ME0D40AP

-30V/-40A P-Channel MOSFET

Features

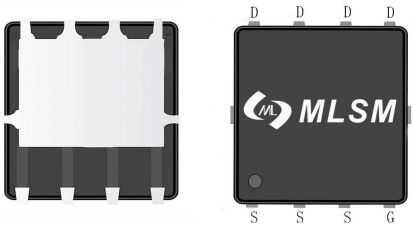
- High density cell design for ultra low RDS(ON)
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high EAS

Product Summary

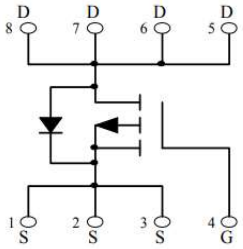
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-30V	10mΩ@-10V	-40A
	14mΩ@-4.5V	

Application

- Battery and loading switching
- Excellent package for good heat dissipation



PDFN3X3-8L view



Schematic diagram

Marking and pin assignment

ME0D40AP : Device code
XXXX : Code

Pb-Free RoHS Halogen-Free

Absolute Maximum Ratings (TA=25℃unless otherwise noted)

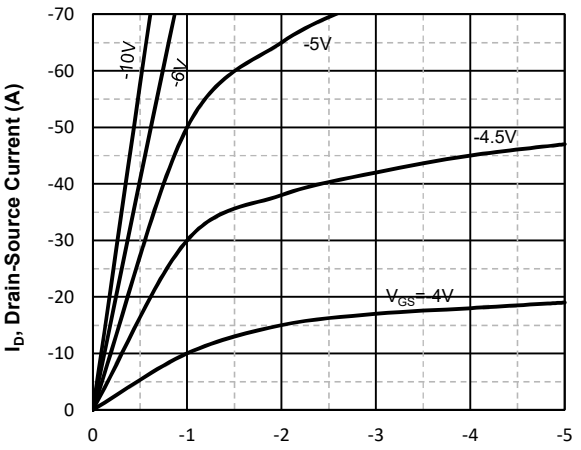
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		-30	V
V_{GS}	Gate-Source Voltage		±20	V
E_{AS}	Single pulse avalanche energy		77	mJ
T_J,T_{STG}	Storage Temperature Range		-55 to 175	°C
I_S	Diode Continuous Forward Current	Tc=25°C	-40	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	Tc=25°C	-180	A
I_D	Continuous Drain Current	Tc=25°C	-40	A
P_D	Maximum Power Dissipation	Tc=25°C	30	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		55	°C/W

Ordering Information (Example)

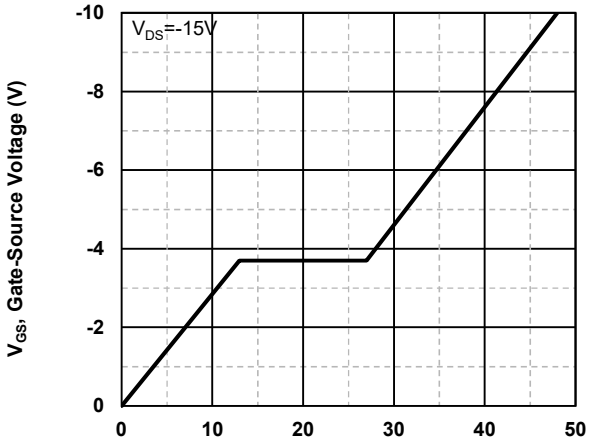
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
ME0D40AP	PDFN3X3-8L	ME0D40AP	5,000	10,000	70,000	13"reel

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	-1.2	-1.5	-2.2	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=-10V, I_D=-15A	--	8.8	10	mΩ
		V_{GS}=-4.5V, I_D=-10A	--	12	14	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	V_{DS}=-15V, V_{GS}=0V, f=1MHz	--	2850	--	pF
C_{OSS}	Output Capacitance		--	410	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	280	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DD}=-15V, I_D=-15A, V_{GS}=-10V	--	48	--	nC
Q_{gs}	Gate Source Charge		--	12	--	nC
Q_{gd}	Gate Drain Charge		--	14	--	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=-15V, I_D=-15A, V_{GS}=-10V, R_G=3Ω	--	15	--	nS
t_r	Turn-on Rise Time		--	11	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	45	--	nS
t_f	Turn-Off Fall Time		--	21	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃, Is=-15A	--	--	-1.2	V

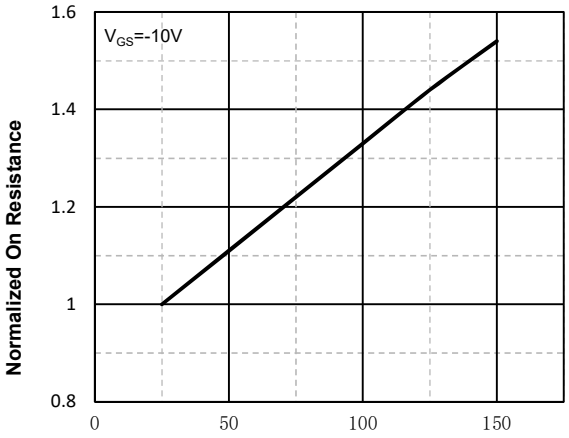
Typical Operating Characteristics



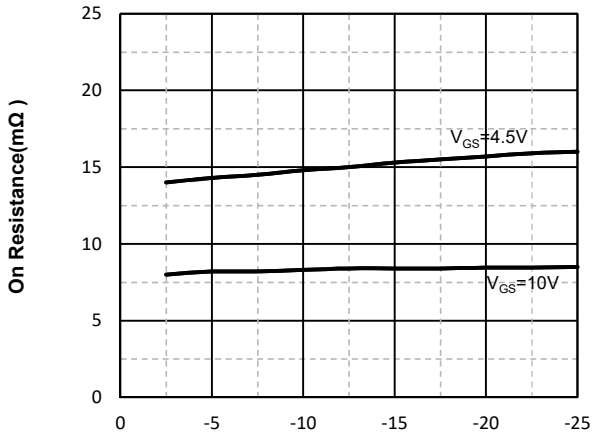
V_{DS}, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



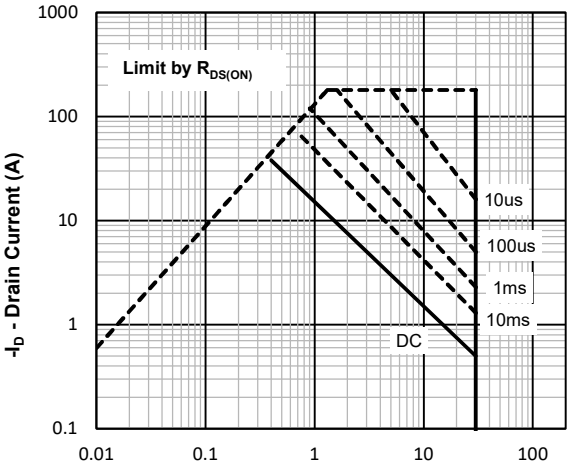
Qg -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs.Gate-Source Voltage



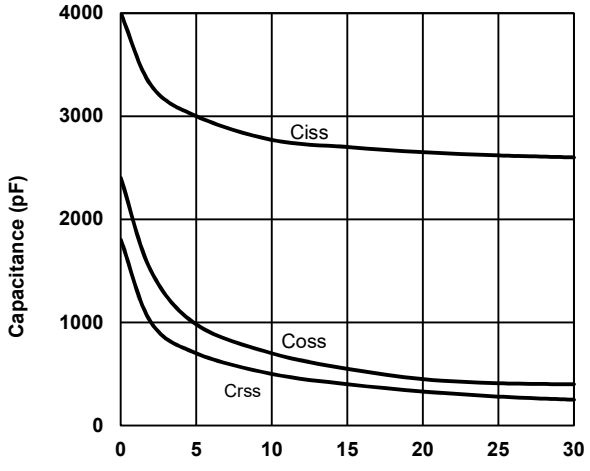
Tj - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



I_D, Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current

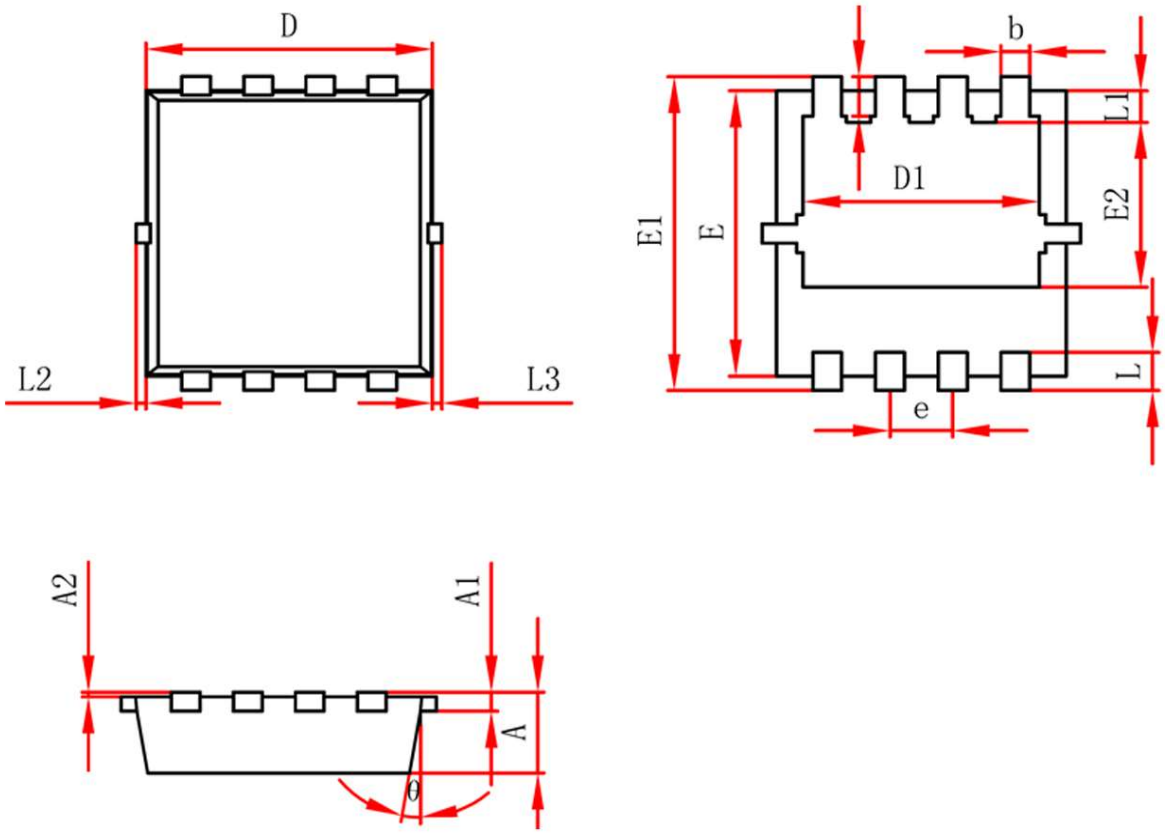


$-V_{DS}$, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



$-V_{DS}$, Drain-Source Voltage (V)
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°