

● General Description

The AGM215MNE 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
- 100% Avalanche tested
- 100% DVDS tested
- with ESD

● Application

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

Product Summary

BVDSS	RDSON	ID
19.5V	11mΩ	7.0A

SOT23-6L Pin Configuration

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM215MNE	AGM215MNE	SOT23-6L	178mm	8mm	3000

Table 1. Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage ($V_{GS}=0V$)	19.5	V
V_{GS}	Gate-Source Voltage ($V_{DS}=0V$)	± 10	V
I_D	Drain Current-Continuous($T_A=25^{\circ}\text{C}$) (Note 1)	7	A
	Drain Current-Continuous($T_A=100^{\circ}\text{C}$)	4.3	A
IDM (pluse)	Drain Current-Pulsed (Note 2)	28	A
P_D	Total Power Dissipation($T_A=25^{\circ}\text{C}$)	1.2	W
	Total Power Dissipation($T_A=100^{\circ}\text{C}$)	0.48	W
EAS	Avalanche energy (Note 3)	25	mJ
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	$^{\circ}\text{C}$

Table 2. Thermal Characteristic

Symbol	Parameter	Typ	Max	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (Steady State) ¹	---	105	$^{\circ}\text{C}/\text{W}$

Table 3. N- Channel Electrical Characteristics (T_J=25°C unless otherwise noted)

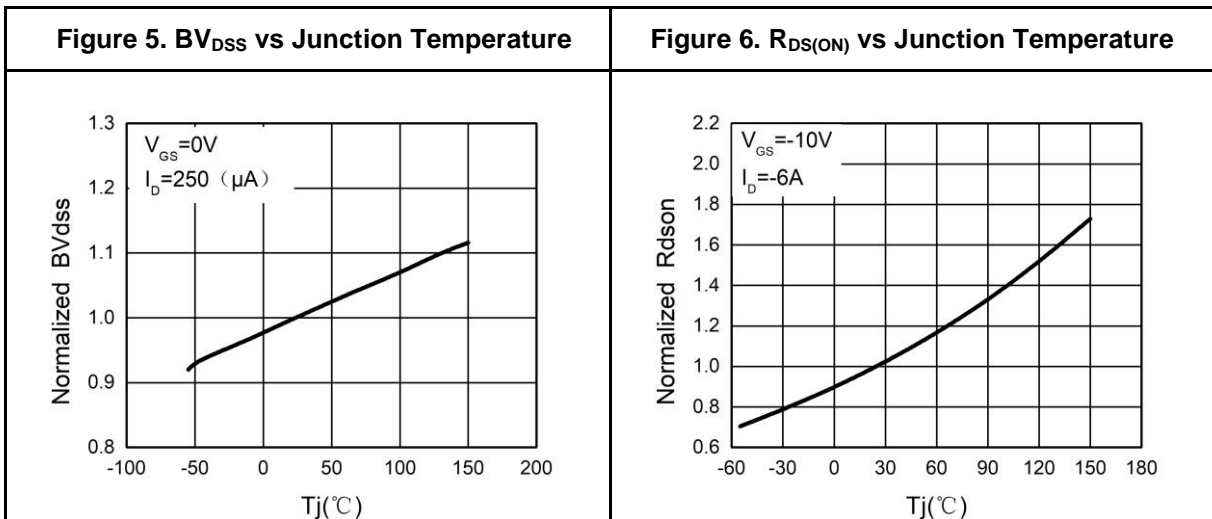
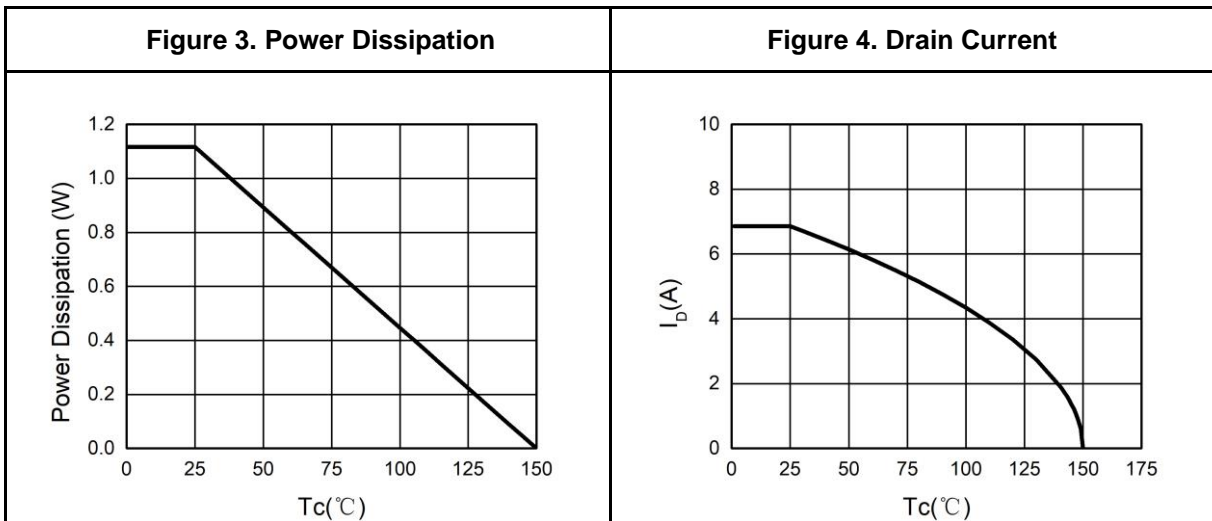
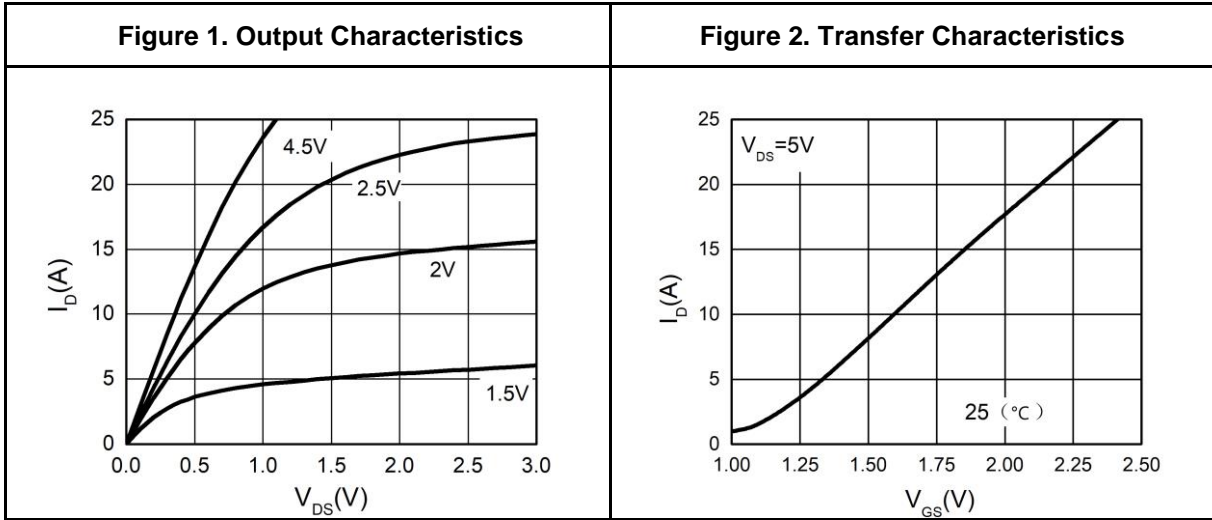
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=250μA	19.5	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=18V,VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±10V,VDS=0V	--	--	±10	uA
VGS(th)	Gate Threshold Voltage	VDS=VGS,ID=250μA	0.5	0.7	1.0	V
gFS	Forward Transconductance	VDS=5V,ID=4A	--	13.6	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=4.5V, ID=5A	--	11	15	mΩ
		VGS=2.5V, ID=4A	--	14	19	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=10V,VGS=0V, F=1MHZ	--	854	--	pF
Coss	Output Capacitance		--	150	--	pF
Crss	Reverse Transfer Capacitance		--	90	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	--	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	VGS=4.5V,VDS=10V RL=2Ω,RGEN=6Ω	--	11	--	nS
tr	Turn-on Rise Time		--	34	--	nS
td(off)	Turn-Off Delay Time		--	55	--	nS
tf	Turn-Off Fall Time		--	51	--	nS
Qg	Total Gate Charge	VGS=4.5V, VDS=10V, ID=5A	--	9.1	--	nC
Qgs	Gate-Source Charge		--	1.6	--	nC
Qgd	Gate-Drain Charge		--	2.0	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	7.0	A
VSD	Forward on Voltage	VGS=0V,IS=5A	--	--	1.2	V
trr	Reverse Recovery Time	IF=5A , dl/dt=100A/μs ,	--	--	--	ns
Qrr	Reverse Recovery Charge	TJ=25°C	--	--	--	nc

Notes 1.The maximum current rating is package limited.

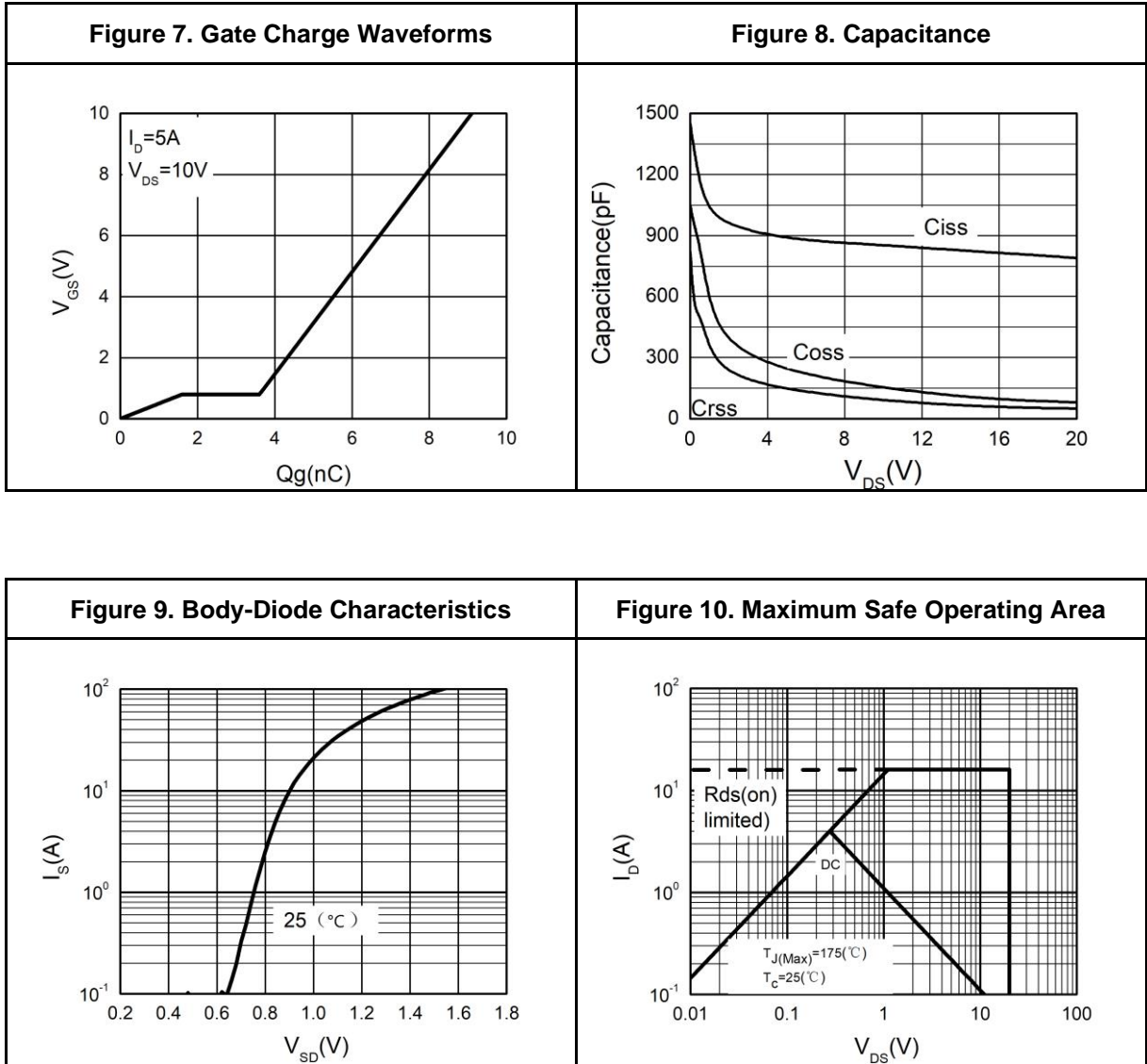
Notes 2.Repetitive Rating: Pulse width limited by maximum junction temperature

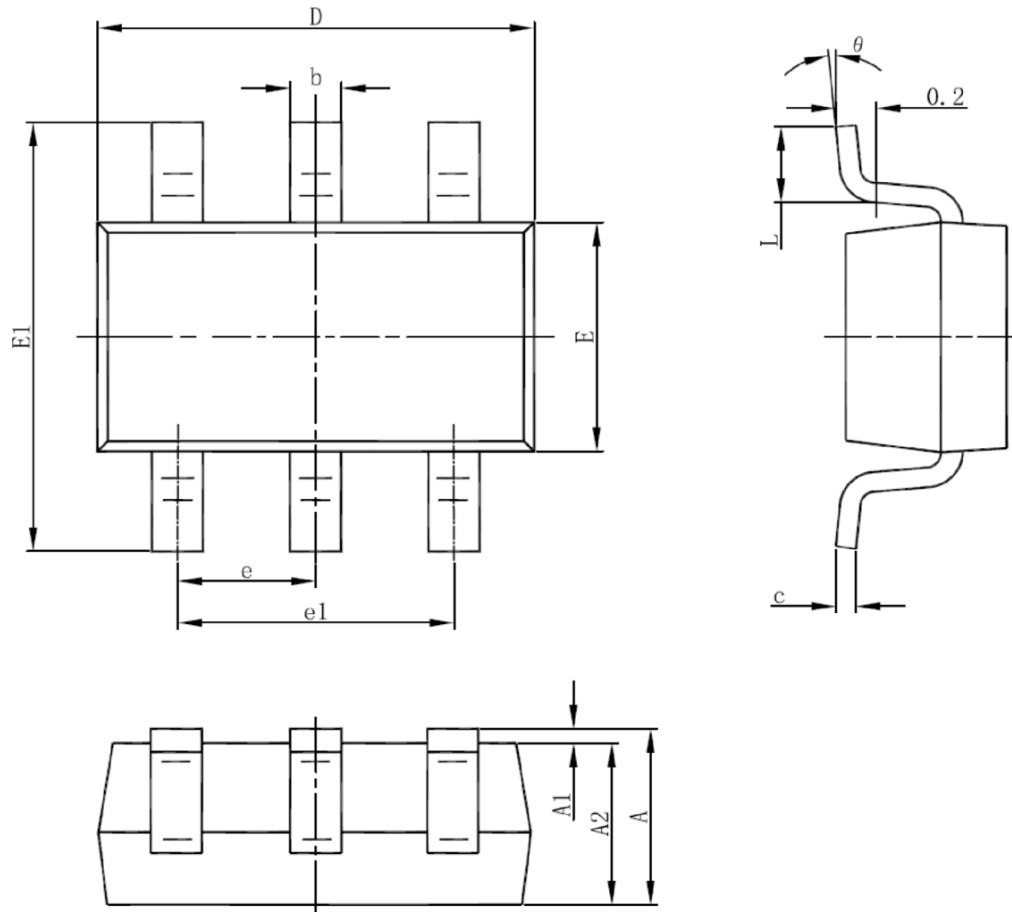
Notes 3.EAS condition: T_J=25°C

Typical Electrical And Thermal Characteristics (Curves)



Typical Electrical And Thermal Characteristics (Curves)



Package Mechanical Data-SOT23-6L


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°


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