

Features

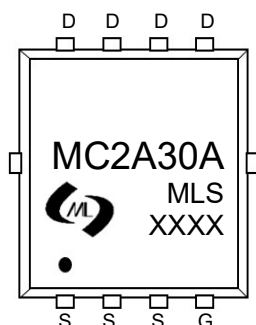
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

Application

- Power switching application
- DC/DC converter

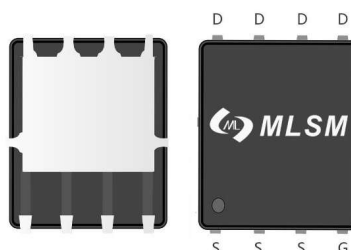
Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
200V	100mΩ@10V	30A
	150mΩ@4.5V	

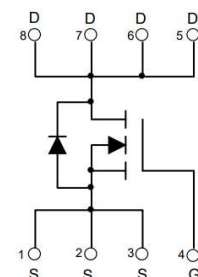


Marking and pin assignment

MC2A30A: Device code
XXXX : Code



PDFN5X6-8L view



Schematic diagram



Pb-Free



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	200	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ 30	A

Mounted on Large Heat Sink

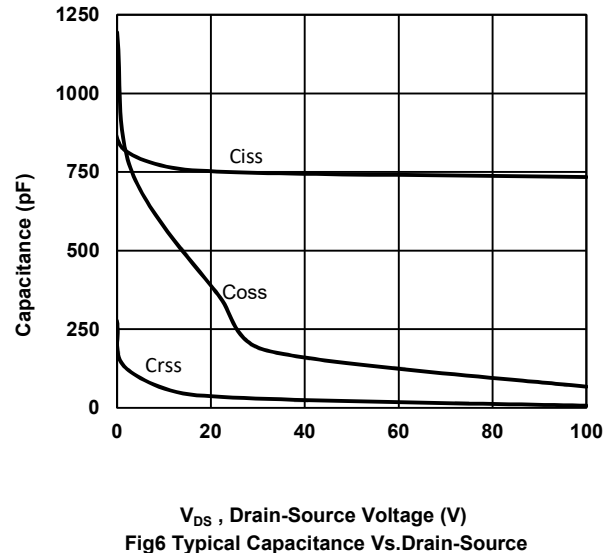
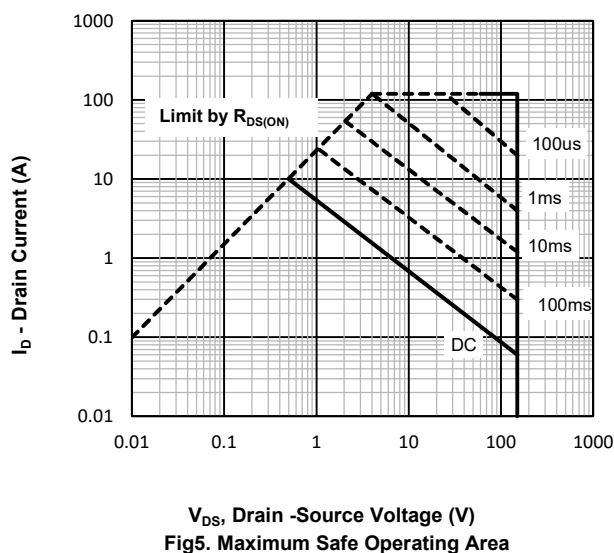
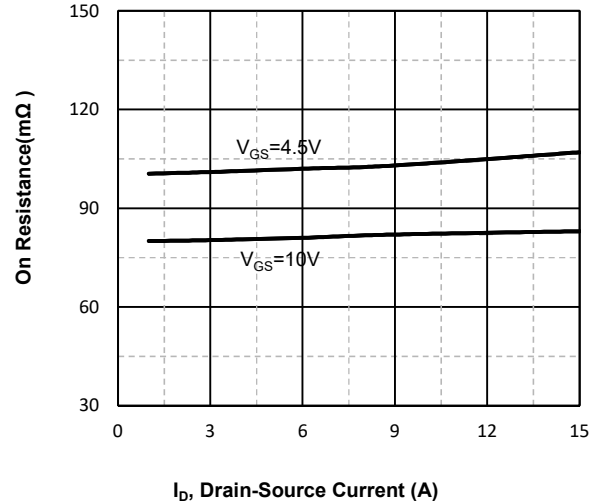
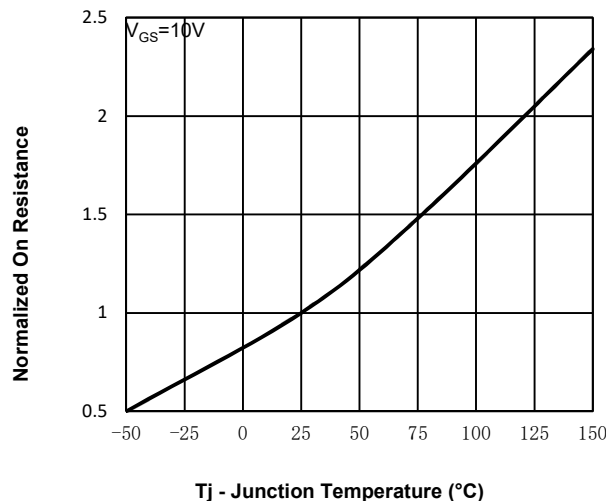
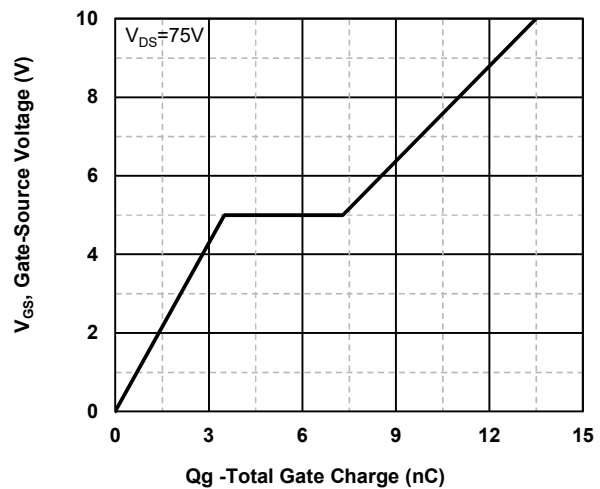
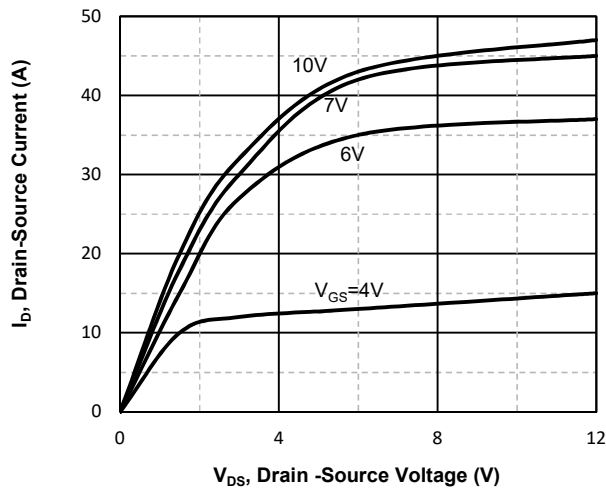
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ 120	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$ 30	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 166	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	45	°C/W

Ordering Information (Example)

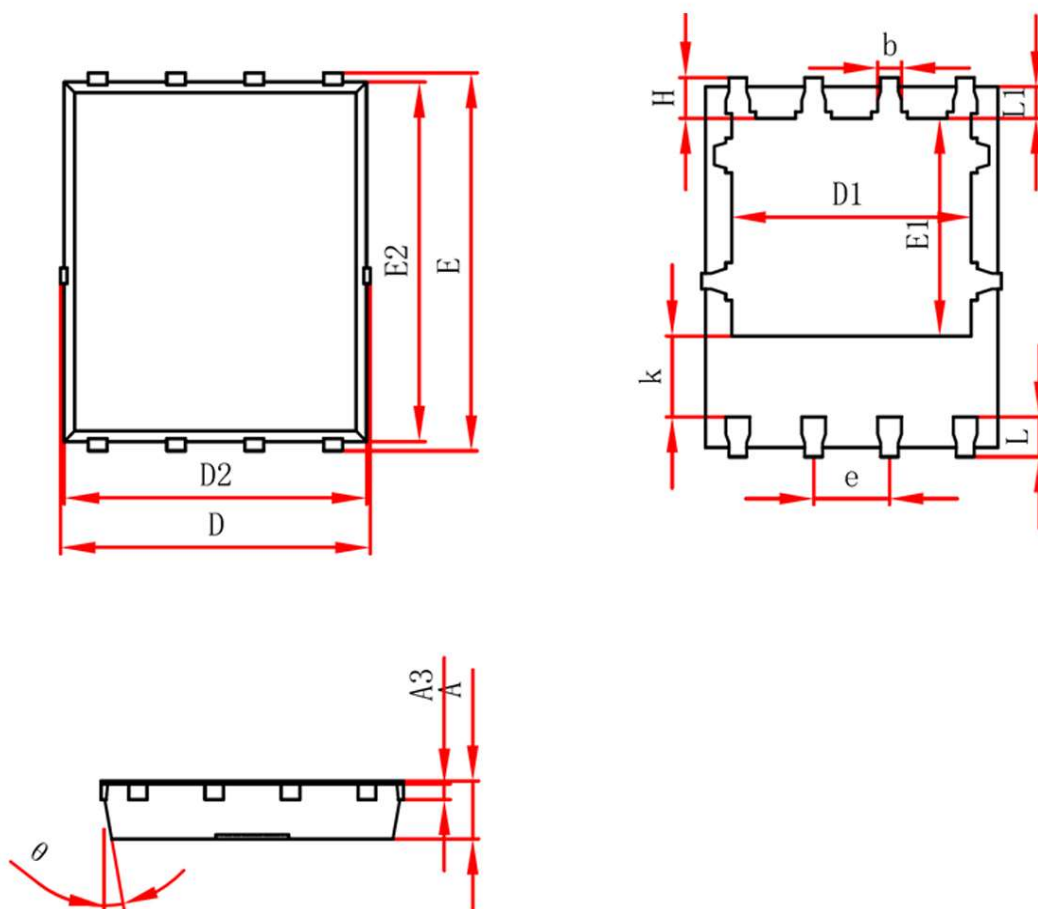
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MC2A30A	PDFN5X6-8L	MC2A30A	5,000	10,000	70,000	13"reel

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	200	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=200V, VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	1	--	3	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=30A	--	80	100	mΩ
		VGS=4.5V, ID=15A	--	100	150	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=100V, VGS=0V, f=1MHz	--	740	--	pF
COSS	Output Capacitance		--	65	--	pF
CRSS	Reverse Transfer Capacitance		--	7	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=100V, ID=15A, VGS=10V	--	14.2	--	nC
Qgs	Gate Source Charge		--	3.8	--	nC
Qgd	Gate Drain Charge		--	3.4	--	nC
t d(on)	Turn-on Delay Time	VDD=100V, ID=15A, VGS=10V, RG=1Ω	--	8	--	nS
t r	Turn-on Rise Time		--	17	--	nS
t d(off)	Turn-Off Delay Time		--	14	--	nS
t f	Turn-Off Fall Time		--	8	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25°C, IS=15A	--	--	1.2	V

Typical Operating Characteristics



PDFN5X6-8L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.950	1.050	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.950	5.050	0.196	0.200
E	5.950	6.050	0.235	0.239
D1	4.026	4.126	0.159	0.163
E1	3.510	3.610	0.139	0.143
D2	4.850	4.950	0.192	0.196
E2	5.700	5.800	0.225	0.229
k	1.190	1.390	0.047	0.055
b	0.300	0.400	0.012	0.016
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°