

Features

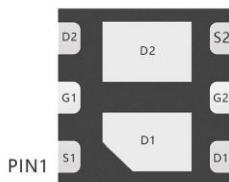
- Trench Power LV MOSFET technology
- High Density Cell Design for Low $R_{DS(ON)}$
- High Speed switching

Product Summary

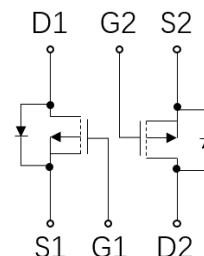
V_{DS}	$R_{DS(ON)}$ TYP	I_D
-30V	40m Ω @-10V	-5A
	48m Ω @-4.5V	

Application

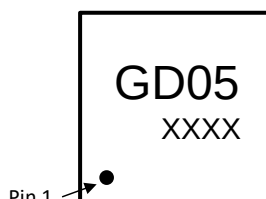
- Battery protection
- Load switch
- Power management



DFN2X2-6L view



Schematic diagram



Pin 1

GD05: Device code
 XXXX: Code
 Solid dot: Pin1 indicator

Marking and pin assignment



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	± 20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ -5	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ -20	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$ -5	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 1.25	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	85	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSMGD05	DFN2X2-6L	GD05	3,000	45,000	180,000	7"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	VGS=0V, ID=-250μA	-30	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=-30V, VGS=0V	--	--	-1.0	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	--	-2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-5.0A	--	40	60	mΩ
		VGS=-4.5V, ID=-3.0A	--	48	70	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=-15V, VGS=0V, f=1MHz	--	260	--	pF
COSS	Output Capacitance		--	50	--	pF
CRSS	Reverse Transfer Capacitance		--	40	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=-15V, ID=-5A, VGS=-10V	--	7	--	nC
Qgs	Gate Source Charge		--	2	--	nC
Qgd	Gate Drain Charge		--	1	--	nC
t _{d(on)}	Turn-on Delay Time	VDD=-15V, ID=-5A, VGS=-4.5V, RG=3Ω	--	5	--	nS
t _r	Turn-on Rise Time		--	23	--	nS
t _{d(off)}	Turn-Off Delay Time		--	21	--	nS
t _f	Turn-Off Fall Time		--	30	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25℃, IS=-5A	--	--	-1.2	V

Typical Operating Characteristics

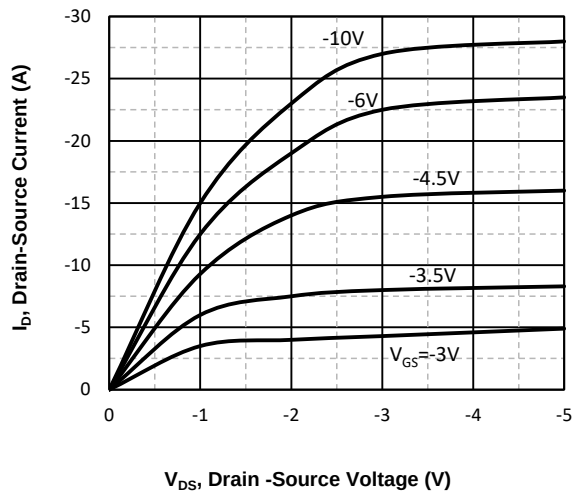


Fig1. Typical Output Characteristics

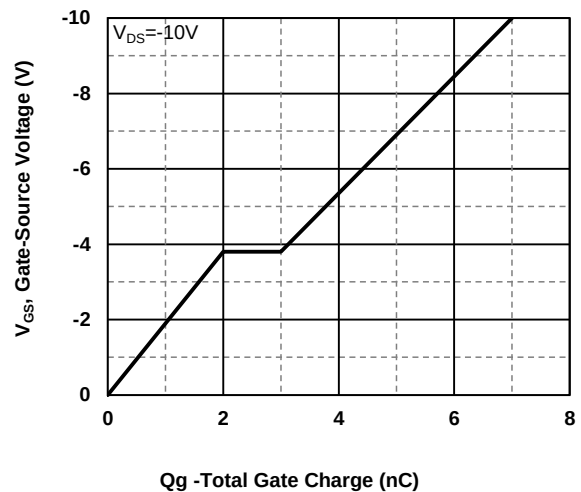


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

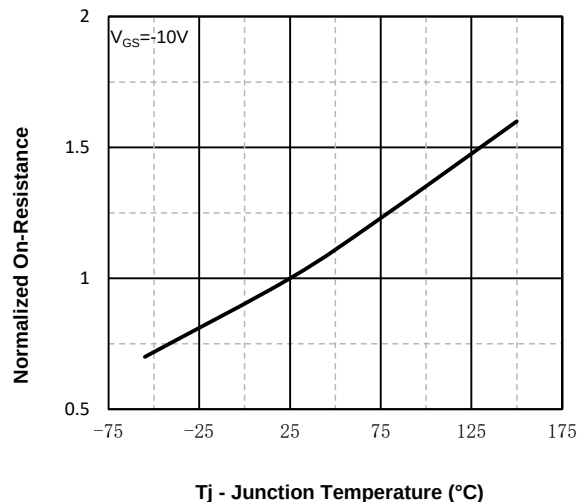


Fig3. Normalized On-Resistance Vs. Temperature

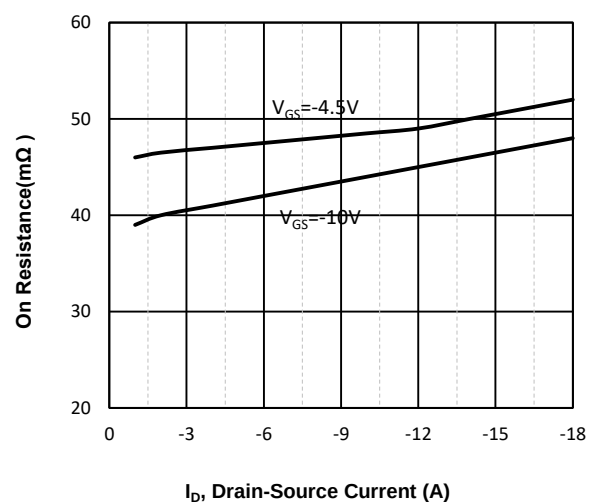


Fig4. On Resistance Vs. Drain-Source Current

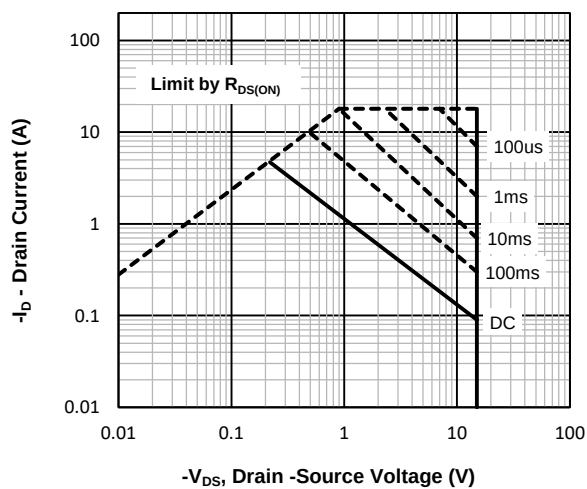


Fig5. Maximum Safe Operating Area

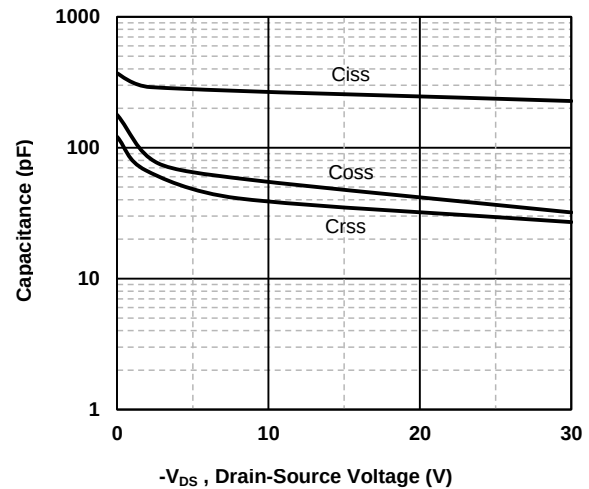
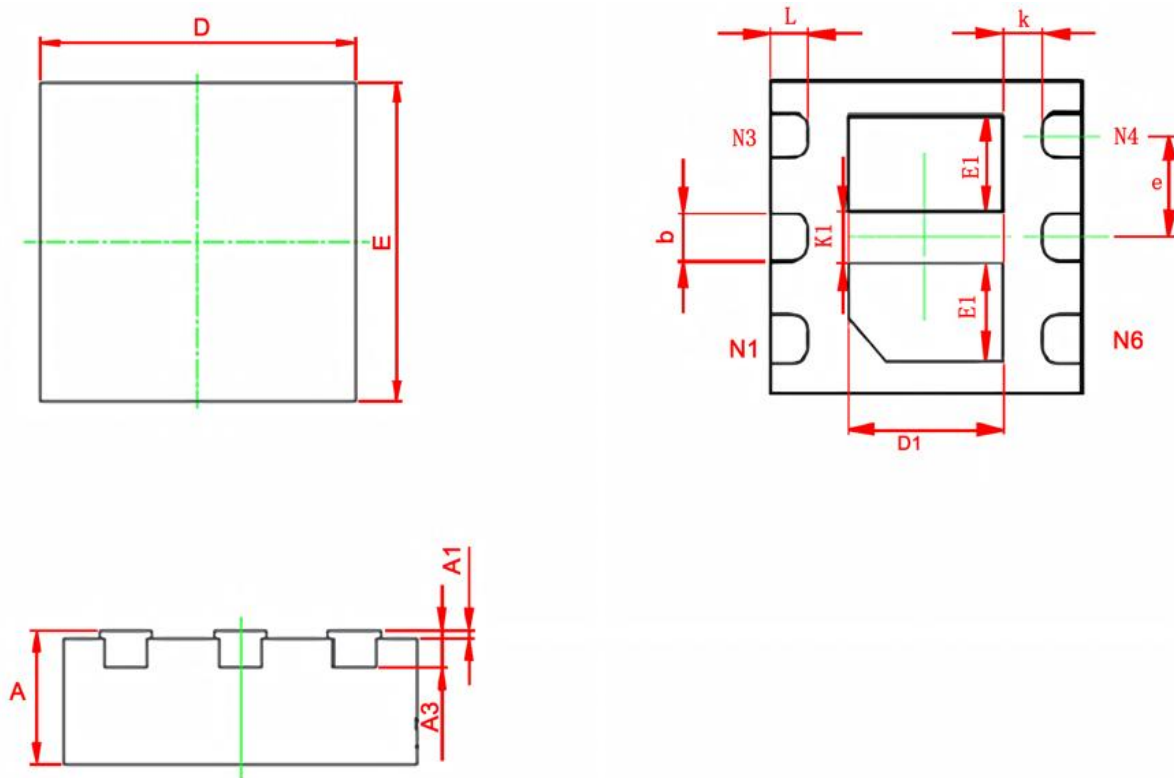


Fig6 Typical Capacitance Vs. Drain-Source Voltage

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	