

Features

- Trench Power LV MOSFET technology
- High density cell design for Low $R_{DS(ON)}$
- High Speed switching

Application

- Battery protection
- Load switch
- Power management



Marking and pin assignment

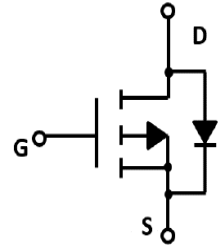
MU0E30AP: Device code
 XXXX: Code

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-40V	27mΩ@-10V	-30A
	35mΩ@-4.5V	



TO-252 top view



Schematic diagram



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		-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	$T_c=25^\circ\text{C}$	-30	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	-120	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	-30	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	35	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		60	°C/W

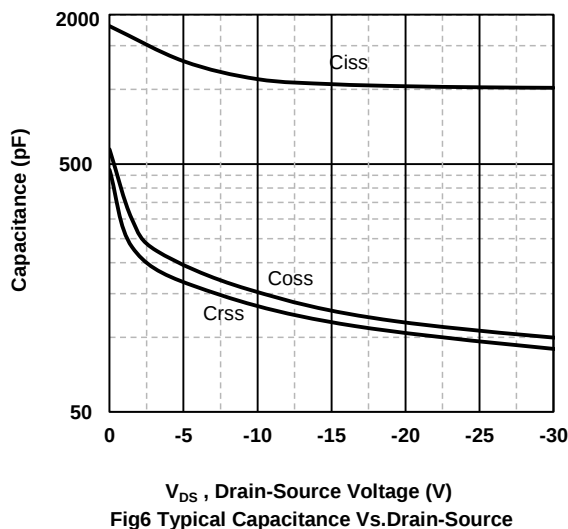
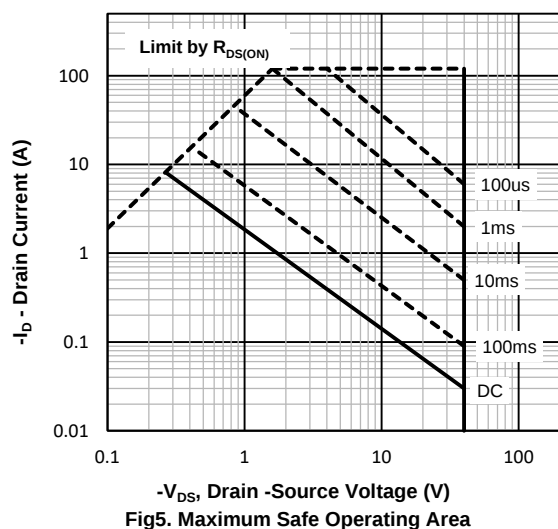
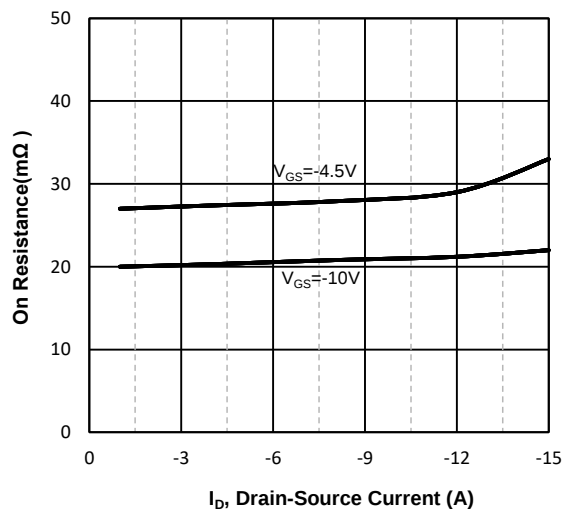
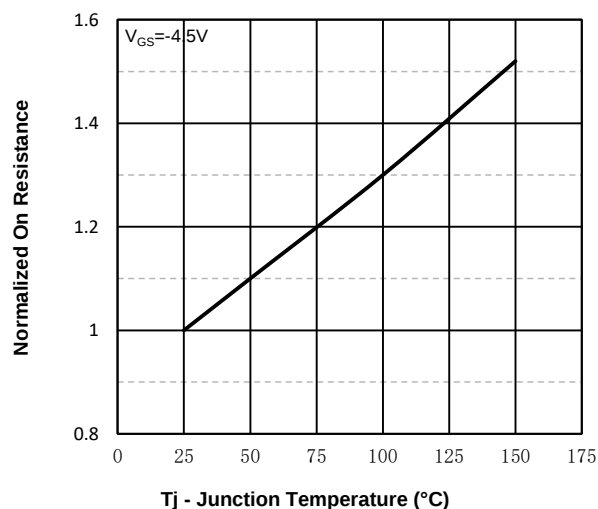
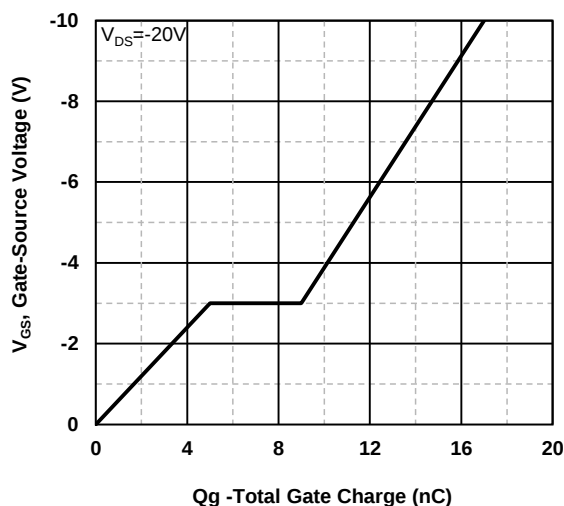
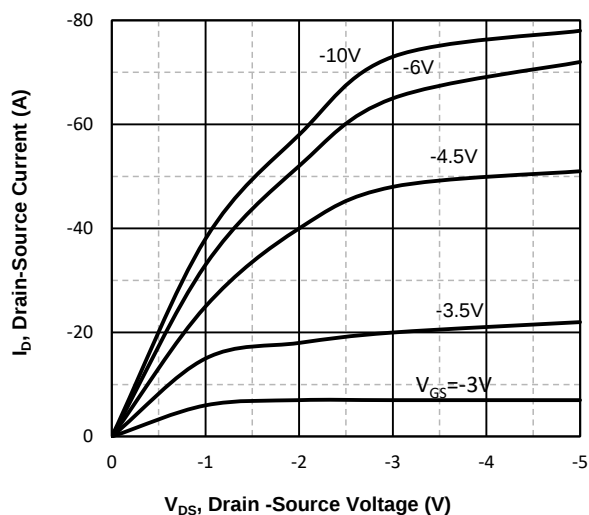
Ordering Information (Example)

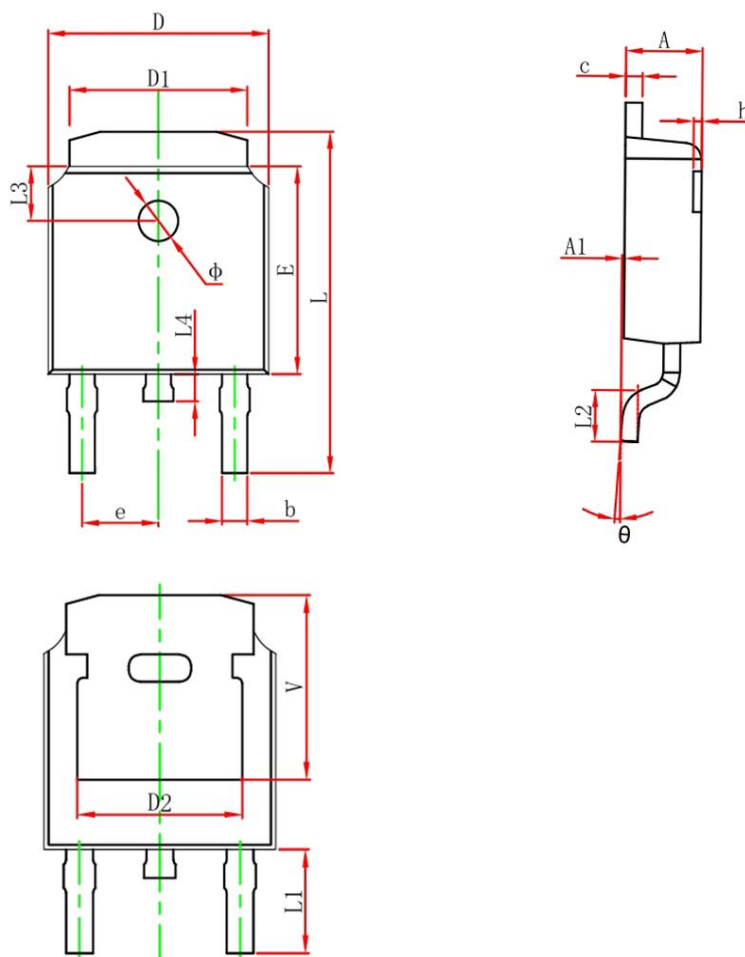
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MU0E30AP	TO-252	MU0E30AP	2,500	5,000	35,000	13"reel

Electrical Characteristics (T_J=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	VGS=0V, ID=-250μA	-40	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=-40V, VGS=0V	--	--	-1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	-1.7	-2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-20A	--	20	27	mΩ
		VGS=-4.5V, ID=-15A	--	26	35	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=-20V, VGS=0V, f=1MHz	--	1080	--	pF
COSS	Output Capacitance		--	120	--	pF
CRSS	Reverse Transfer Capacitance		--	110	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDD=-20V, ID=-15A, VGS=-10V	--	17	--	nC
Qgs	Gate Source Charge		--	4.5	--	nC
Qgd	Gate Drain Charge		--	4	--	nC
td(on)	Turn-on Delay Time	VDD=-20V, ID=-15A, VGS=-10V, RG=3Ω	--	7	--	nS
tr	Turn-on Rise Time		--	24	--	nS
td(off)	Turn-Off Delay Time		--	20	--	nS
tf	Turn-Off Fall Time		--	16	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25°C, IS=-10A	--	--	-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.	