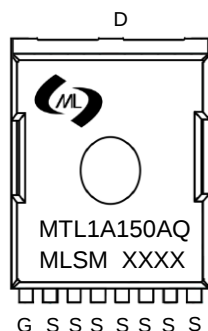


Features

- Split gate trench MOSFET technology
- High density cell design for ultra low RDS(ON)
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

Application

- Power switching application
- Load Switch

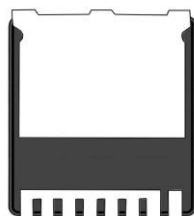


MTL1A150AQ: Device code
XXXX : Code

Marking and pin assignment

Product Summary

V _{DS}	R _{DS(ON)} TYP	I _D MAX
-100V	8mΩ@10V	-150A



TOLL-8L top view



Schematic diagram



Halogen-Free

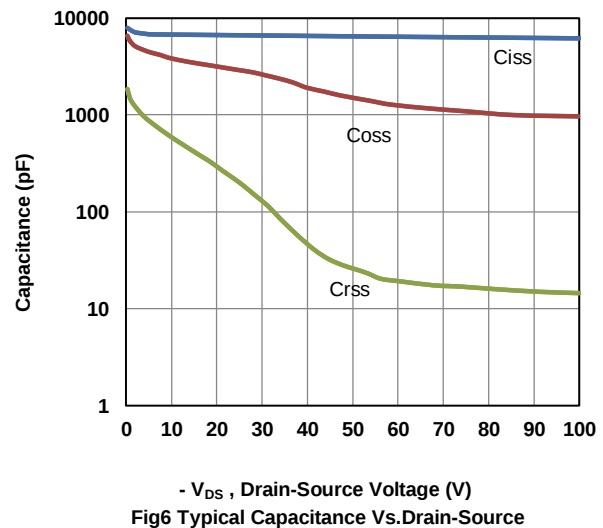
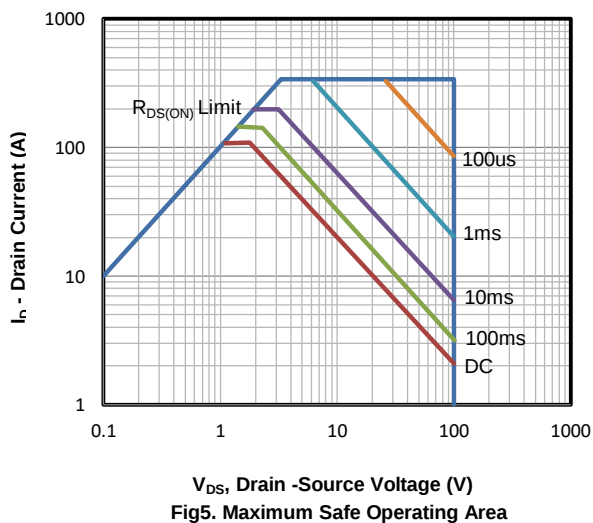
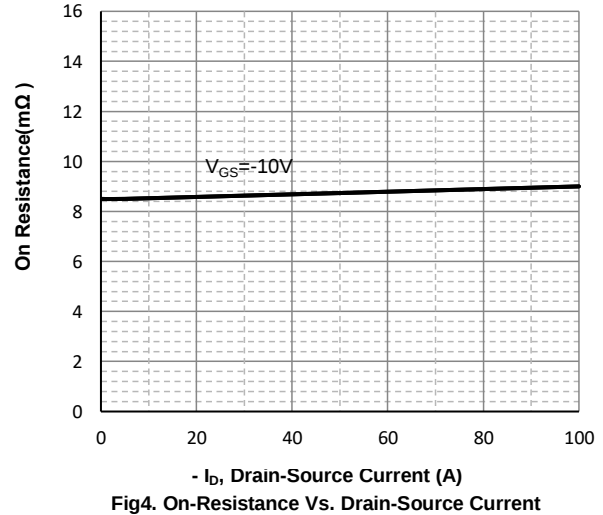
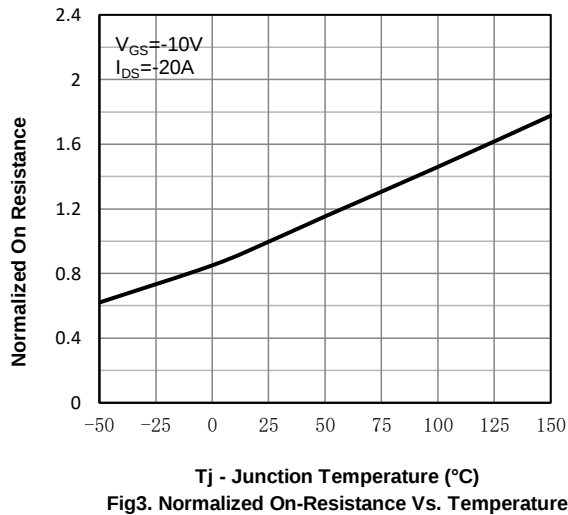
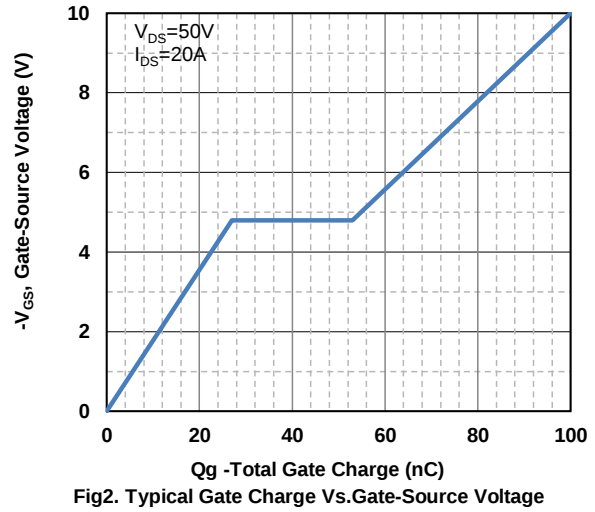
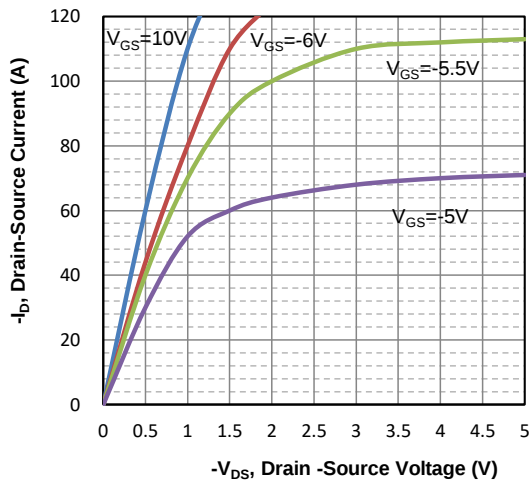
Absolute Maximum Ratings (TA=25°C unless otherwise noted)				
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		-100	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	-150	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-600	A
I _D	Continuous Drain Current	Tc=25°C	-150	A
P _D	Maximum Power Dissipation	Tc=25°C	270	W
E _{AS}	Single Pulsed Avalanche Energy ^{Note1}		700	mJ
R _{θJC}	Thermal Resistance Junction-to-Case		0.46	°C/W

Ordering Information (Example)						
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MTL1A150AQ	TOLL-8L	MTL1A150AQ	2,000	2,000	14,000	13"reel

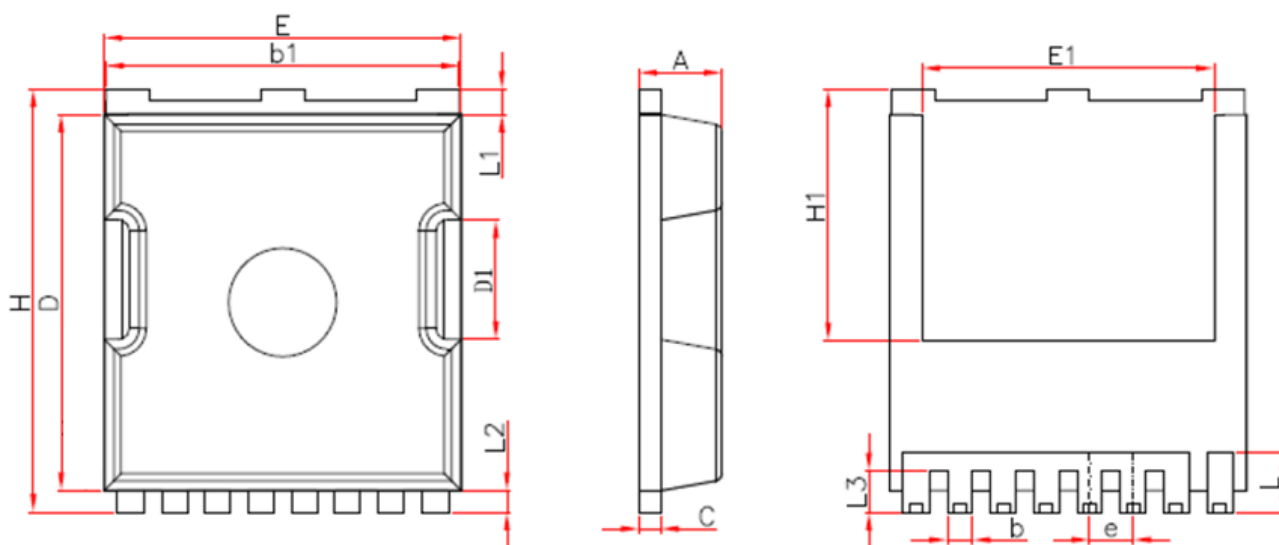
Electrical Characteristics (TJ=25°C unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-100	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-100V, V _{GS} =0V	--	--	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-2.0	--	-4.0	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-20A	--	8	11	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz	--	6440	--	pF
C _{OSS}	Output Capacitance		--	2940	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	196	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =-50V, I _D =-20A, V _{GS} =-10V	--	100	--	nC
Q _{gs}	Gate Source Charge		--	27	--	nC
Q _{gd}	Gate Drain Charge		--	26	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =-50V, I _D =-20A, V _{GS} =-10V, R _G =3.3Ω	--	15	--	nS
t _r	Turn-on Rise Time		--	40	--	nS
t _{d(off)}	Turn-Off Delay Time		--	46	--	nS
t _f	Turn-Off Fall Time		--	43	--	nS
Source- Drain Diode Characteristics						
Q _{rr}	Reverse Recovery Charge	IS=-20A di/dt=100A/μs		700		nC
t _{rr}	Reverse Recovery Time			90		nS
V _{SD}	Forward on voltage	Tj=25°C, Is=-20A	--	--	1.2	V

Note 1: L=0.5mH, RG=25 Ω , VGS=20V, VDD=30V, Start TJ=25°C

Typical Operating Characteristics



TOLL-8L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.150	2.450	0.085	0.096
b	0.600	0.900	0.024	0.035
b1	9.650	9.950	0.380	0.392
C	0.350	0.650	0.014	0.026
D	10.180	10.700	0.401	0.421
D1	3.150	3.450	0.124	0.136
E	9.700	10.100	0.382	0.398
E1	7.350	8.450	0.289	0.333
e	1.100	1.300	0.043	0.051
H	11.450	11.950	0.451	0.470
H1	6.550	7.500	0.258	0.295
L	1.350	2.100	0.053	0.083
L1	0.600	0.800	0.024	0.031
L2	0.500	0.700	0.020	0.028
L3	1.050	1.300	0.041	0.051