

Features

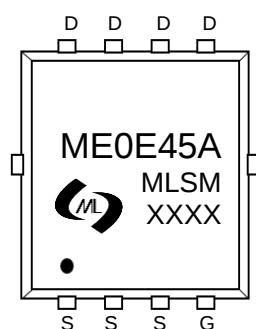
- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Fast switching and soft recovery

Application

- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor

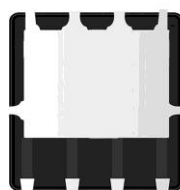
Product Summary

V_{DS}	$R_{DS(on)}$ TYP	I_D
40V	6.5mΩ@10V	45A
	9.0mΩ@4.5V	

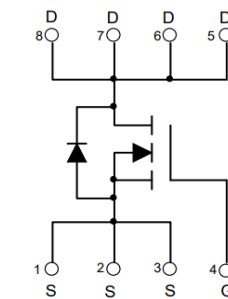


Marking and pin assignment

ME0E45A: Device code
XXXX : Code



PDFN3X3-8L 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, T_{STG}	Operating Junction and Storage Temperature Range	-55 to 175	°C
E_{AS}	Single pulse avalanche energy ^(Note1)	110	mJ
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ 45	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ 225	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$ 45	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 48	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	62.5	°C/W

Ordering Information (Example)

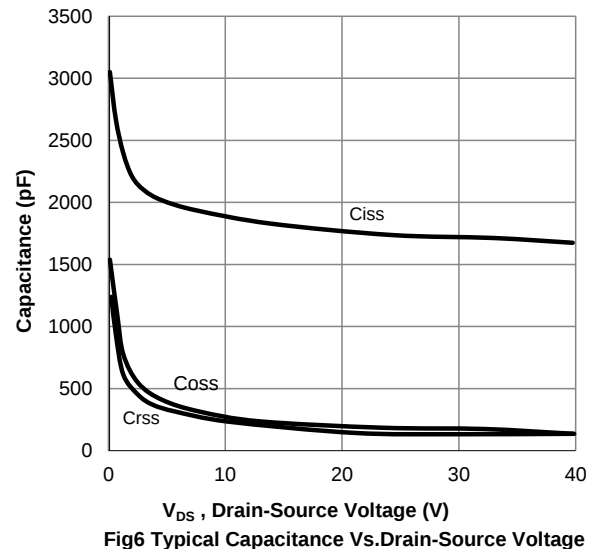
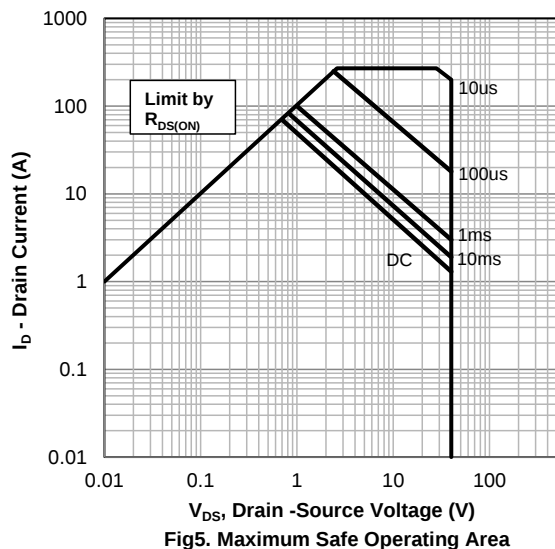
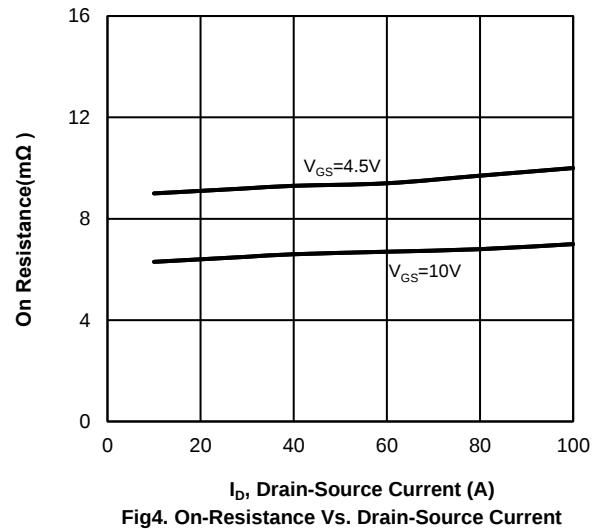
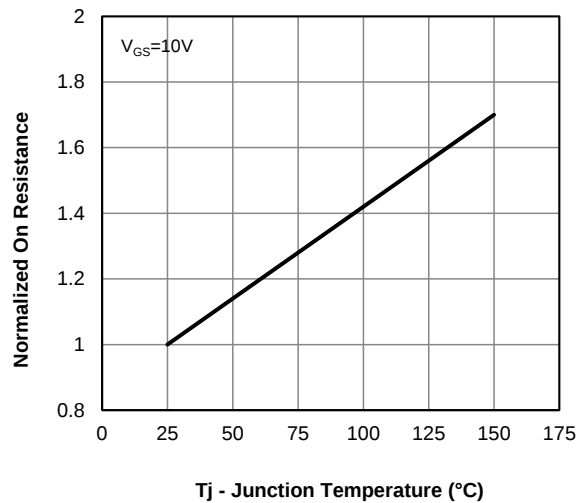
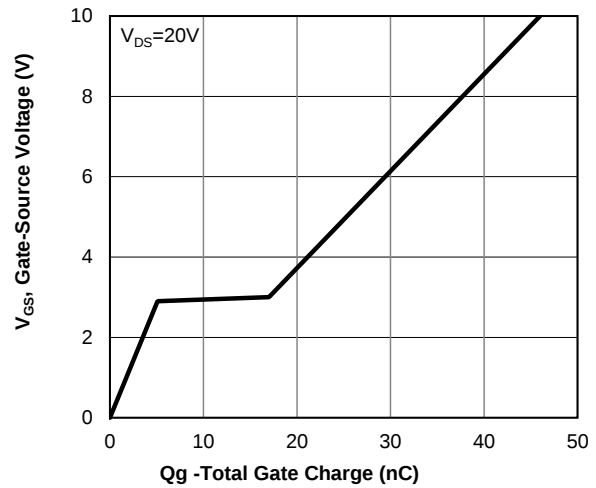
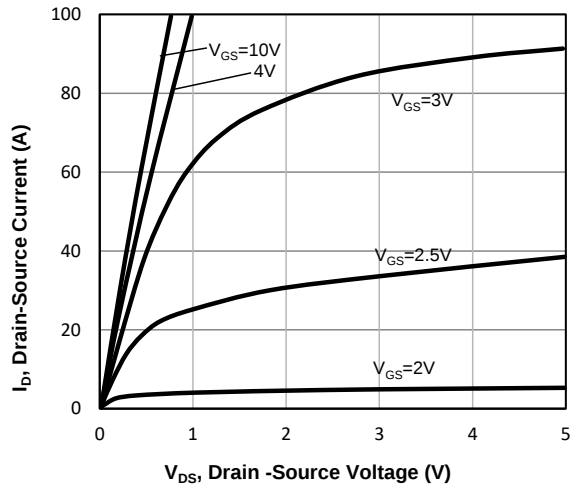
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
ME0E45A	PDFN3X3-8L	ME0E45A	5,000	10,000	70,000	13"reel

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (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	--	--	1.0	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	1.7	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =20A	--	6.5	12	mΩ
		V _{GS} =4.5V, I _D =10A	--	9.0	16	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =20V, V _{GS} =0V, f=1MHz	--	1790	--	pF
C _{OSS}	Output Capacitance		--	211	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	171	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =20V, I _D =20A, V _{GS} =10V	--	46	--	nC
Q _{gs}	Gate Source Charge		--	5.8	--	nC
Q _{gd}	Gate Drain Charge		--	10.6	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =20V, I _D =2A, V _{GS} =10V, R _G =3.0Ω	--	6	--	nS
t _r	Turn-on Rise Time		--	20	--	nS
t _{d(off)}	Turn-Off Delay Time		--	53	--	nS
t _f	Turn-Off Fall Time		--	33	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=40A	--	--	1.2	V

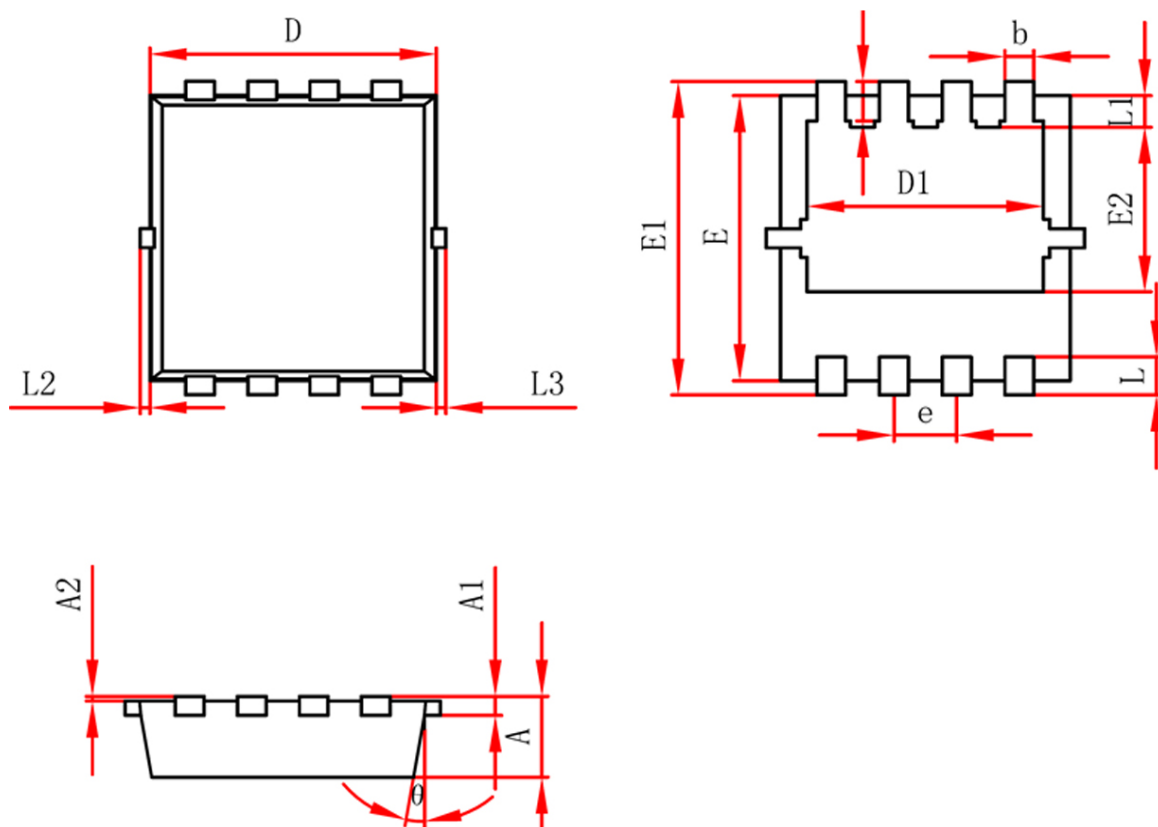
Note:

1、L=0.5mH, $V_{DS}=20V, V_{GS}=10V$, Starting $T_J=25^\circ C$

Typical Operating Characteristics



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°