

Features

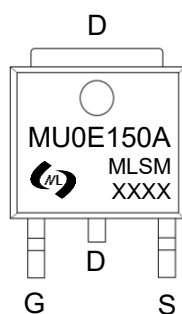
- Low gate charge
- Low Ciss
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability

Application

- Power switching application

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
40V	2.8mΩ@10V	150A
	4.0mΩ@4.5V	

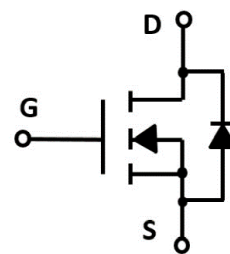


Marking and pin assignment

MU0E150A : Device code
XXXX : Code



TO-252 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		40	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

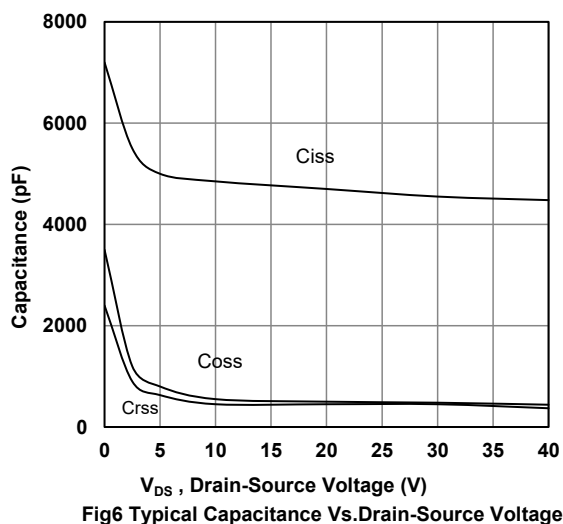
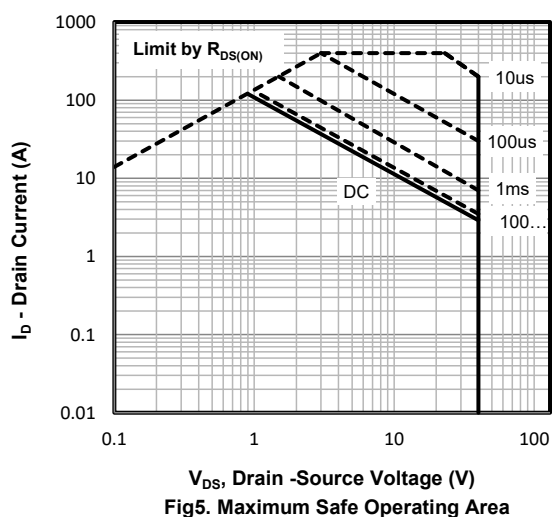
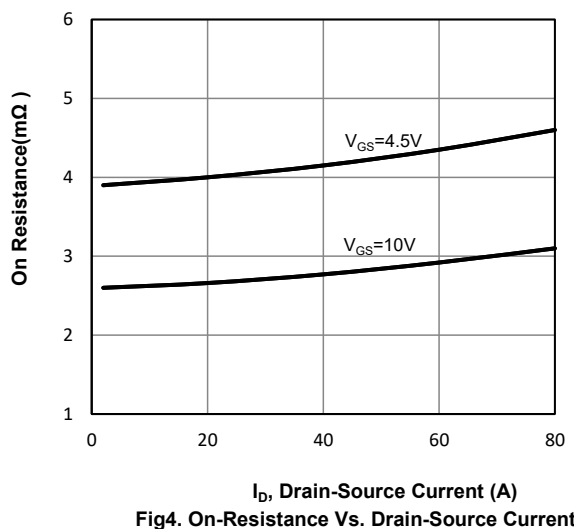
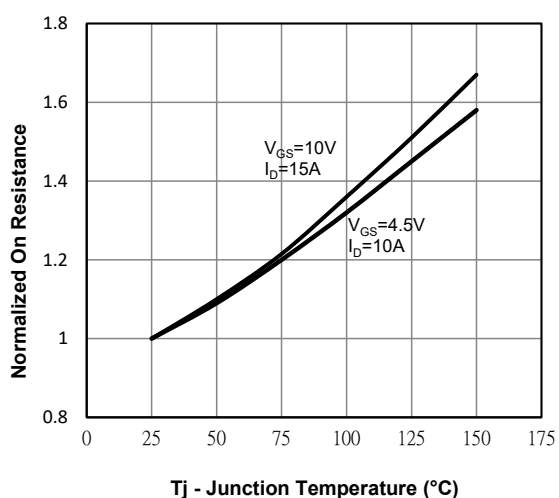
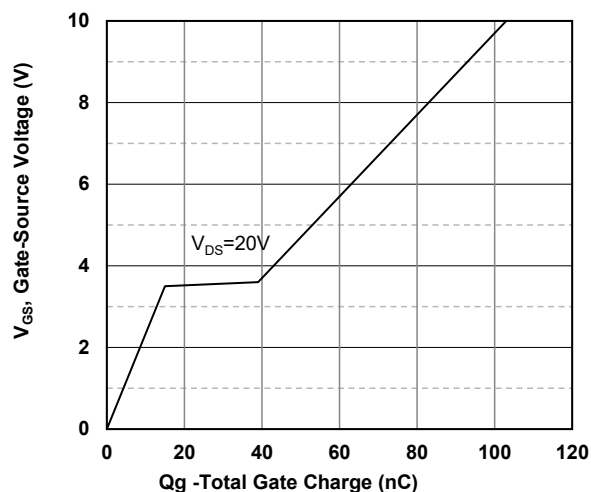
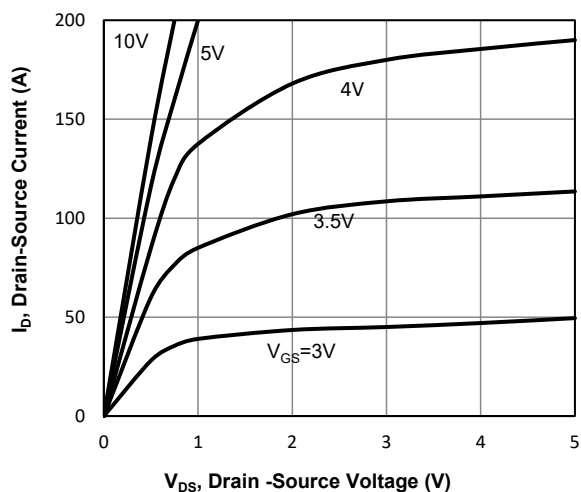
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$	450	A
I_D	Continuous Drain Current@GS=10V	$T_C=25^\circ\text{C}$	150	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$	110	W
E_{AS}	Single pulse avalanche energy		272	mJ

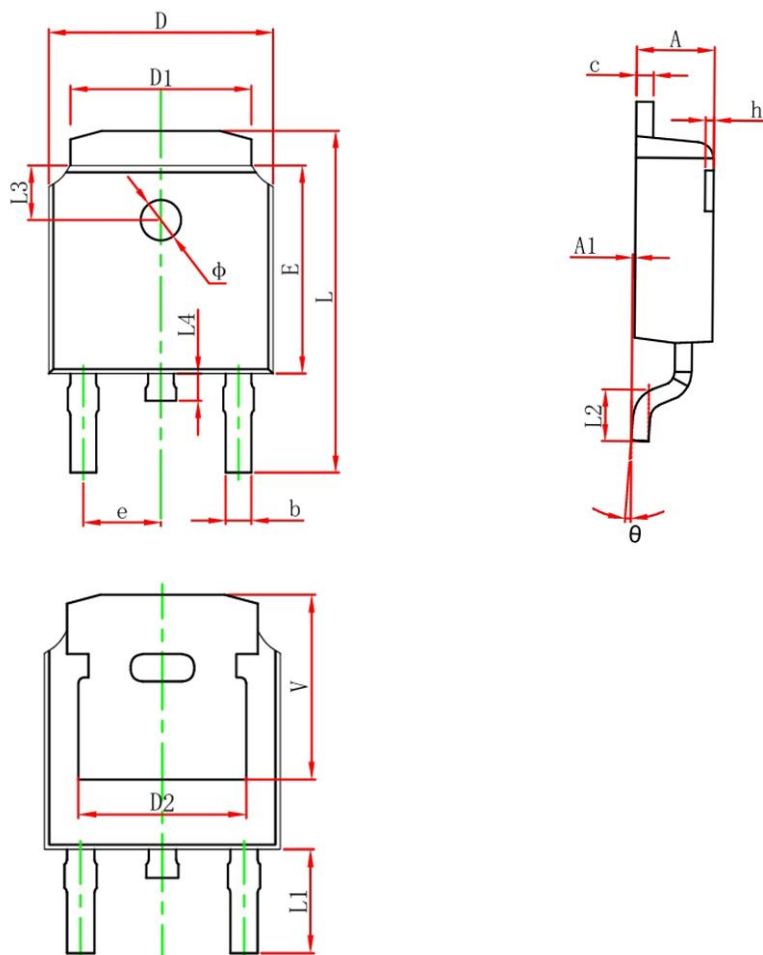
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MU0E150A	TO-252	MU0E150A	2,500	5,000	35,000	13"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	40	–	–	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =40V, 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	1.0	1.5	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =30A	–	2.8	3.5	mΩ
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =10A	–	4.0	5.0	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =20V, V _{GS} =0V, f=1MHz	–	4645	–	pF
C _{OSS}	Output Capacitance		–	436	–	pF
C _{RSS}	Reverse Transfer Capacitance		–	360	–	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =20V, I _D =20A, V _{GS} =10V	–	102	–	nC
Q _{gs}	Gate Source Charge		–	15.8	–	nC
Q _{gd}	Gate Drain Charge		–	21.9	–	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =20V, I _D =20A, V _{GS} =10V, R _{GEN} =3Ω	–	12	–	nS
t _r	Turn-on Rise Time		–	54	–	nS
t _{d(off)}	Turn-Off Delay Time		–	120	–	nS
t _f	Turn-Off Fall Time		–	80	–	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=15A,	–	0.8	1.2	V

Typical Operating Characteristics



TO-252 Package information


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.450	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.386	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	