

Features

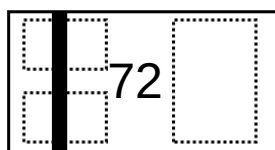
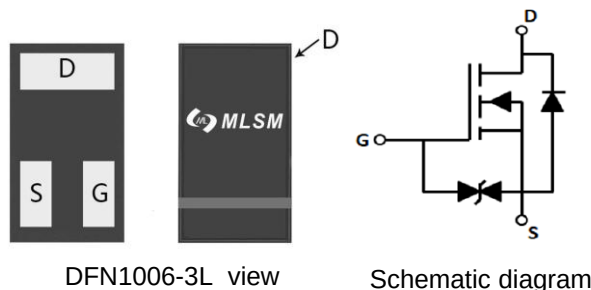
- Low On-Resistance
- Low Threshold Voltage
- Fast Switching Speed
- ESD Protected Gate

Application

- Load Switch
- Portable Applications
- Power Management Functions

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
60V	1.6Ω@10V	0.41A
	2.1Ω@4.5V	



Top View
Bar Denotes Gate
and Source Side

72: Device code



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		60	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	0.41	A

Mounted on Large Heat Sink

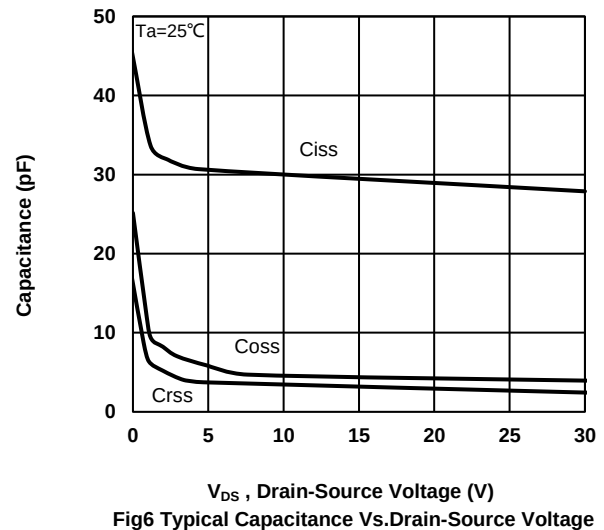
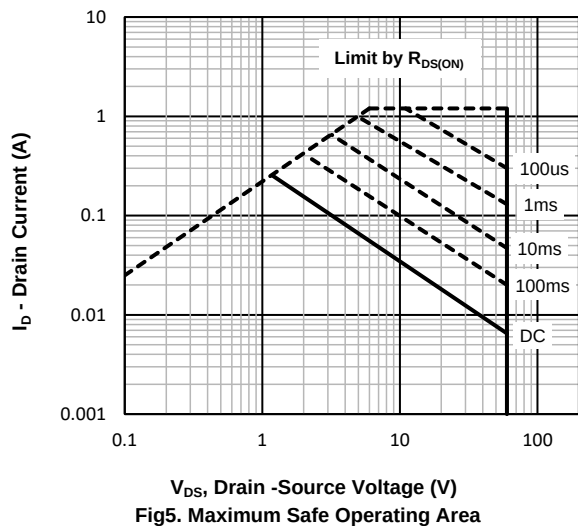
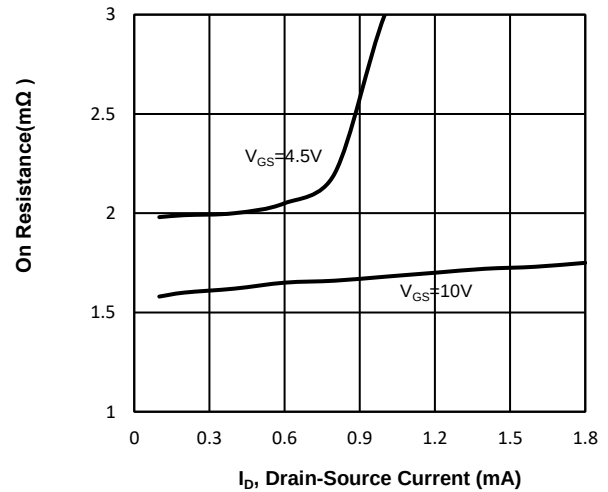
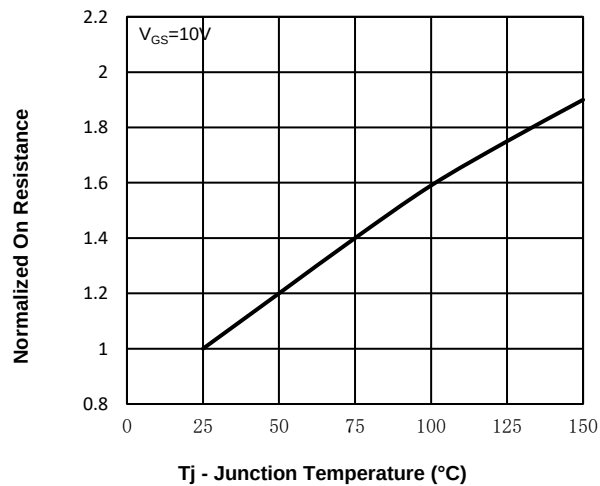
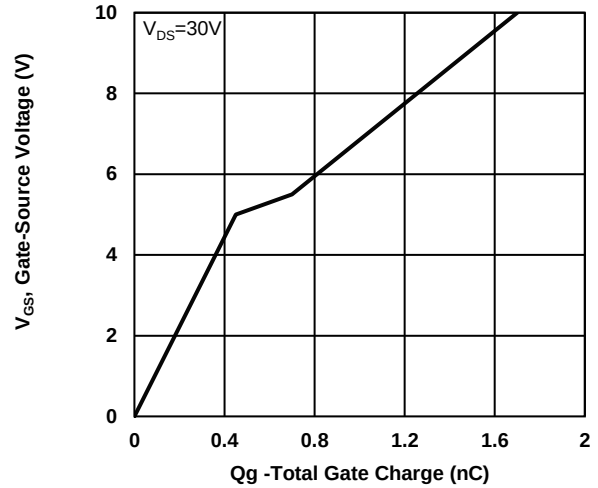
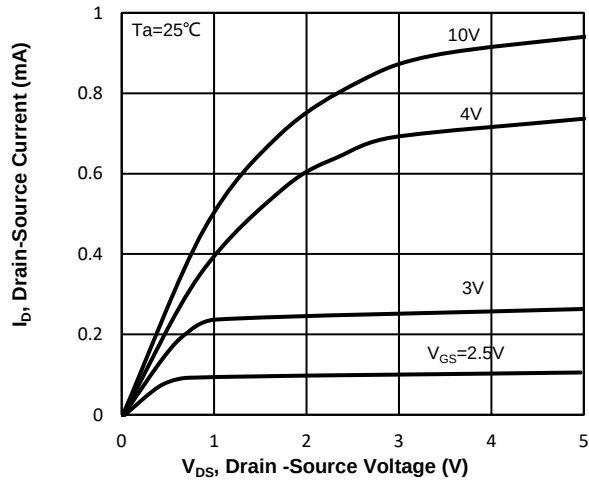
I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$	1.2	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$	0.41	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$	275	mW
E_{SD}	Gate-Source ESD Rating (HBM, Method 3015)		2000	V

Ordering Information (Example)

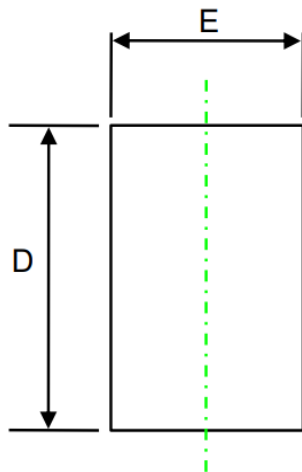
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLABA7002K	DFN1006-3L	72	10,000	150,000	600,000	7"reel

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	V _{GS} =0V, I _D =250μA	60	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.8	1.6	3.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =340mA	--	1.6	3.5	Ω
		V _{GS} =4.5V, I _D =200mA	--	2.1	4.5	Ω
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	--	21	--	pF
C _{OSS}	Output Capacitance		--	9	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	4	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =30V, I _D =0.3A, V _{GS} =10V	--	1.22	2.4	nC
Q _{gs}	Gate-Source Charge		--	0.5	--	nC
Q _{gd}	Gate-Drain Charge		--	0.18	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =50V, I _D =0.2A, V _{GS} =10V, R _G =50Ω	--	7	--	nS
t _r	Turn-on Rise Time		--	19	--	nS
t _{d(off)}	Turn-Off Delay Time		--	20	--	nS
t _f	Turn-off fall Time		--	84	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=0.41A	--	--	1.2	V

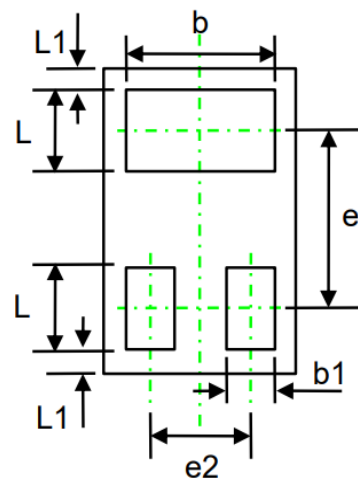
Typical Operating Characteristics



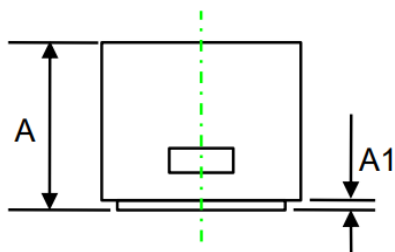
DFN1006-3L Package information



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