

Features

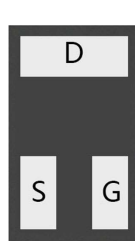
- Trench Power LV MOSFET technology
- High Power and current handing capability

Product Summary

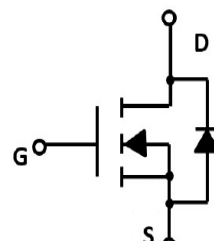
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
20V	65mΩ@4.5V	2.3A
	85mΩ@2.5V	

Application

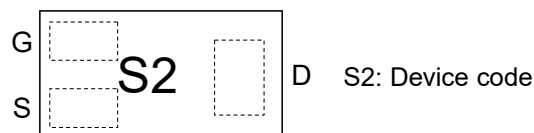
- PWM application
- Load switch



DFN1006-3L view



Schematic diagram



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	20	V
V_{GS}	Gate-Source Voltage	±10	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_c=25^{\circ}C$ 2.3	A

Mounted on Large Heat Sink

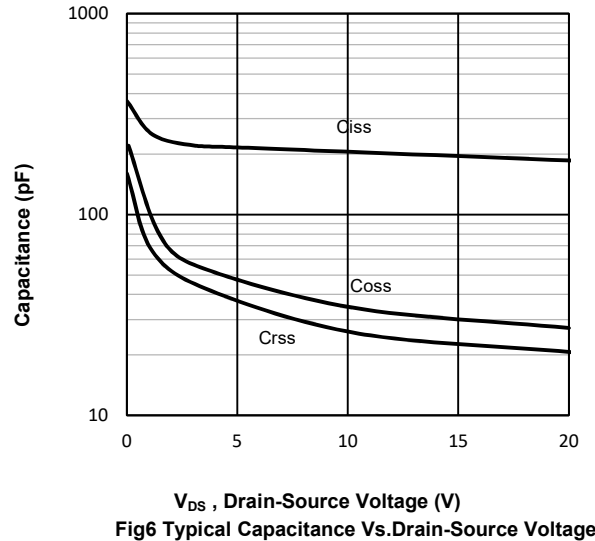
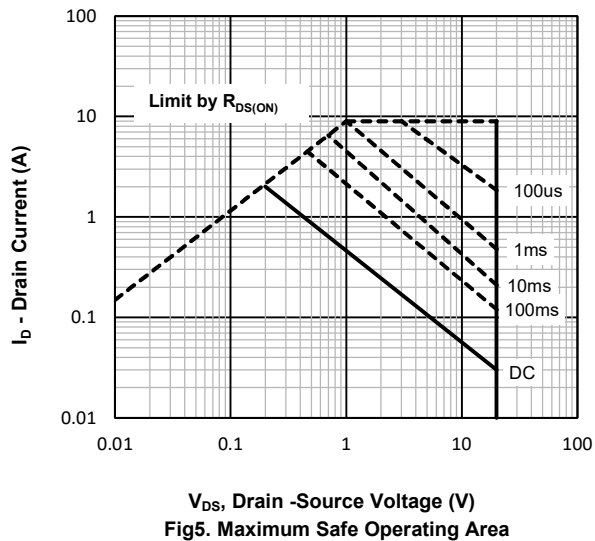
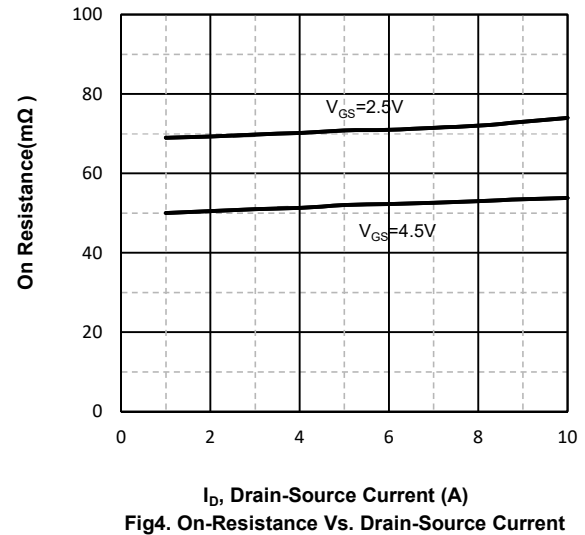
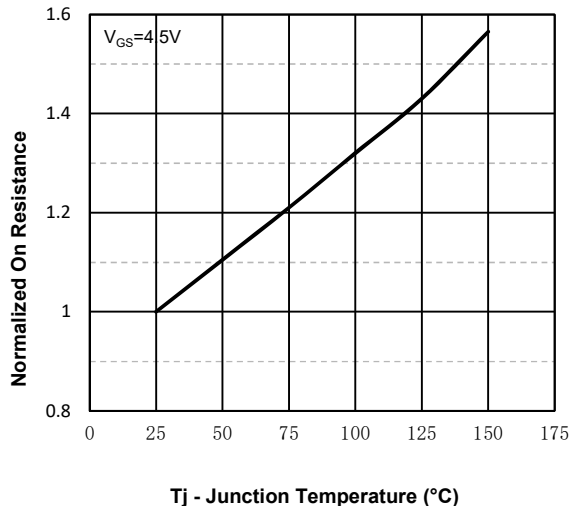
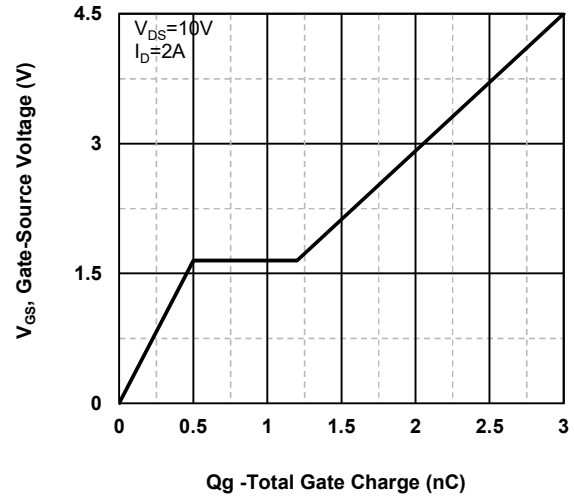
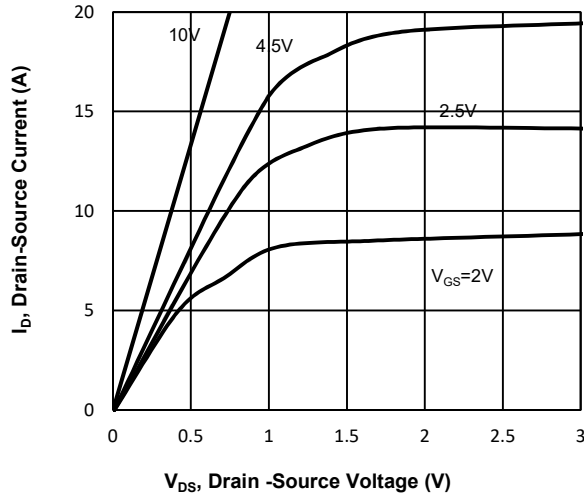
I_{DM}	Pulse Drain Current Tested	$T_c=25^{\circ}C$ 8	A
I_D	Continuous Drain Current	$T_c=25^{\circ}C$ 2.3	A
P_D	Maximum Power Dissipation	$T_c=25^{\circ}C$ 0.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	178	°C/ W

Ordering Information (Example)

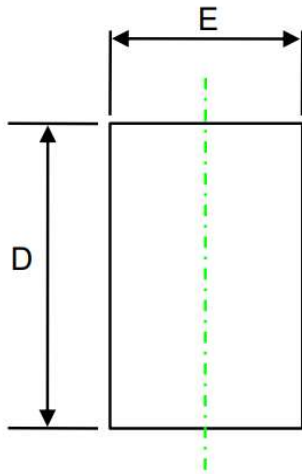
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSBA2302	DFN1006-3L	S2	10,000	150,000	600,000	7"reel

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	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} =±10V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.45	0.7	1.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =2.3A	--	50	65	mΩ
		V _{GS} =2.5V, I _D =2.0A	--	69	85	mΩ
		V _{GS} =1.8V, I _D =1.5A	--	105	150	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	200	--	pF
C _{OSS}	Output Capacitance		--	35	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	28	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =2A, V _{GS} =4.5V	--	3	--	nC
Q _{gs}	Gate Source Charge		--	0.5	--	nC
Q _{gd}	Gate Drain Charge		--	0.7	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =2A, V _{GS} =4.5V, R _G =3Ω	--	3	--	nS
t _r	Turn-on Rise Time		--	11	--	nS
t _{d(off)}	Turn-Off Delay Time		--	20	--	nS
t _f	Turn-Off Fall Time		--	8	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=2.3A	--	--	1.2	V

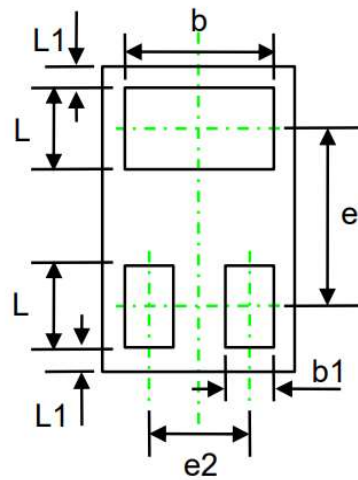
Typical Operating Characteristics



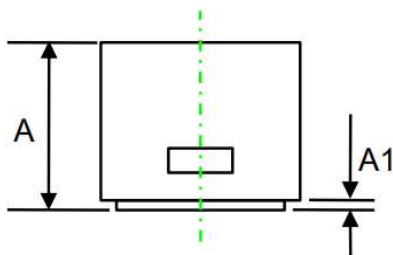
DFN1006-3L Package information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.450	0.550	0.017	0.021
A1	0.000	0.030	0.000	0.001
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.021	0.025
b	0.470	0.550	0.018	0.021
e	0.65TYP		0.025TYP	
e2	0.35TYP		0.013TYP	
L1	0.05TYP		0.001TYP	
L	0.220	0.300	0.008	0.012
b1	0.110	0.190	0.004	0.007