MLSM
MICROELECTRONICS

ME0D30AP

-30V/-30A P-Channel MOSFET

Features

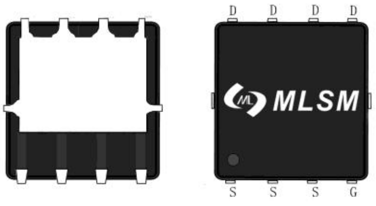
- Trench Power LV MOSFET technology
- High Density Cell Design for Low $R_{DS(ON)}$
- High Speed switching

Product Summary

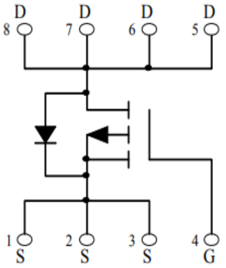
V_{DS}	$R_{DS(ON)}$ TYP	I_D
-30V	15mΩ@-10V	-30A
	24mΩ@-4.5V	

Application

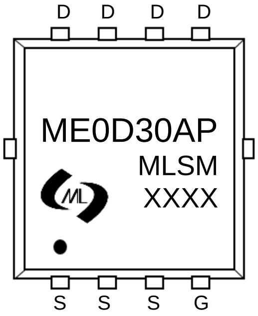
- Battery protection
- Load switch
- Power management



PDFN3X3-8L view



Schematic diagram



ME0D30AP : Device code
XXXX : Code

Marking and pin assignment

Pb-Free
RoHS
Halogen-Free

Absolute Maximum Ratings (TA=25℃unless otherwise noted)				
Symbol	**Parameter**		**Rating**	**Unit**
Common Ratings (TC=25°C Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		-30	V
V_{GS}	Gate-Source Voltage		±20	V
E_{AS}	Single pulse avalanche energy$^{\text{Note 1}}$		85	mJ
T_J,T_{STG}	Storage Temperature Range		-55 to 175	°C
I_S	Diode Continuous Forward Current	Tc=25°C	-30	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	Tc=25°C	-90	A
I_D	Continuous Drain Current	Tc=25°C	-30	A
P_D	Maximum Power Dissipation	Tc=25°C	25	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		55	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
ME0D30AP	PDFN3X3-8L	ME0D30AP	5,000	10,000	70,000	13"reel

Electrical Characteristics (TJ=25℃ 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	-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}=±20V，V_{DS}=0V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}，I_D=-250μA	-1.0	--	-2.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=-10V，I_D=-30A	--	15	20	mΩ
		V_{GS}=-4.5V，I_D=-20A	--	24	30	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	V_{DS}=-15V，V_{GS}=0V， f=1MHz	--	960	--	pF
C_{OSS}	Output Capacitance		--	170	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	144	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DS}=-15V，I_D=-5A， V_{GS}=0 to -10V	--	22	--	nC
Q_{gs}	Gate Source Charge		--	3	--	nC
Q_{gd}	Gate Drain Charge		--	6	--	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=-15V，I_D=-5A， V_{GS}=-10V，R_G=2.5Ω	--	10	--	nS
t_r	Turn-on Rise Time		--	14	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	50	--	nS
t_f	Turn-Off Fall Time		--	20	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃，Is=-20A	--	--	-1.2	V

Note1：
EAS Condition：Tj=25℃,VDD=:20V,VG=10V, L=0.5mH，RG=25Ω

Typical Operating Characteristics

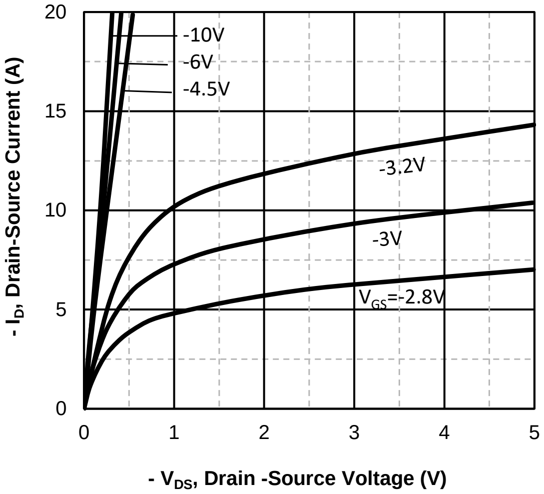


Fig1. Typical Output Characteristics

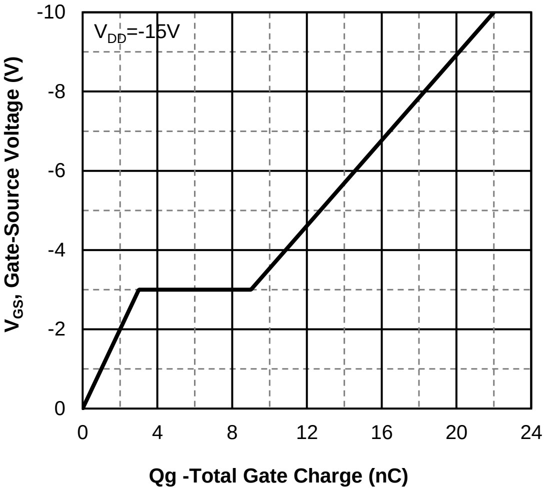


Fig2. Typical Gate Charge Vs.Gate-Source Voltage

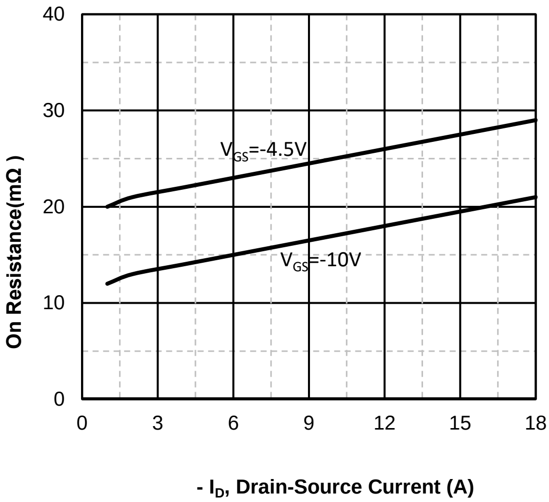


Fig3. Drain-Source on Resistance

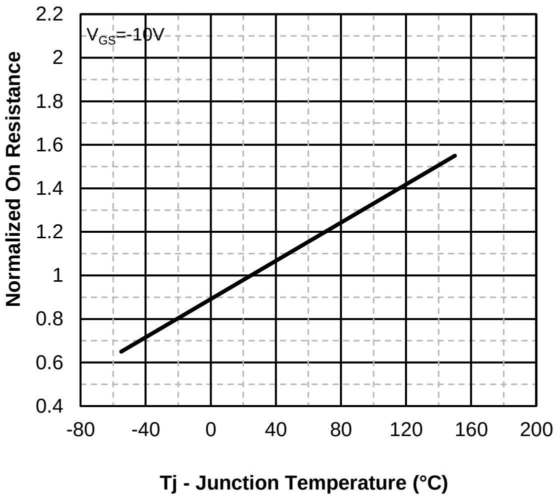


Fig4. Normalized On-Resistance Vs. Temperature

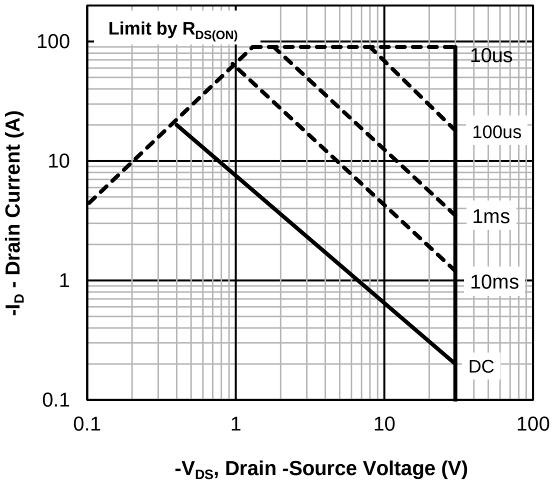


Fig5. Maximum Safe Operating Area

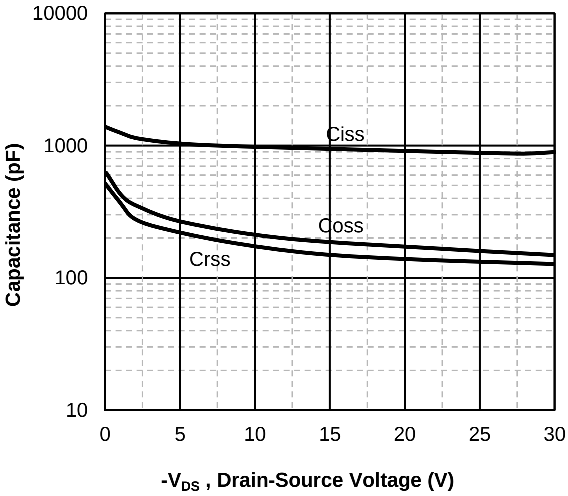
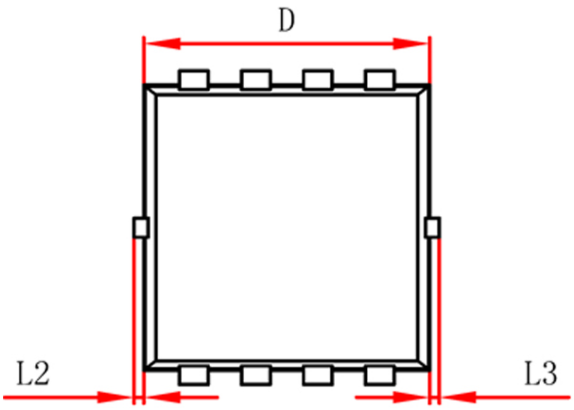
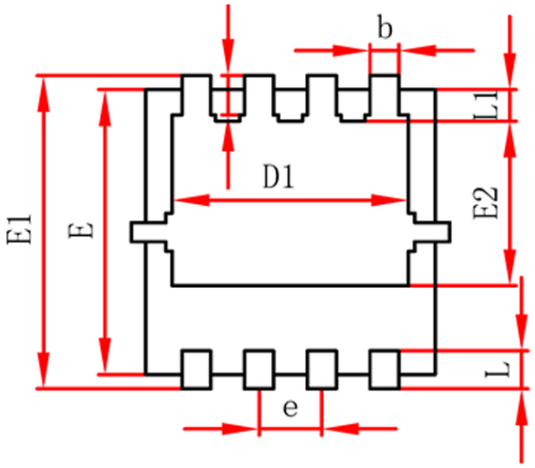
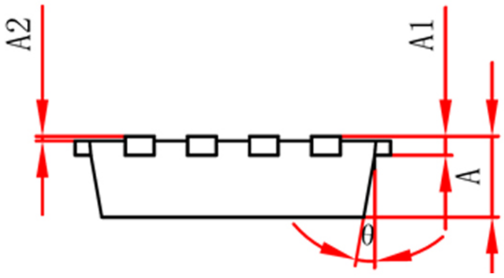


Fig6 Typical Capacitance Vs.Drain-Source Voltage

PDFN3X3-8L Package information







Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.750	0.850	0.030	0.034
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.950	3.150	0.117	0.125
D1	2.400	2.500	0.095	0.099
E	2.950	3.050	0.117	0.121
E1	3.250	3.350	0.129	0.132
E2	1.685	1.785	0.067	0.071
b	0.250	0.350	0.010	0.014
e	0.600	0.700	0.024	0.028
L	0.350	0.450	0.014	0.018
L1	0.325	0.425	0.013	0.017
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.365	0.465	0.014	0.018
θ	10°	12°	10°	12°