MLSMAD08

30V/8A Dual N-Channel MOSFET

Features

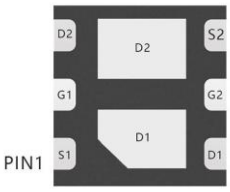
- Trench Power LV MOSFET technology
- High density cell design for low $R_{DS(ON)}$
- High Speed switching

Product Summary

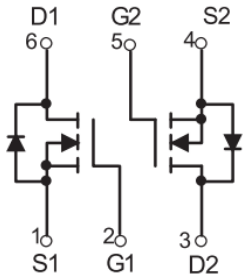
V_{DS}	$R_{DS(ON)}$ TYP	I_D
30V	17mΩ@10V	8A
	22mΩ@4.5V	

Application

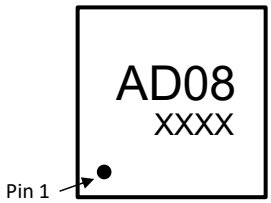
- Battery protection
- Load switch
- Power management



DFN2X2-6L view



Schematic diagram



Marking and pin assignment

AD08: Device code
XXXX: Code
Solid dot: Pin1 indicator

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		30	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	Tc=25°C	8	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	Tc=25°C	26	A
I_D	Continuous Drain Current	Tc=25°C	8	A
P_D	Maximum Power Dissipation	Tc=25°C	1.4	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		104	°C/W

Ordering Information (Example)						
Type	**Package**	**Marking**	**Minimum Package(pcs)**	**Inner Box Quantity(pcs)**	**Outer Carton Quantity(pcs)**	**Delivery Mode**
MLSMAD08	DFN2X2-6L	AD08	3,000	45,000	180,000	7"reel

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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	30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V，V_{GS}=0V	--	--	1.0	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	1.0	--	2.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=10V， I_D=6.0A	--	17	25	mΩ
		V_{GS}=4.5V，I_D=4.0A	--	22	33	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	V_{DS}=15V，V_{GS}=0V， f=1MHz	--	632	--	pF
C_{OSS}	Output Capacitance		--	58	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	70	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DS}=15V，I_D=8A，V_{GS}=10V	--	17.3	--	nC
Q_{gs}	Gate Source Charge		--	2.2	--	nC
Q_{gd}	Gate Drain Charge		--	2.1	--	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=15V，I_D=8A，V_{GS}=10V，R_G=3Ω	--	4.4	--	nS
t_r	Turn-on Rise Time		--	28.3	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	16.5	--	nS
t_f	Turn-Off Fall Time		--	26.3	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25°C，Is=8A	--	--	1.2	V

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Typical Operating Characteristics

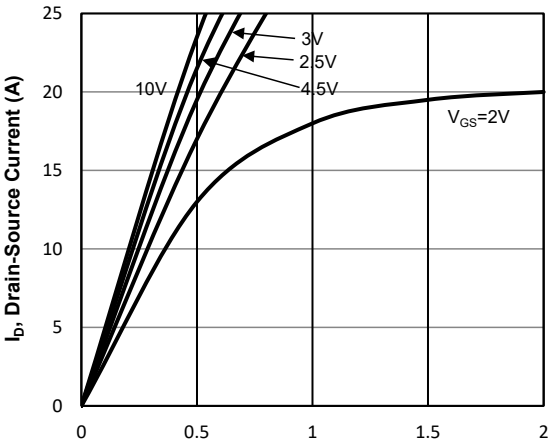

Fig1. Typical Output Characteristics

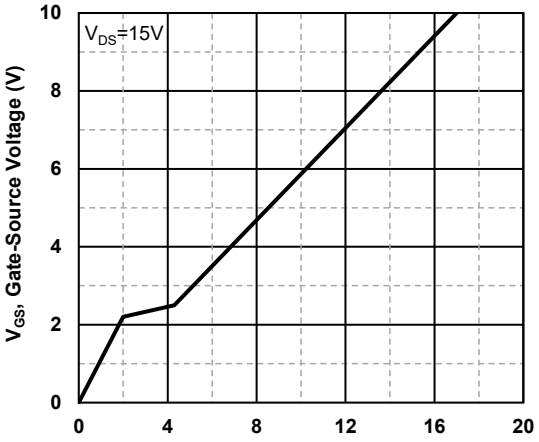

Fig2. Typical Gate Charge Vs.Gate-Source Voltage

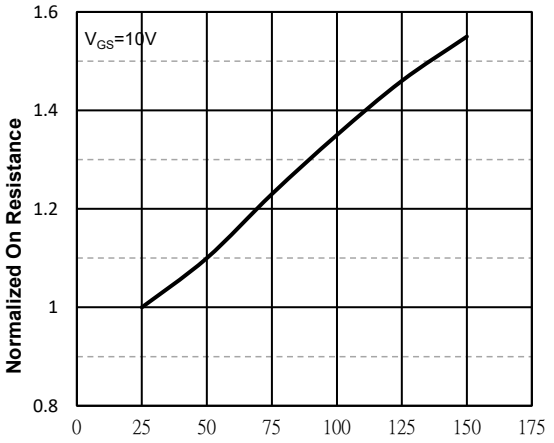

Fig3. Normalized On-Resistance Vs. Temperature

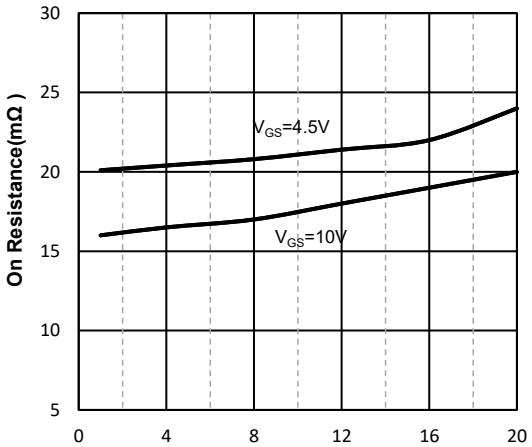

Fig4. On-Resistance Vs. Drain-Source

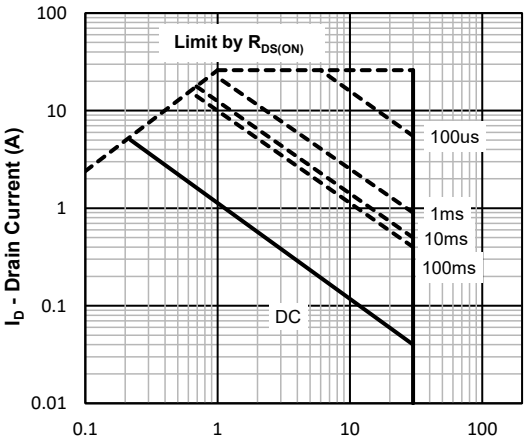

Fig5. Maximum Safe Operating Area

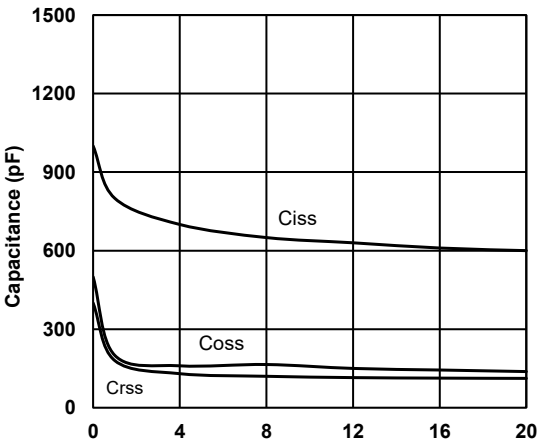

Fig6 Typical Capacitance Vs.Drain-Source Voltage

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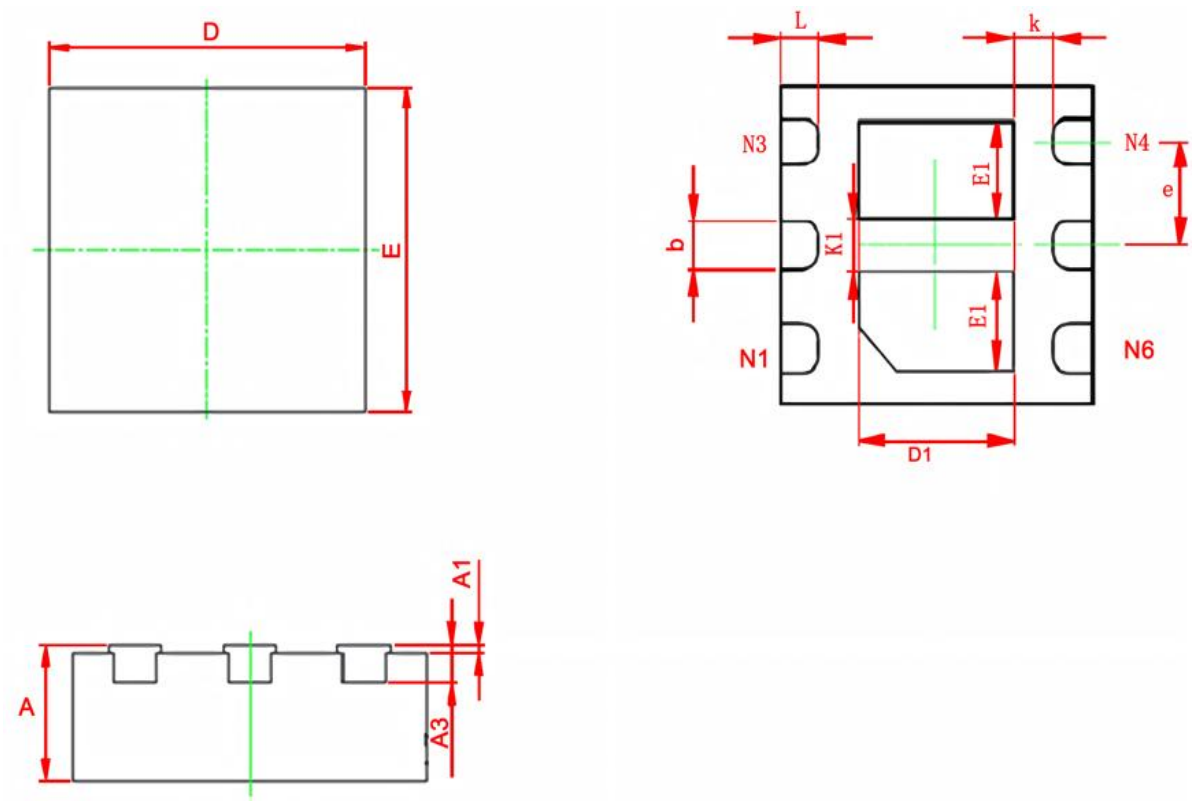
DFN2X2-6L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.600	0.700	0.024	0.027
A1	0.000	0.050	0.000	0.001
A3	0.203REF		0.007REF	
b	0.230	0.330	0.009	0.012
D	1.924	2.076	0.075	0.081
E	1.924	2.076	0.075	0.081
e	0.650TYP		0.025TYP	
L	0.224	0.376	0.008	0.014
k	0.200	-	0.007	-
E1	0.520	0.720	0.020	0.028
D1	0.800	1.000	0.031	0.039
K1	0.320TYP		0.012TYP	

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