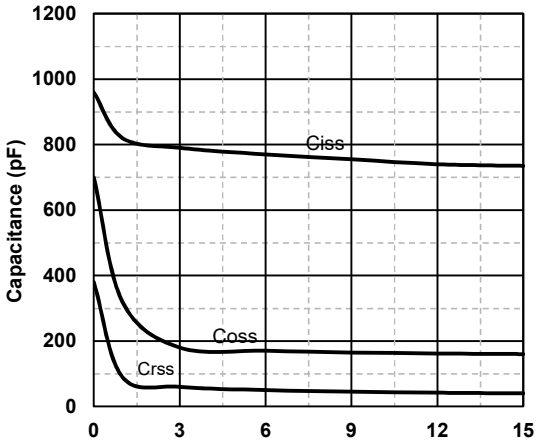
Tj - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



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

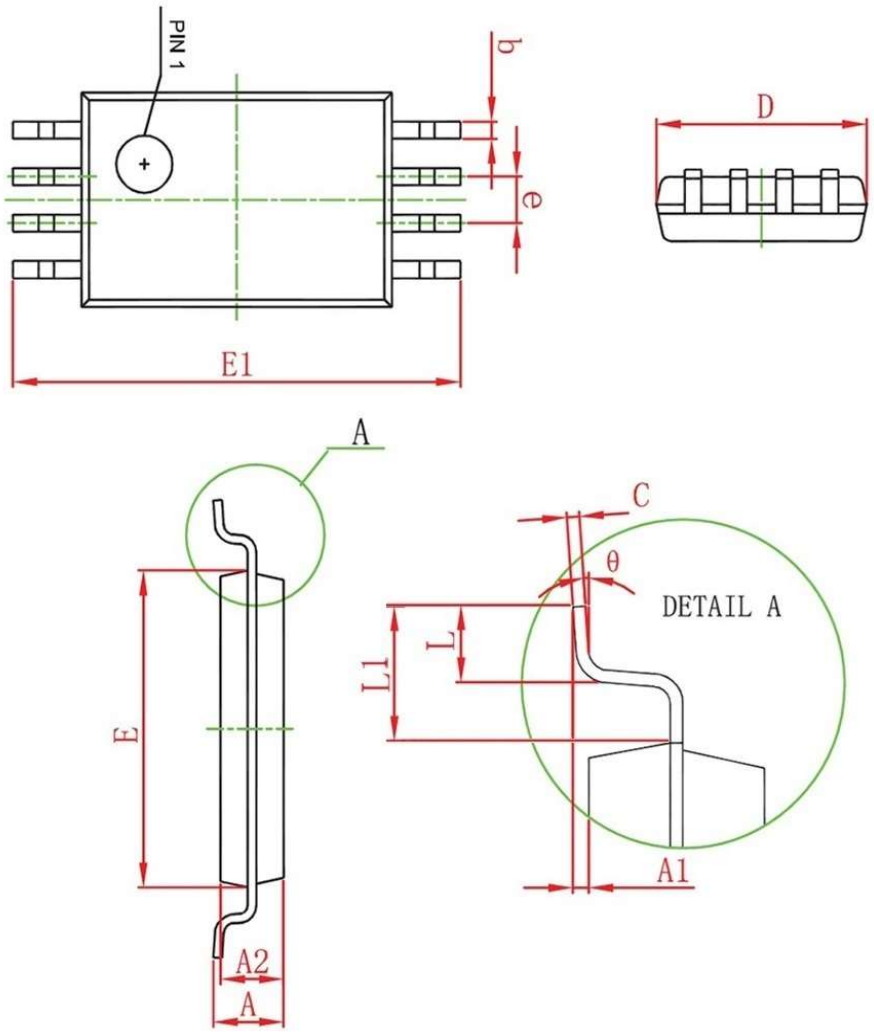


$-V_{DS}$, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



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

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°