

Features

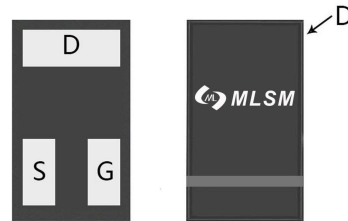
- Lead Free Product is Acquired
- Surface Mount Package
- N-Channel Switch with Low $R_{DS(on)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected Gate

Application

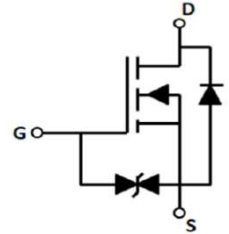
- Load Switch
- Portable Applications
- Power Management Functions

Product Summary

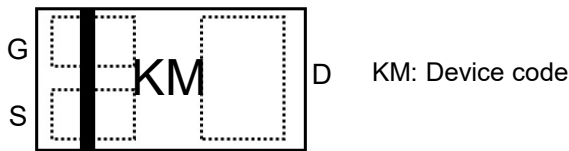
V_{DS}	$R_{DS(on)}$ MAX	I_D MAX
30V	500mΩ@4.5V	0.6A
	600mΩ@2.5V	



DFN1006-3L view



Schematic diagram



Marking and pin assignment



Pb-Free



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		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	0.6	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$	2.4	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$	0.6	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$	275	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient		455	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLABA3144K	DFN1006-3L	KM	10,000	150,000	600,000	7"reel

Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T_J = 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	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±10V, V _{DS} =0V	--	--	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.5	0.95	1.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =0.6A	--	290	500	mΩ
		V _{GS} =2.5V, I _D =0.3A	--	360	600	mΩ

Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated)

C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	42	--	pF
C _{OSS}	Output Capacitance		--	9	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	4.7	--	pF

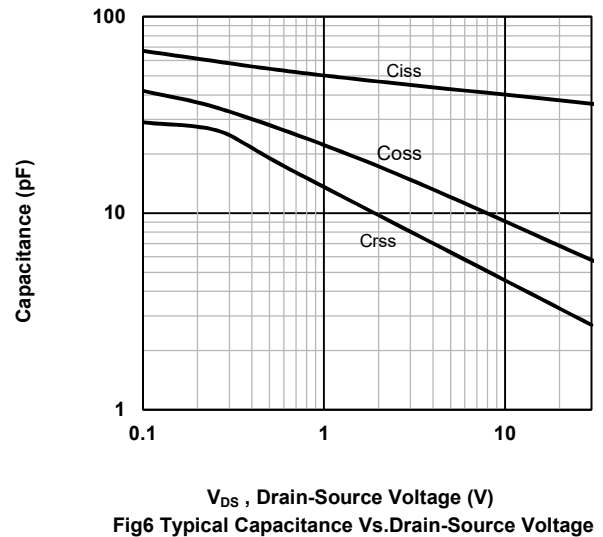
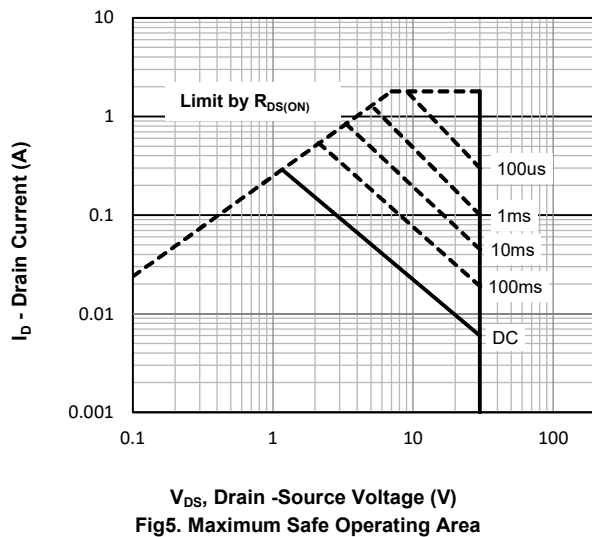
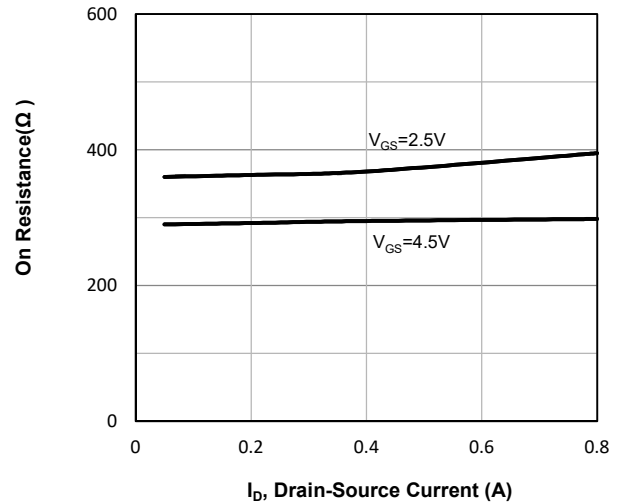
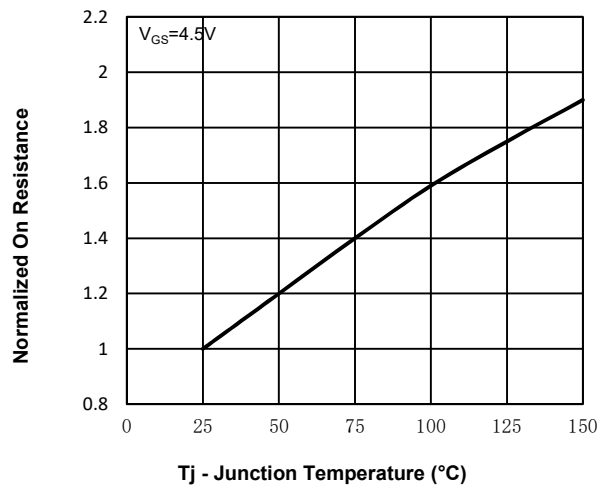
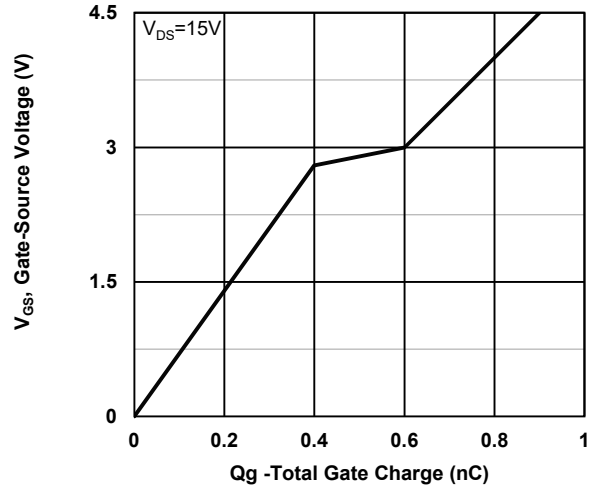
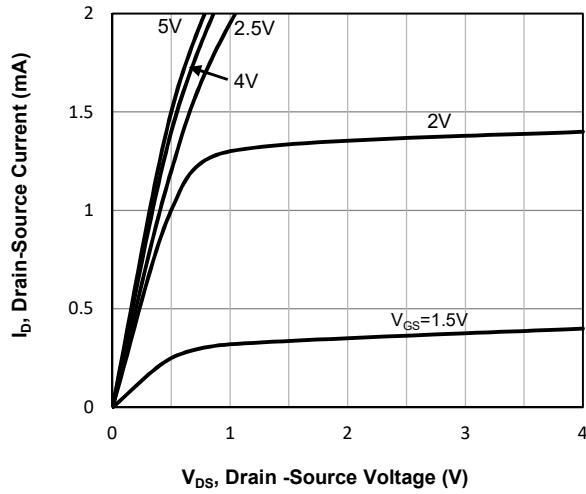
Switching Characteristics

Q _g	Total Gate Charge	V _{DS} =15V, I _D =0.6A, V _{GS} =10V	--	0.9	--	nC
Q _{gs}	Gate-Source Charge		--	0.4	--	nC
Q _{gd}	Gate-Drain Charge		--	0.2	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =0.6A, V _{GS} =4.5V, R _G =10Ω	--	5	--	nS
t _r	Turn-on Rise Time		--	8.2	--	nS
t _{d(off)}	Turn-Off Delay Time		--	23	--	nS
t _f	Turn-off fall Time		--	41	--	nS

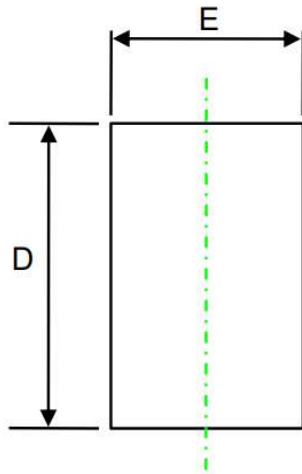
Source- Drain Diode Characteristics

V _{SD}	Forward on voltage	T _J =25°C, I _S =0.6A	--	--	1.2	V
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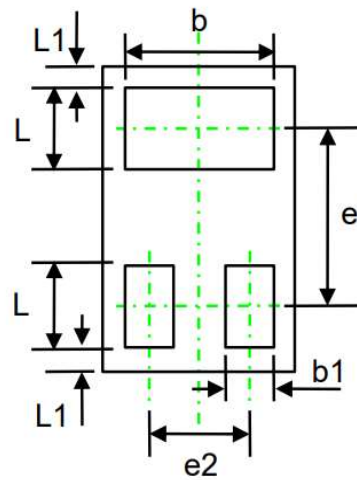
Typical Operating Characteristics



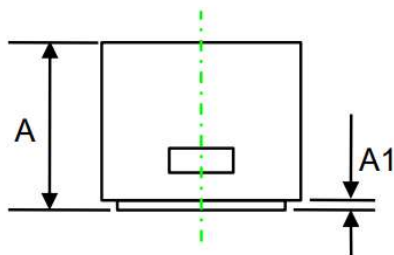
DFN1006-3L Package information



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