

Features

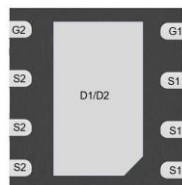
- Advanced high cell density Trench technology
- ESD Rating: $\geq 2000V$ HBM
- Excellent CdV/dt effect decline
- Green Device Available

Application

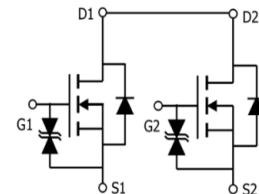
- Battery Protection
- Load Switch

Product Summary

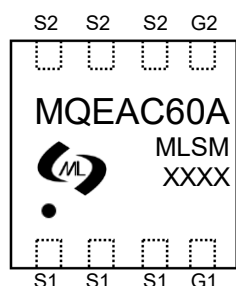
V_{DS}	$R_{DS(ON)}$ TYP	I_D
20V	2.4m Ω @4.5V	60A
	3.4m Ω @2.5V	



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
--------	-----------	--------	------

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	$T_C=25^\circ C$	A

Mounted on Large Heat Sink

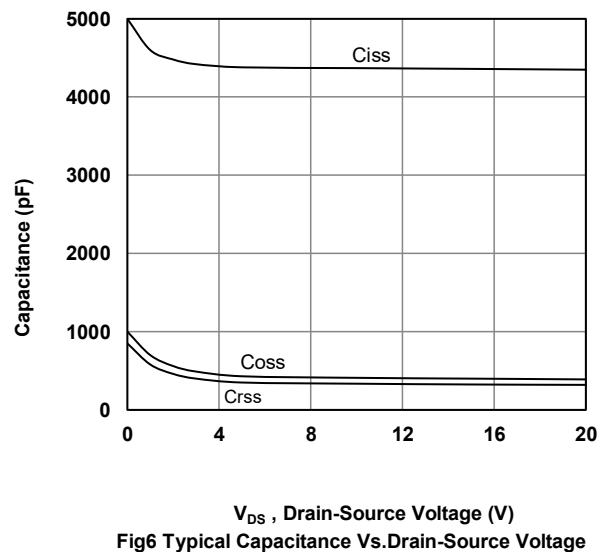
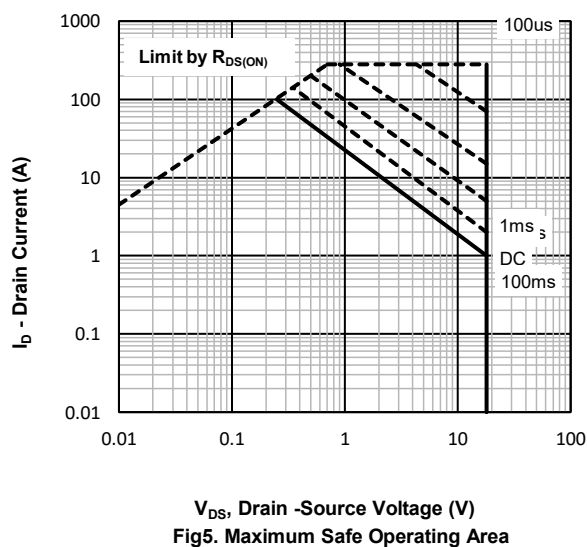
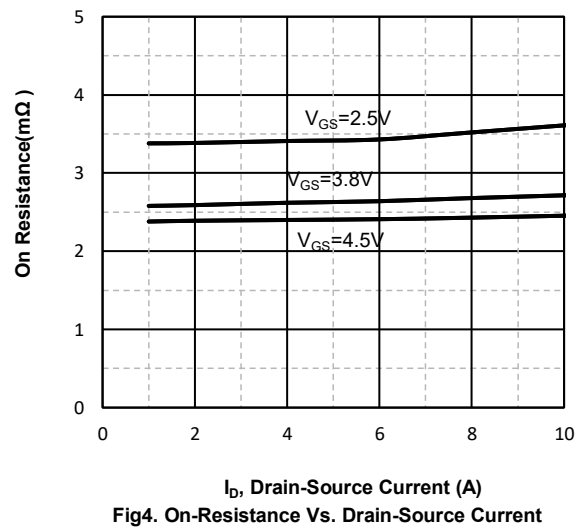
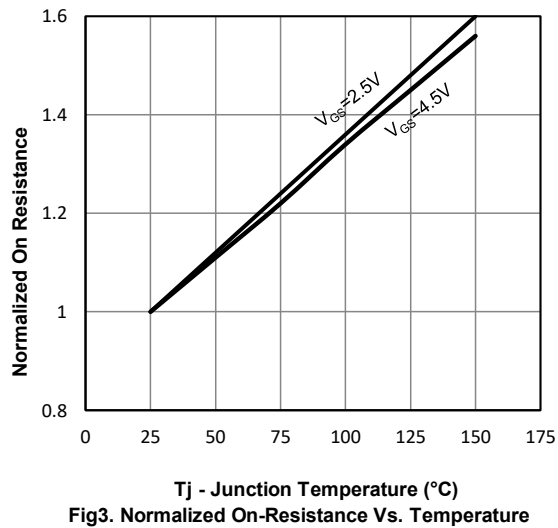
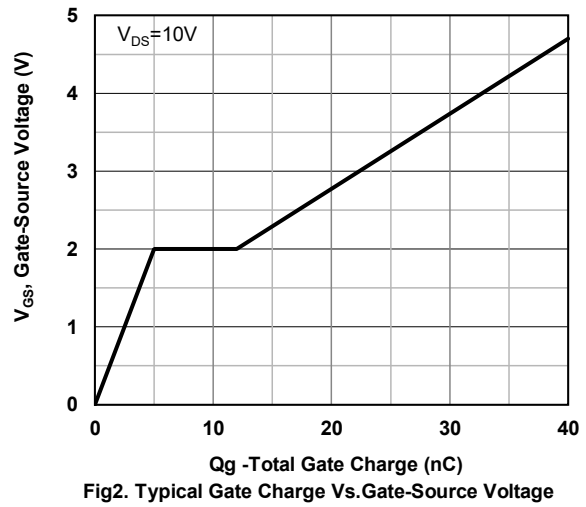
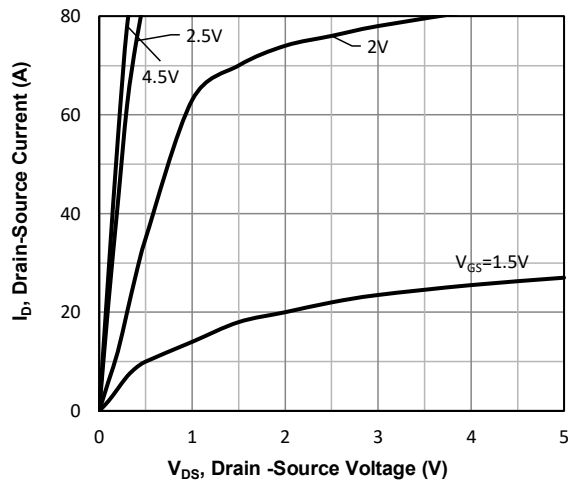
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ C$	280	A
I_D	Continuous Drain Current	$T_C=25^\circ C$	60	A
P_D	Maximum Power Dissipation	$T_C=25^\circ C$	16.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		45	°C/W

Ordering Information (Example)

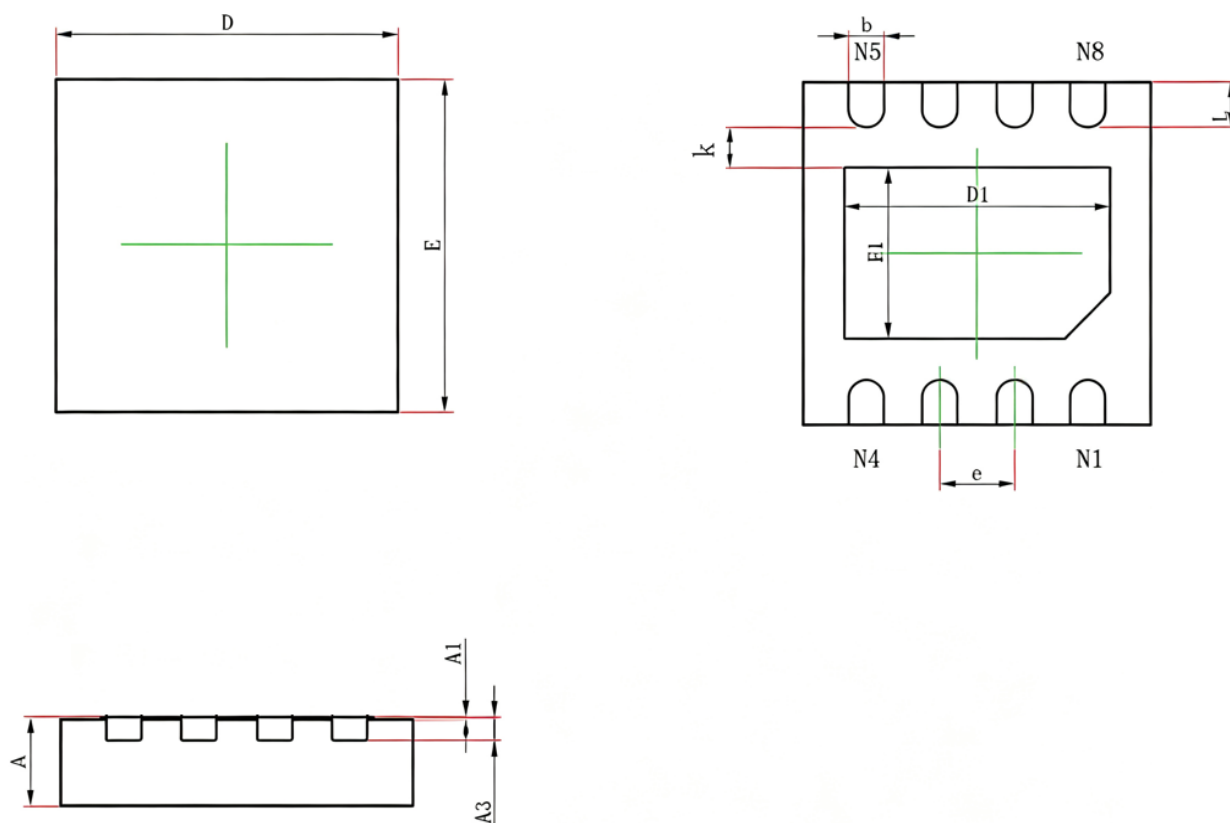
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MQEAC60A	DFN3X3-8L	MQEAC60A	5,000	10,000	70,000	13"reel

Electrical Characteristics (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	VGS=0V, ID=250μA	20	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=20V, VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±12V, VDS=0V	--	--	±10	μA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	0.5	0.7	1	V
RDS(on)	Drain-Source On-State Resistance	VGS=4.5V, ID=6A	--	2.4	3	mΩ
		VGS=3.8V, ID=5A	--	2.8	3.5	mΩ
		VGS=2.5V, ID=3A	--	3.4	4.5	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=10V, VGS=0V, f=1MHz	--	4300	--	pF
COSS	Output Capacitance		--	430	--	pF
CRSS	Reverse Transfer Capacitance		--	350	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=10V, ID=8A, VGS=4.5V	--	38	--	nC
Qgs	Gate Source Charge		--	5.3	--	nC
Qgd	Gate Drain Charge		--	7.2	--	nC
td(on)	Turn-on Delay Time	VDD=10V, ID=8A, VGS=4.5V, RG=3Ω	--	20	--	nS
tr	Turn-on Rise Time		--	35	--	nS
td(off)	Turn-Off Delay Time		--	95	--	nS
tf	Turn-Off Fall Time		--	85	--	nS
Source- Drain Diode Characteristics						
VSD	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