

### ● General Description

The AGM1075MNA combines advanced trench MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$

This device is ideal for load switch and battery protection applications.

### ● Features

- Advance high cell density Trench technology
- Low  $R_{DS(ON)}$  to minimize conductive loss
- Low Gate Charge for fast switching
- Low Thermal resistance

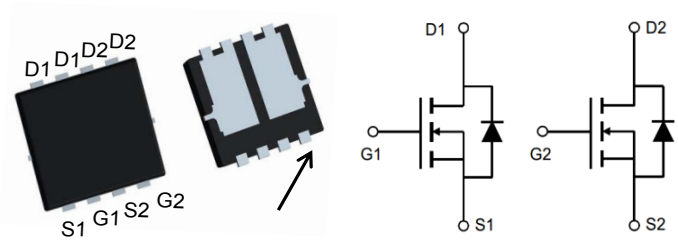
### ● Application

- MB/VGA Vcore
- SMPS 2<sup>nd</sup> Synchronous Rectifier
- POL application
- BLDC Motor driver

### Product Summary

BVDSS	RDSON	ID
100V	65mΩ	16A

### PDFN5\*6 Pin Configuration



### Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM1075MNA	AGM1075MNA	PDFN5*6	330mm	12mm	3000

**Table 1. Absolute Maximum Ratings (TC=25°C)**

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	100	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(Tc=25°C) <b>(Note 1)</b>	16	A
	Drain Current-Continuous(Tc=100°C)	10	A
IDM (pluse)	Drain Current-Continuous@ Current-Pulsed <b>(Note 2)</b>	62	A
PD	Maximum Power Dissipation(Tc=25°C)	35	w
	Maximum Power Dissipation(Tc=100°C)	13	w
EAS	Avalanche energy <b>(Note 3)</b>	10	mJ
TJ,TSTG	Operating Junction and Storage Temperature Range	-55 To 150	°C

**Table 2. Thermal Characteristic**

Symbol	Parameter	Typ	Max	Unit
RθJA	Thermal Resistance Junction-ambient (Steady State) <sup>1</sup>	---	62.5	°C/W
RθJC	Thermal Resistance Junction-Case <sup>1</sup>	---	3.6	°C/W

**Table 3. Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)**

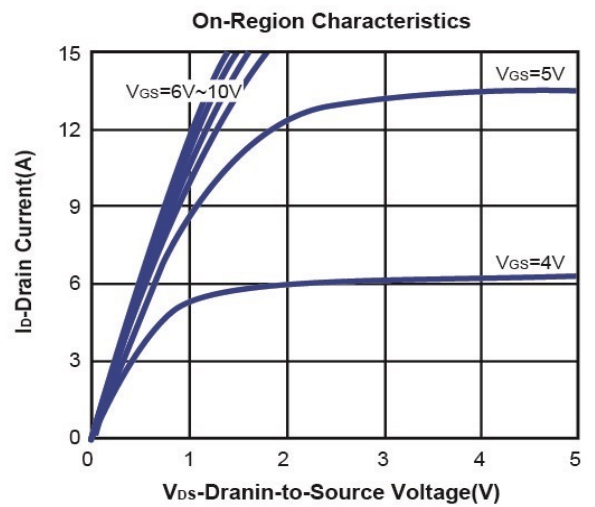
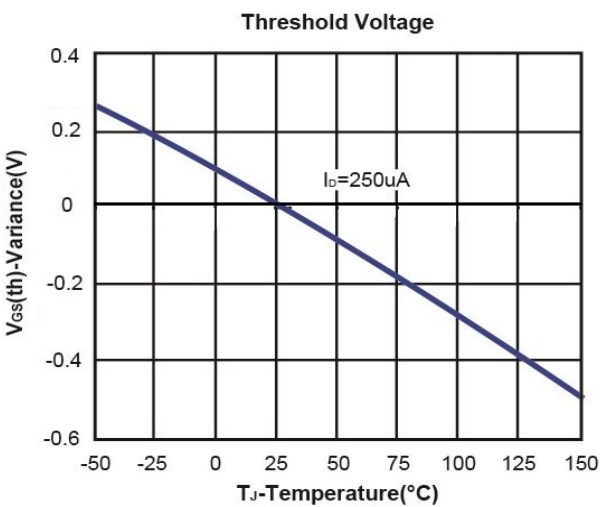
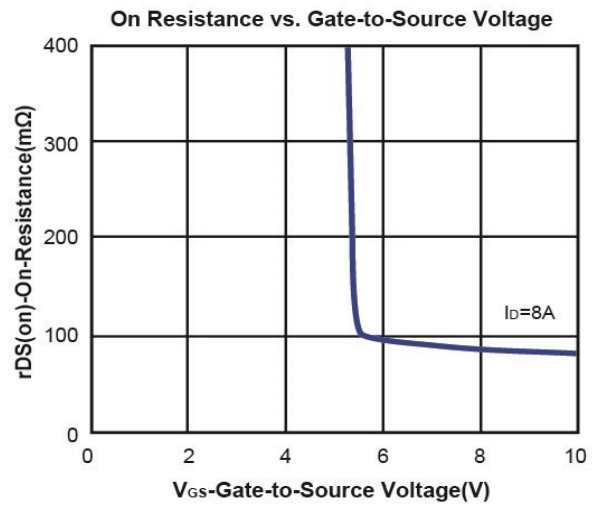
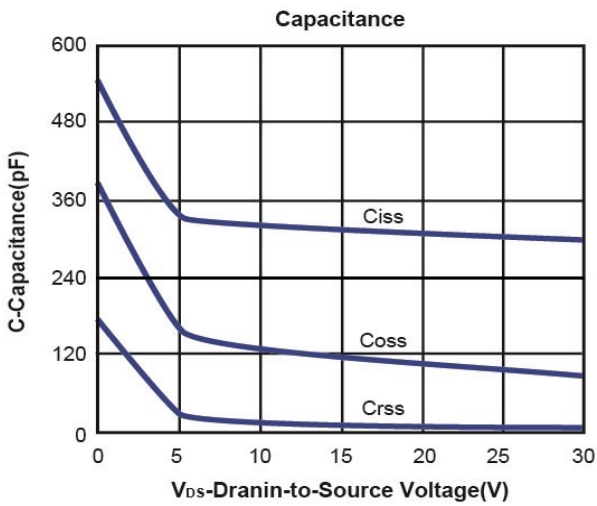
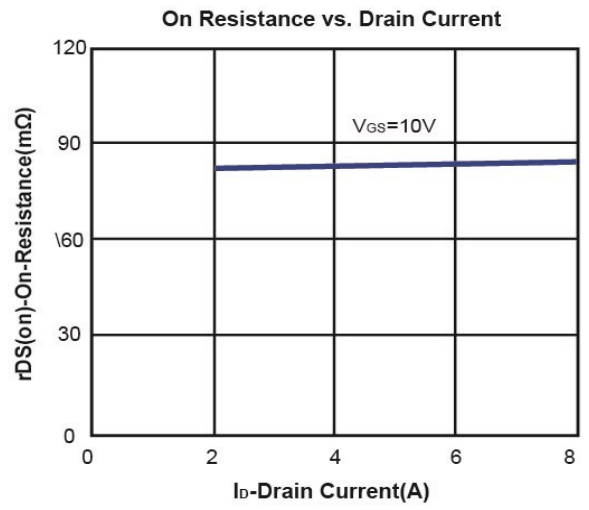
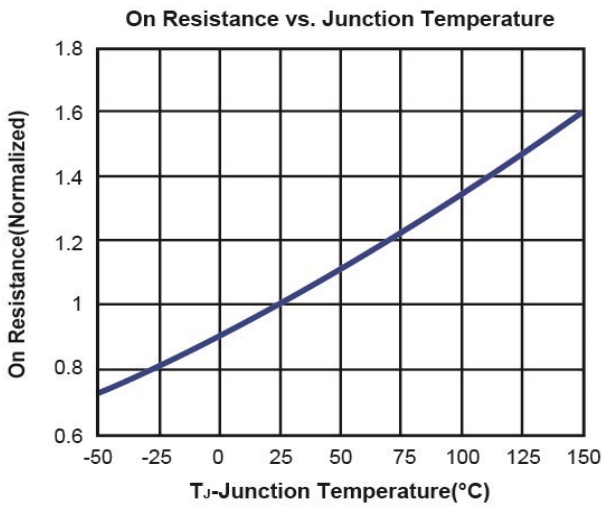
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>On/Off States</b>						
BVDSS	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V ID=250μA	100	--	--	V
IDSS	Zero Gate Voltage Drain Current	V <sub>DS</sub> =100V, V <sub>GS</sub> =0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	--	--	±100	nA
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , ID=250μA	1.2	1.7	2.2	V
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =5V, ID=3A	--	5	--	S
R <sub>DS(on)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =10V, ID=10A	--	65	90	mΩ
		V <sub>GS</sub> =4.5V, ID=3A	--	99	130	mΩ
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =50V, V <sub>GS</sub> =0V, F=1MHZ	--	520	--	pF
C <sub>oss</sub>	Output Capacitance		--	40	--	pF
C <sub>rss</sub>	Reverse Transfer Capacitance		--	2.4	--	pF
R <sub>g</sub>	Gate resistance	f=1.0MHz	--	--	--	Ω
<b>Switching Times</b>						
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, ID=10A, R <sub>GEN</sub> =6Ω	--	16.2	--	nS
t <sub>r</sub>	Turn-on Rise Time		--	3.2	--	nS
t <sub>d(off)</sub>	Turn-Off Delay Time		--	13	--	nS
t <sub>f</sub>	Turn-Off Fall Time		--	22	--	nS
Q <sub>g</sub>	Total Gate Charge	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, ID=12A	--	6	--	nC
Q <sub>gs</sub>	Gate-Source Charge		--	1.1	--	nC
Q <sub>gd</sub>	Gate-Drain Charge		--	1.3	--	nC
<b>Source-Drain Diode Characteristics</b>						
I <sub>SD</sub>	Source-Drain Current(Body Diode)		--	--	16	A
V <sub>SD</sub>	Forward on Voltage	V <sub>GS</sub> =0V, I <sub>S</sub> =10A	--	--	1.0	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>sd</sub> =10A , di/dt=100A/μs , T <sub>J</sub> =25°C	--	45	--	ns
Q <sub>rr</sub>	Reverse Recovery Charge		--	63	--	nc

Notes 1.The maximum current rating is package limited.

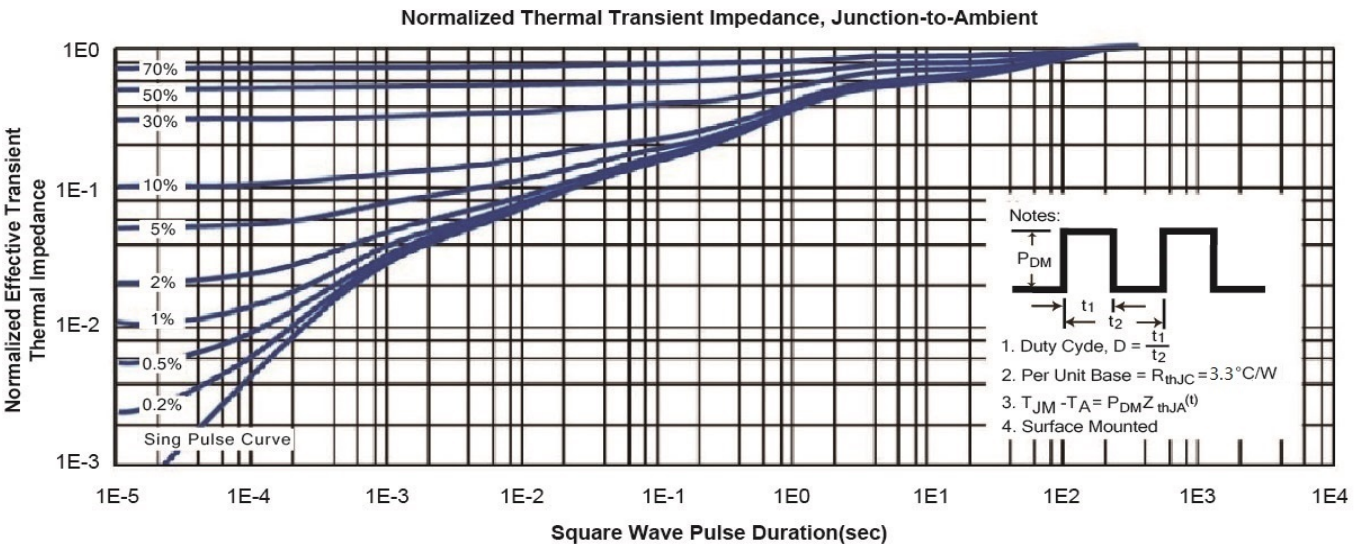
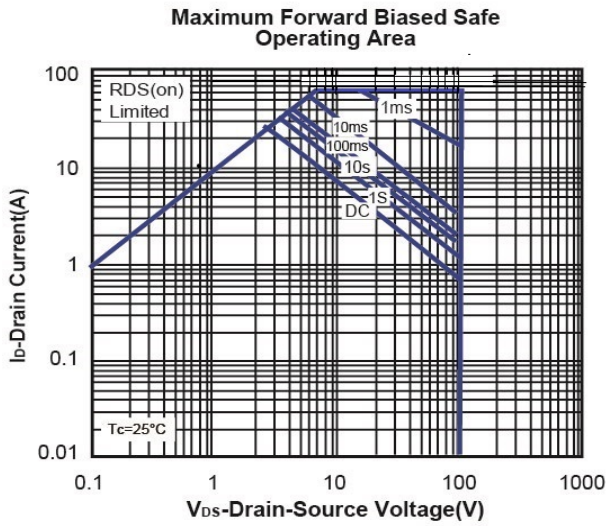
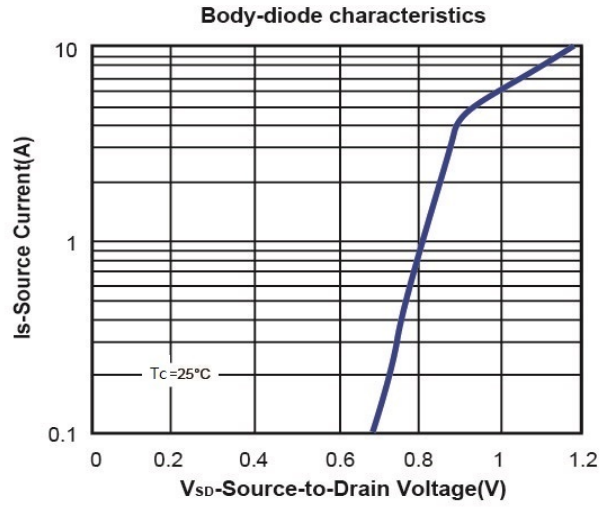
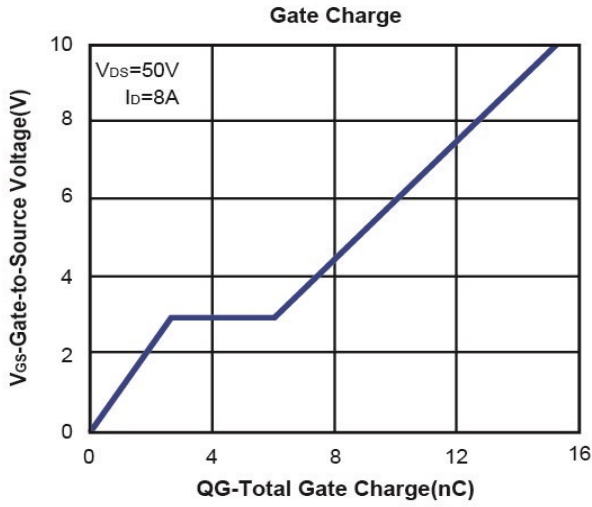
Notes 2.Repetitive Rating: Pulse width limited by maximum junction temperature

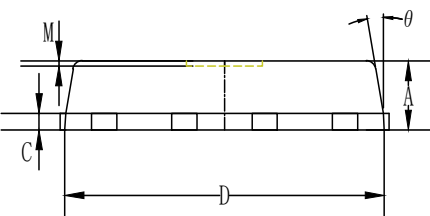
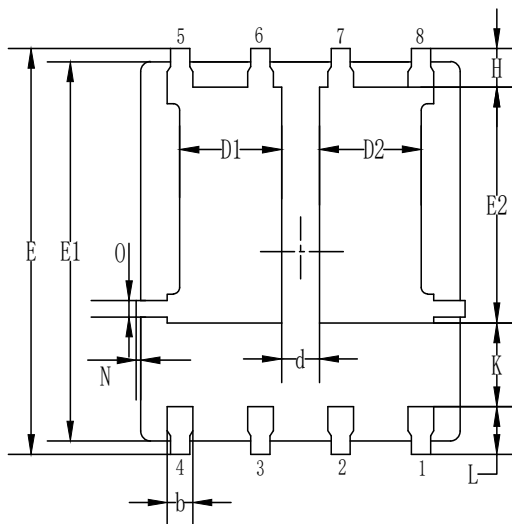
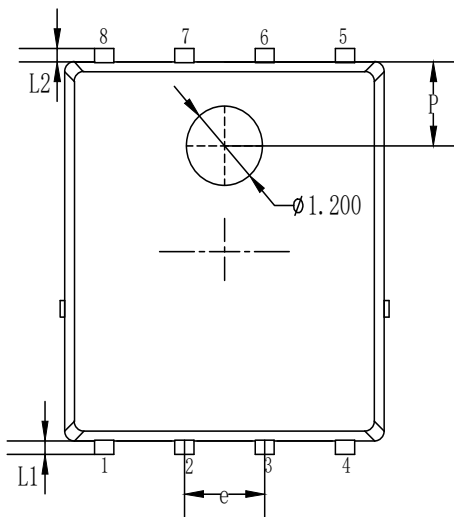
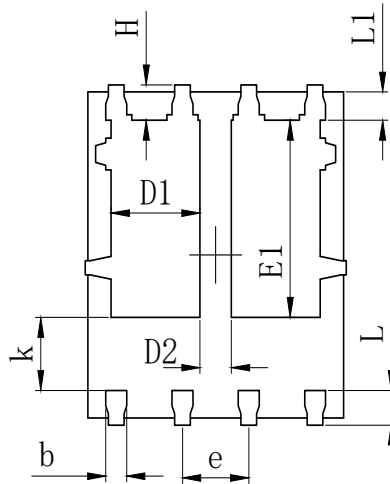
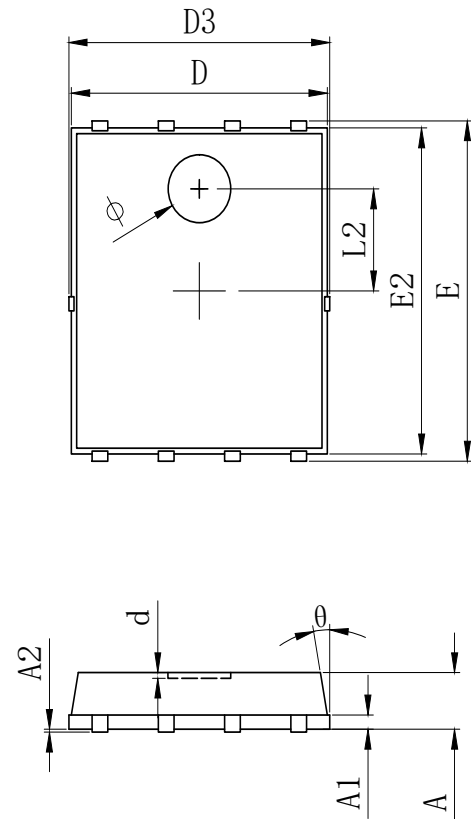
Notes 3.EAS condition: T<sub>J</sub>=25°C

### Typical Characteristics (T<sub>J</sub> =25°C Noted)



### Typical Characteristics (T<sub>J</sub> = 25°C Noted)



**•Dimensions (PDFN5\*6)**


SYMBOL	MILLIMETER		
	MIN	Typ.	MAX
A	0.900	1.000	1.100
A1	0.254 REF.		
A2	0°~0.05		
D	4.824	4.900	4.976
D1	1.605	1.705	1.805
D2	0.500	0.600	0.700
D3	4.924	5.000	5.076
E	5.924	6.000	6.076
E1	3.375	3.475	3.575
E2	5.674	5.750	5.826
b	0.350	0.400	0.450
e	1.270 TYP.		
L	0.534	0.610	0.686
L1	0.424	0.500	0.576
L2	1.800 REF.		
k	1.190	1.290	1.390
H	0.549	0.625	0.701
theta	8°	10°	12°
phi	1.100	1.200	1.300
d			0.100

Symbols	Millimeters		
	MIN.	NOM.	MAX.
A	0.90	1.05	1.20
b	0.35	0.40	0.50
C	0.20	0.25	0.35
D	4.90	5.05	5.20
D1/D2	1.51	1.61	1.71
d	0.50	0.60	0.70
E	6.00	6.15	6.30
E1	5.60	5.75	5.90
E2	3.47	3.57	3.67
e	1.27 BSC.		
H	0.48	0.58	0.68
K	1.17	1.27	1.37
L	0.64	0.74	0.84
L1/L2	0.20 REF.		
theta	8°	10°	12°
M	0.08 REF.		
N	0	-	0.15
O	0.25 REF.		
P	1.28 REF.		


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