

Features

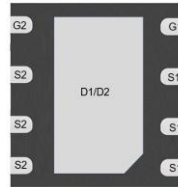
- Advanced high cell density Trench technology
- ESD Rating: $\geq 2000V$ HBM
- Excellent CdV/dt effect decline
- Green Device Available

Application

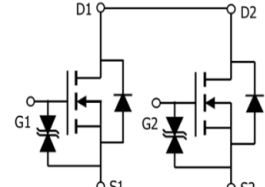
- Battery Protection
- Load Switch

Product Summary

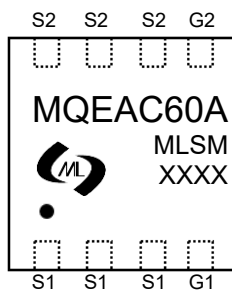
V_{DS}	$R_{DS(ON)}$ TYP	I_D
18V	2.4m Ω @4.5V	60A
	3.4m Ω @2.5V	



DFN3X3-8L view



Schematic diagram



MQEAC60A : Device code
XXXX : Code

Marking and pin assignment



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	18	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	$T_C=25^\circ C$ 60	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ C$ 280	A
I_D	Continuous Drain Current	$T_C=25^\circ C$ 60	A
P_D	Maximum Power Dissipation	$T_C=25^\circ C$ 16.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	45	°C/W

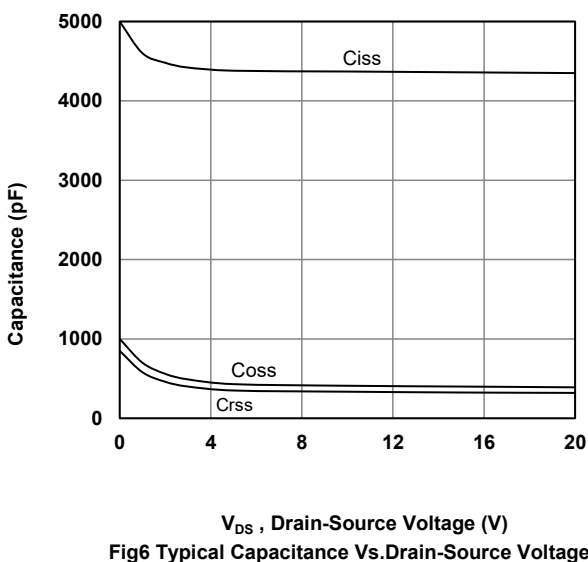
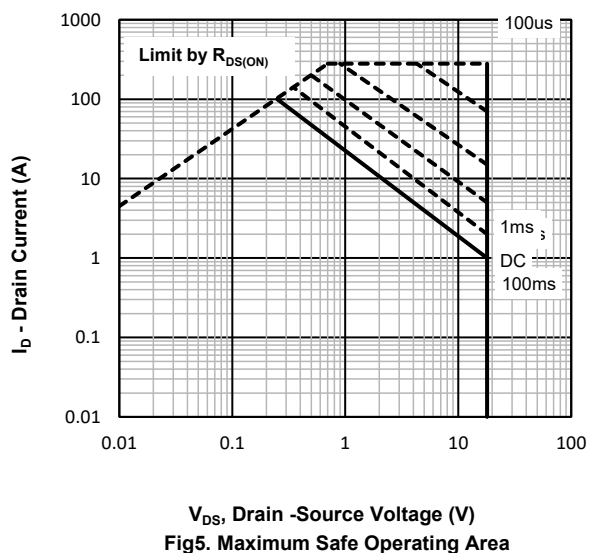
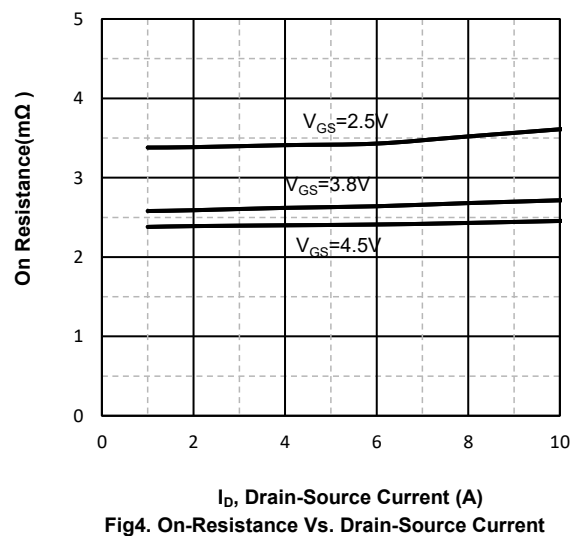
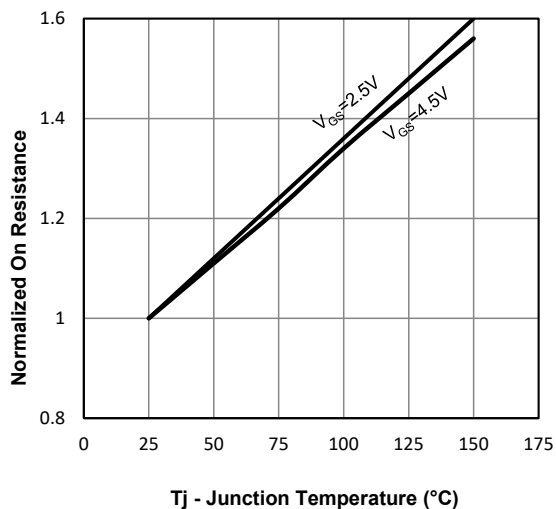
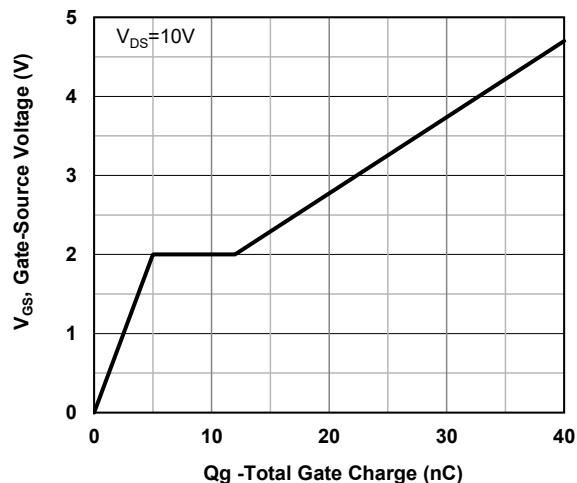
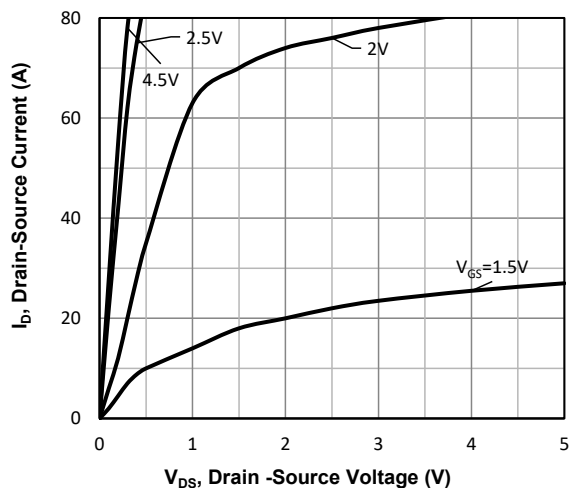
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MQEAC60A	DFN3X3-8L	MQEAC60A	5,000	10,000	70,000	13"reel

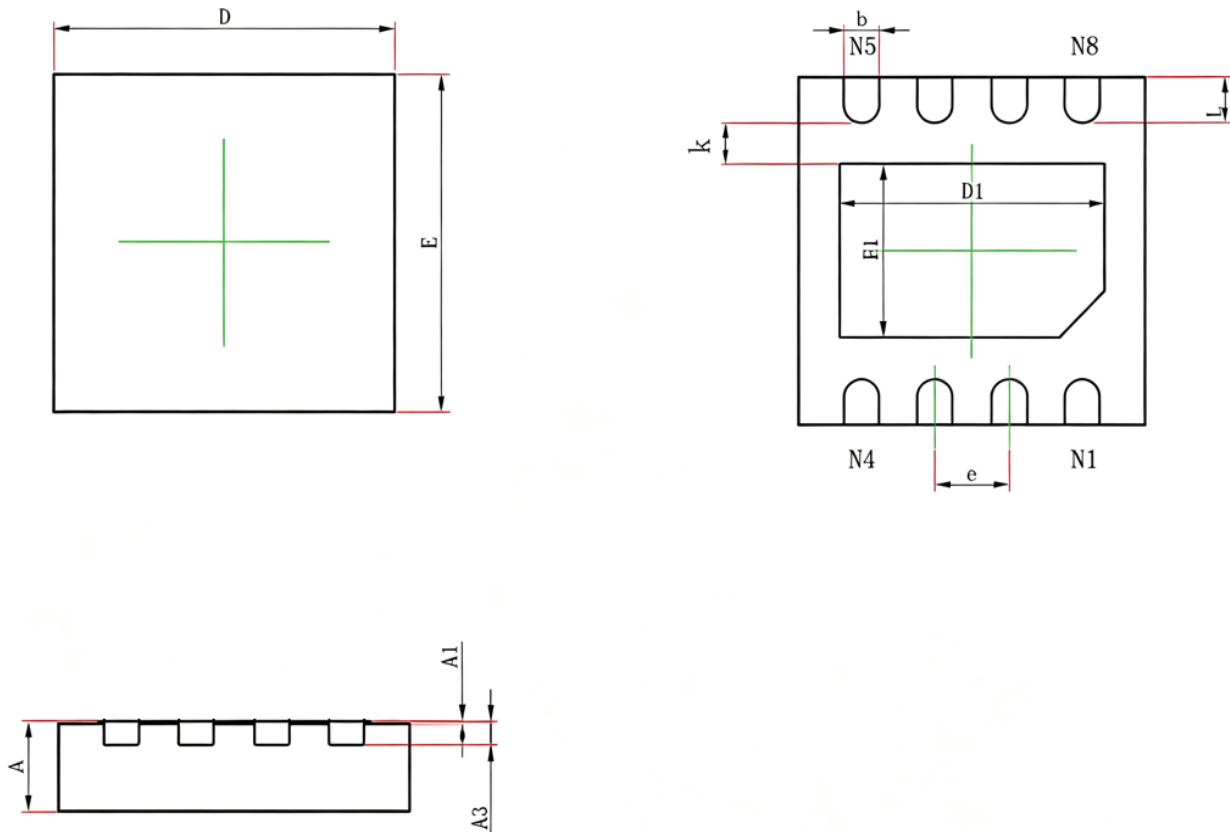
Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	18	20.5	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =16V, V _{GS} =0V	--	--	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	--	--	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.5	0.7	1	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =6A	--	2.4	3	mΩ
		V _{GS} =3.8V, I _D =5A	--	2.8	3.5	mΩ
		V _{GS} =2.5V, I _D =3A	--	3.4	4.5	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	4300	--	pF
C _{OSS}	Output Capacitance		--	430	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	350	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =8A, V _{GS} =4.5V	--	38	--	nC
Q _{gs}	Gate Source Charge		--	5.3	--	nC
Q _{gd}	Gate Drain Charge		--	7.2	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =8A, V _{GS} =4.5V, R _G =3Ω	--	20	--	nS
t _r	Turn-on Rise Time		--	35	--	nS
t _{d(off)}	Turn-Off Delay Time		--	95	--	nS
t _f	Turn-Off Fall Time		--	85	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=1A	--	--	1.2	V

Typical Operating Characteristics



DFN3X3-8L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.800	0.028	0.032
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	2.900	3.100	0.115	0.123
E	2.900	3.100	0.115	0.123
D1	2.200	2.400	0.087	0.095
E1	1.400	1.600	0.055	0.063
b	0.250	0.350	0.010	0.014
k	0.350REF.		0.014REF.	
e	0.650TYP		0.026TYP	
H	0.324	0.476	0.013	0.019