

Features

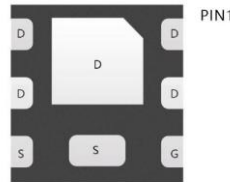
- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity
- Fast switching and soft recovery

Application

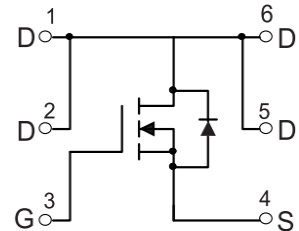
- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor

Product Summary

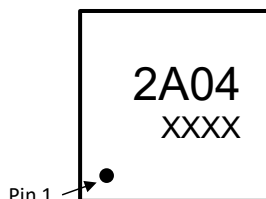
V_{DS}	$R_{DS(ON)}$ TYP	I_D
200V	480mΩ@10V	4A



DFN2X2-6L view



Schematic diagram



2A04 : 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
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Common Ratings (TC=25°C Unless Otherwise Noted)

V _{DS}	Drain-Source Breakdown Voltage		200	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	4	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ C$	20	A
I_D	Continuous Drain Current	$T_C=25^\circ C$	4	A
P_D	Maximum Power Dissipation	$T_C=25^\circ C$	1.96	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		83.5	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSM2A04	DFN2X2-6L	2A04	3,000	45,000	180,000	7"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	VGS=0V, ID=250μA	200	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=200V, VGS=0V	--	--	1.0	uA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	1.0	1.8	2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=4A	--	480	580	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=80V, VGS=0V, f=1MHz	--	740	--	pF
COSS	Output Capacitance		--	15	--	pF
CRSS	Reverse Transfer Capacitance		--	5	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=160V, ID=4A, VGS=10V	--	17	--	nC
Qgs	Gate Source Charge		--	2.5	--	nC
Qgd	Gate Drain Charge		--	7	--	nC
td(on)	Turn-on Delay Time	VDD=100V, ID=4A, RG=25Ω	--	10	--	nS
tr	Turn-on Rise Time		--	13	--	nS
td(off)	Turn-Off Delay Time		--	16	--	nS
tf	Turn-Off Fall Time		--	15	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25°C, Is=4A	--	--	1.4	V

Typical Operating Characteristics

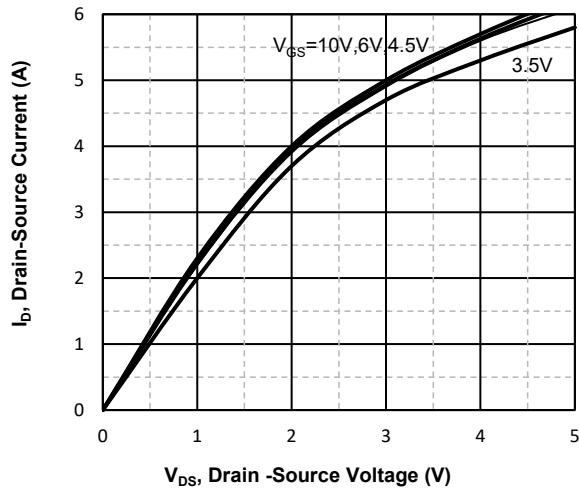


Fig1. Typical Output Characteristics

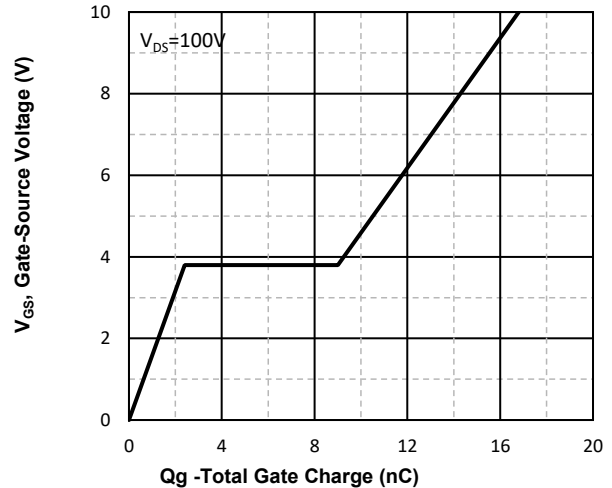


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

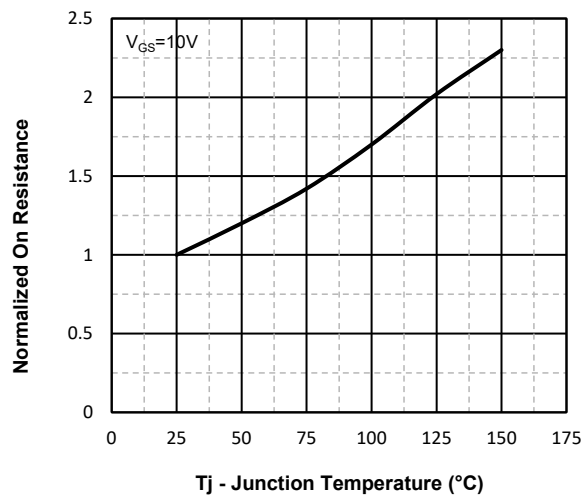


Fig3. Normalized On-Resistance Vs. Temperature

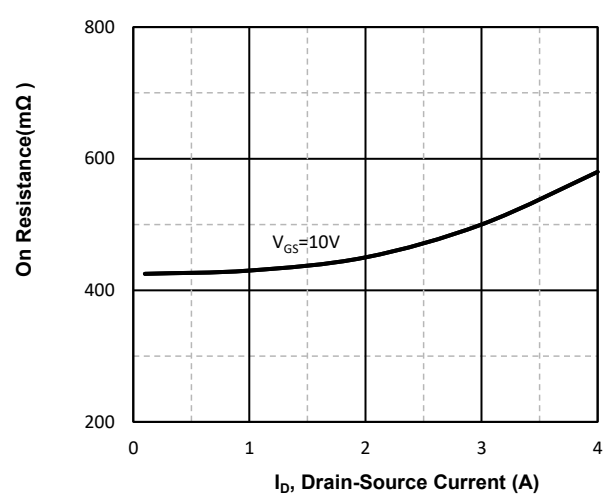


Fig4. On-Resistance Vs. Drain-Source Current

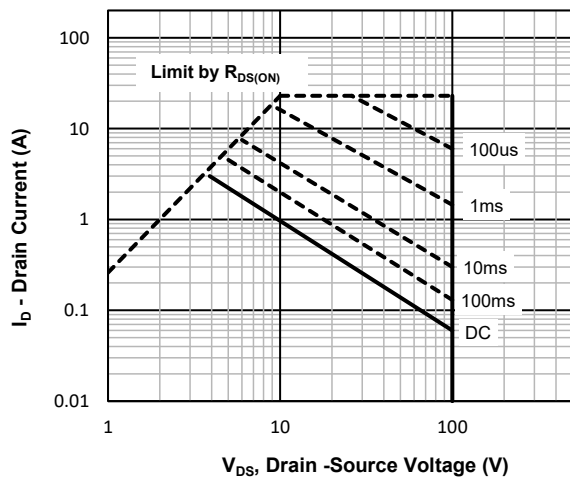


Fig5. Maximum Safe Operating Area

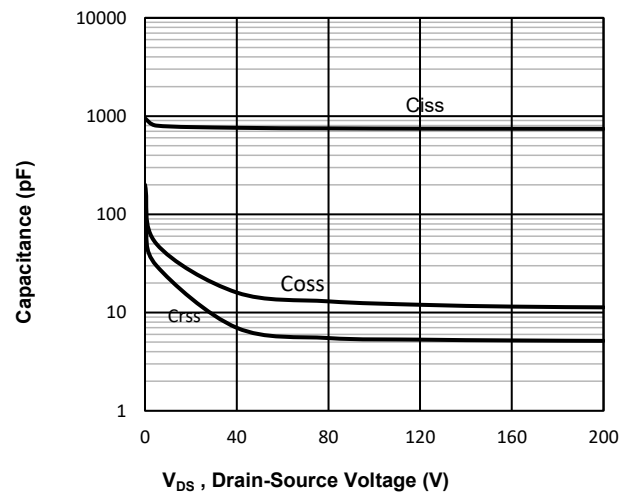
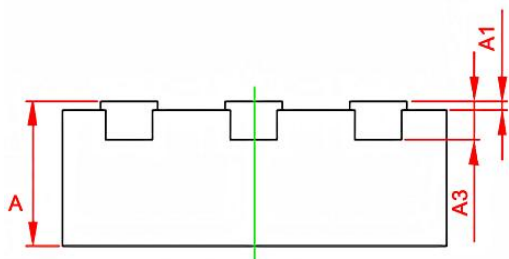
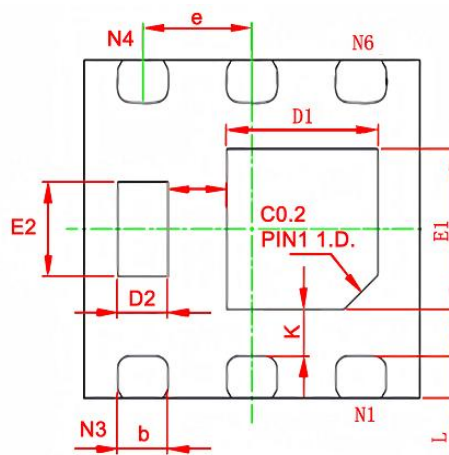
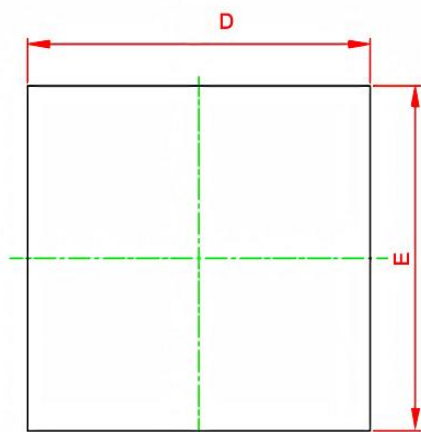


Fig6. Typical Capacitance Vs. Drain-Source Voltage

DFN2X2-6L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.600	0.700	0.023	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