

Features

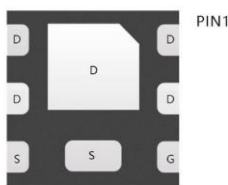
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

Product Summary

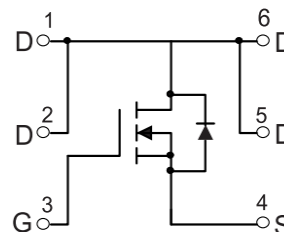
V_{DS}	$R_{DS(ON)}$ TYP	I_D
30V	18mΩ@10V	8A
	23mΩ@4.5V	

Application

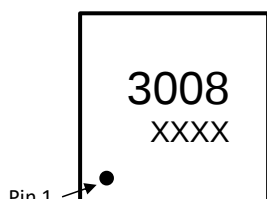
- Power switching application



DFN2X2-6L view



Schematic diagram



Pin 1

3008 : Device code
 XXXX: Code
 Solid dot: Pin1 indicator

Marking and pin assignment



Pb-Free



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		30	V
V _{GS}	Gate-Source Voltage		±12	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	32	A
I _D	Continuous Drain Current	Tc=25°C	8	A
P _D	Maximum Power Dissipation	Tc=25°C	1.1	W
R _{θJA}	Thermal Resistance Junction-Ambient		135	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSM3008	DFN2X2-6L	3008	3,000	45,000	180,000	7"reel

Electrical Characteristics (TJ=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	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} =±12V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.6	--	1.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =8A	--	18	25	mΩ
		V _{GS} =4.5V, I _D =4A	--	23	30	mΩ
		V _{GS} =2.5V, I _D =2A	--	30	50	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	--	1055	--	pF
COSS	Output Capacitance		--	180	--	pF
CRSS	Reverse Transfer Capacitance		--	130	--	pF
Switching Characteristics						
Qg	Total Gate Charge	V _{DS} =15V, I _D =6A, V _{GS} =10V	--	25	--	nC
Qgs	Gate Source Charge		--	3.5	--	nC
Qgd	Gate Drain Charge		--	6	--	nC
td(on)	Turn-on Delay Time	V _{DS} =15V, R _L =1.8Ω, V _{GS} =10V, R _G =3Ω	--	5	--	nS
tr	Turn-on Rise Time		--	12	--	nS
td(off)	Turn-Off Delay Time		--	19	--	nS
tf	Turn-Off Fall Time		--	6	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=8A	--	--	1.2	V

Typical Operating Characteristics

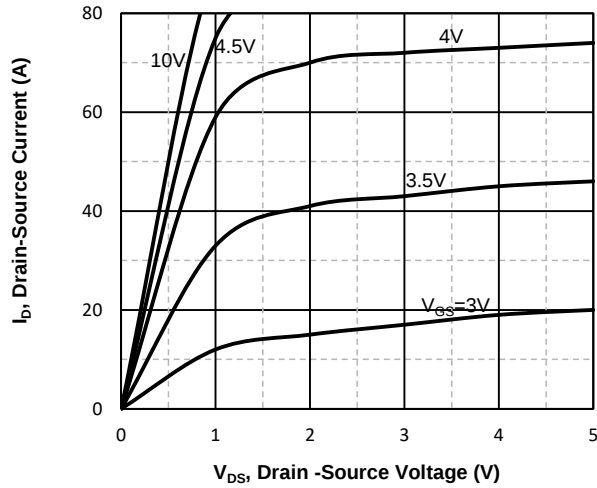


Fig1. Typical Output Characteristics

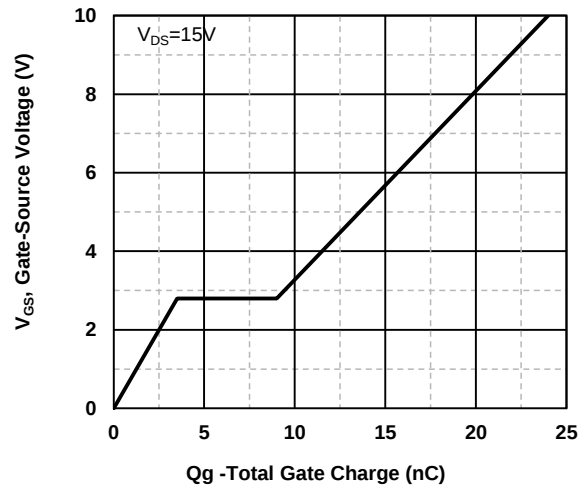


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

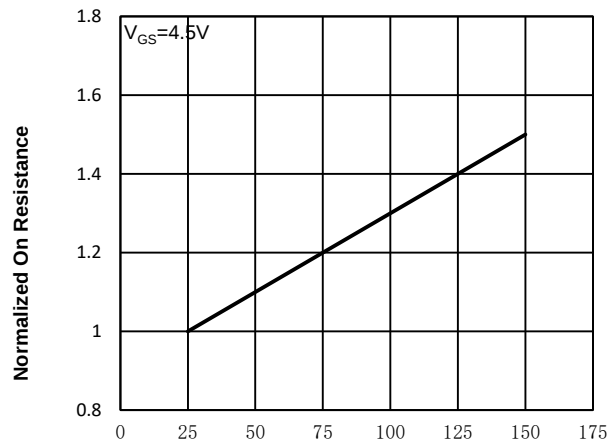


Fig3. Normalized On-Resistance Vs. Temperature

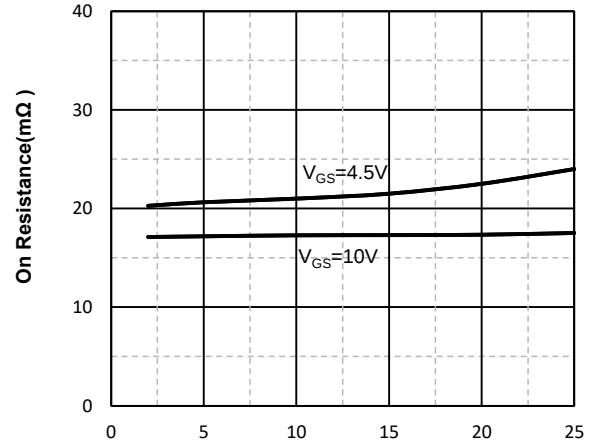


Fig4. On-Resistance Vs. Drain-Source Current

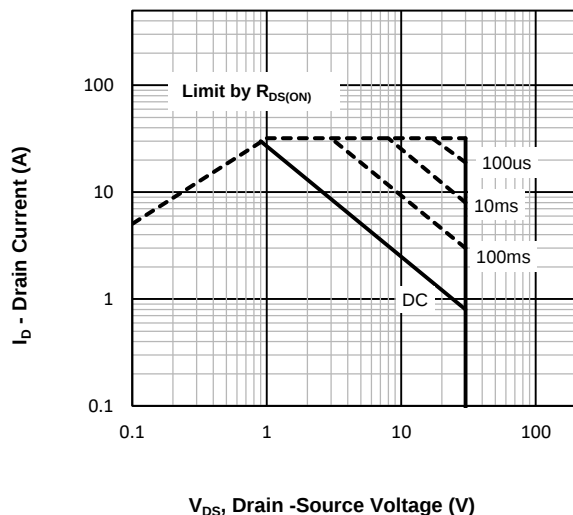


Fig5. Maximum Safe Operating Area

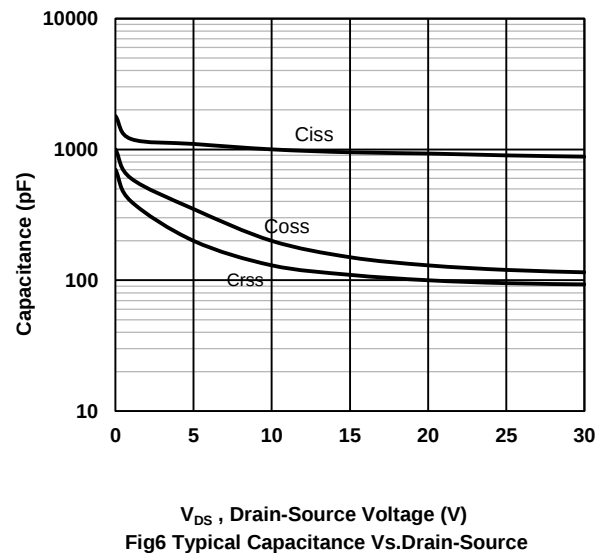
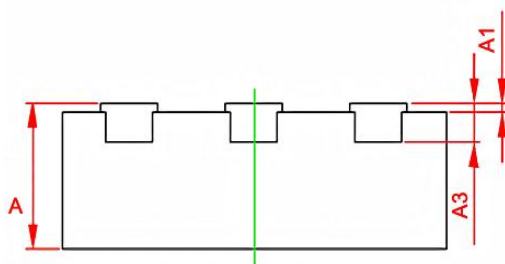
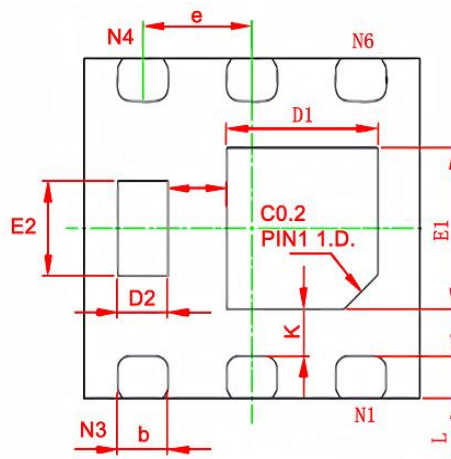
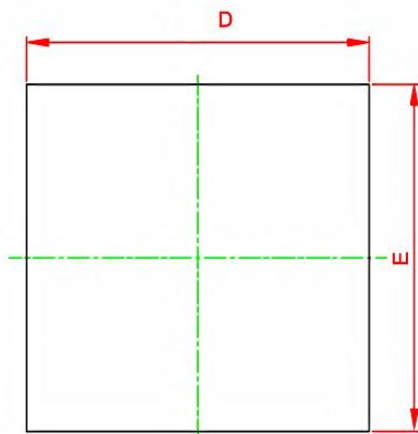


Fig6 Typical Capacitance Vs. Drain-Source

DFN2X2-6L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.600	0.700	0.023	0.027
A1	0.000	0.050	0.000	0.001
A3	0.203REF		0.007REF	
b	0.315	0.415	0.012	0.016
D	1.924	2.076	0.075	0.081
E	1.924	2.076	0.075	0.081
e	0.650TYP		0.225TYP	
L	0.224	0.376	0.008	0.014
k	0.200	-	0.007	-
E1	1.000	1.200	0.039	0.047
D1	0.900	1.100	0.035	0.043
E2	0.700	0.900	0.027	0.035
D2	0.150	0.350	0.005	0.013