

Features

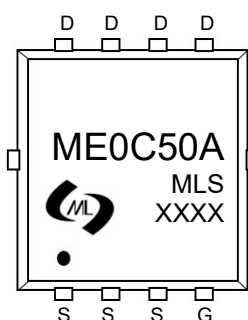
- Trench Power LV MOSFET technology
- High Power and Current handling capability
- Low Gate Charge

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
20V	4.2mΩ@4.5V	50A
	5.7mΩ@2.5V	

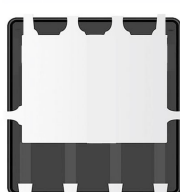
Application

- PWM applications
- Power management
- Load switch

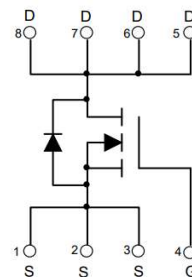


ME0C50A : Device code
 XXXX : Code

Marking and pin assignment



PDFN3X3-8L view



Schematic diagram



Pb-Free



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	20	V
V_{GS}	Gate-Source Voltage	±12	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$ 50	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ 200	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$ 50	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 66	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient	40	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
ME0C50A	PDFN3X3-8L	ME0C50A	5,000	10,000	70,000	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	20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =20V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.4	0.8	1.2	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =30A	--	3.3	4.2	mΩ
		V _{GS} =2.5V, I _D =10A	--	4.5	5.7	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	3174	--	pF
C _{OSS}	Output Capacitance		--	396	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	365	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =30A, V _{GS} =4.5V	--	36	--	nC
Q _{gs}	Gate Source Charge		--	6	--	nC
Q _{gd}	Gate Drain Charge		--	10	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =30A, V _{GS} =4.5V, R _G =3Ω	--	13	--	nS
t _r	Turn-on Rise Time		--	31	--	nS
t _{d(off)}	Turn-Off Delay Time		--	73	--	nS
t _f	Turn-Off Fall Time		--	92	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=30A	--	--	1.2	V

Typical Operating Characteristics

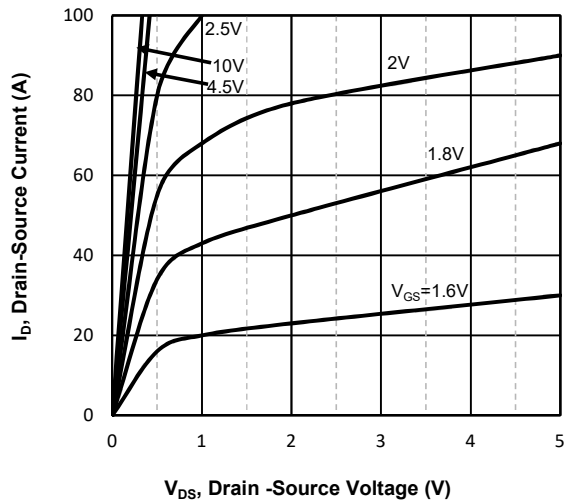


Fig1. Typical Output Characteristics

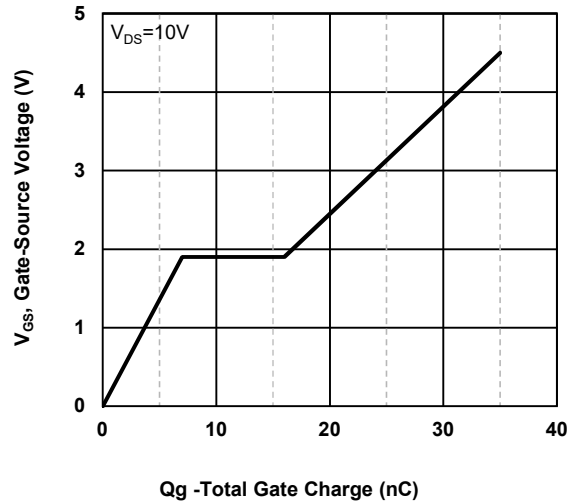


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

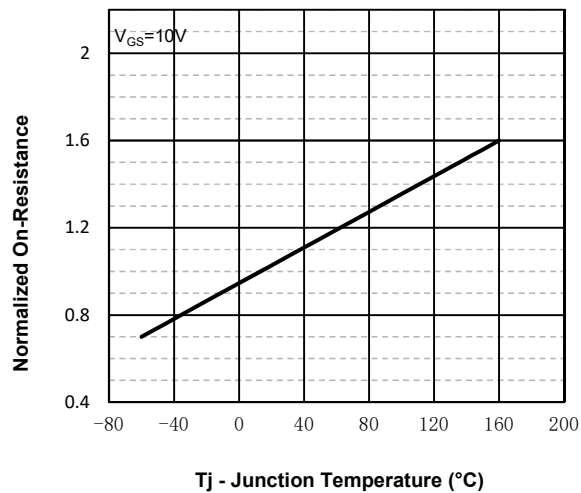


Fig3. Normalized On-Resistance Vs. Temperature

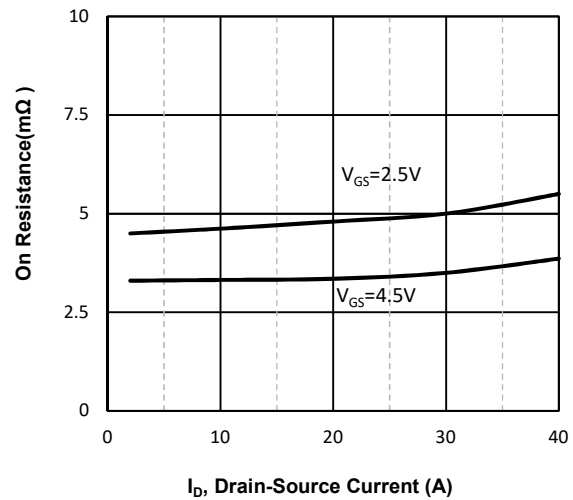


Fig4. On Resistance Vs. Drain-Source Current

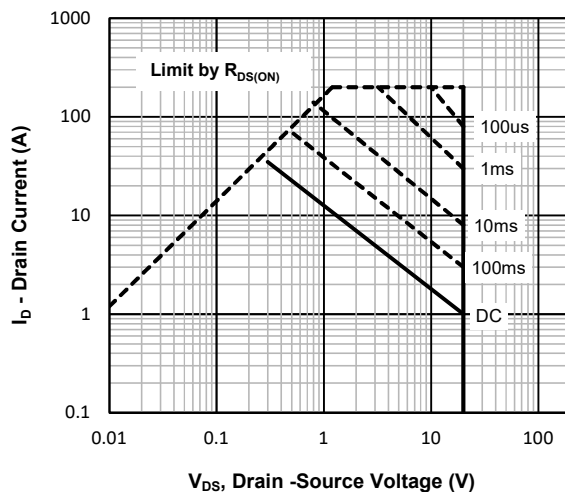


Fig5. Maximum Safe Operating Area

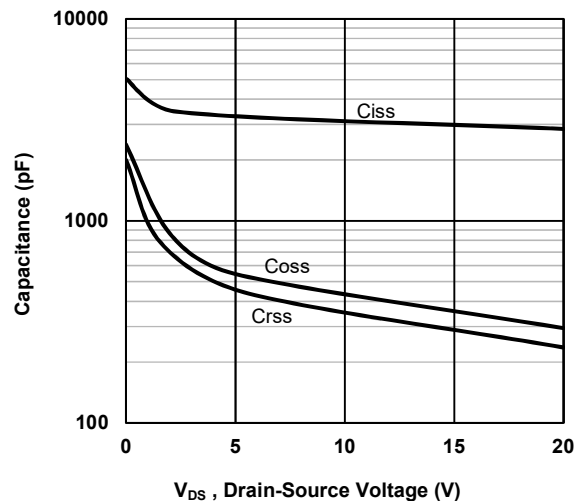
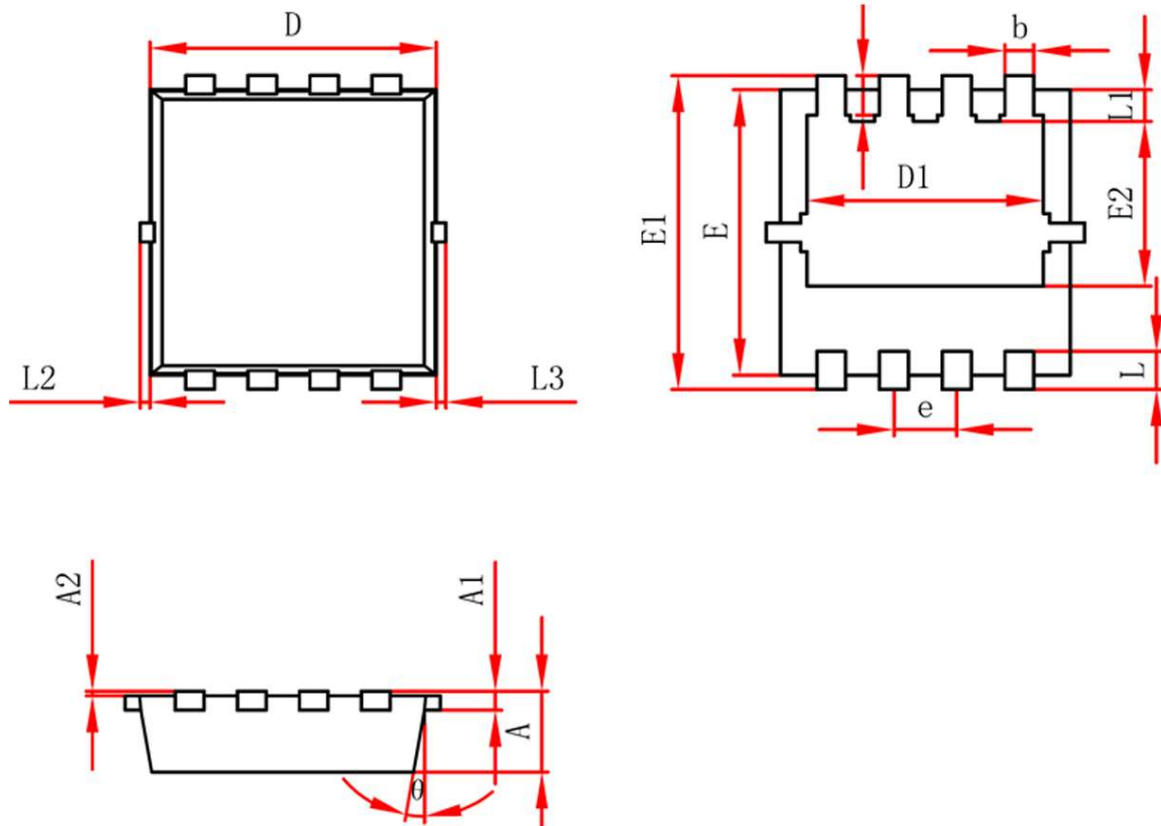


Fig6. Typical Capacitance Vs. Drain-Source Voltage

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°