

● General Description

The AGM3015H 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

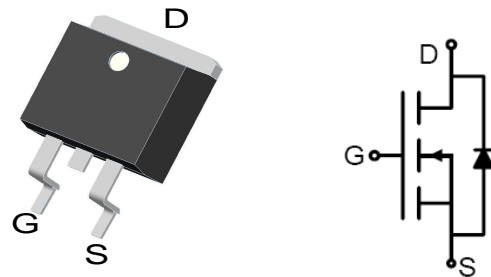
● Application

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

Product Summary

BVDSS	RDSON	ID
30V	1.5mΩ	230A

TO-263 Pin Configuration



Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM3015H	AGM3015H	TO-263	----	----	800

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

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	30	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(Tc=25°C) (Note 1)	230	A
	Drain Current-Continuous(Tc=100°C)	145	A
IDM (pluse)	Drain Current-Continuous@ Current-Pulsed (Note 2)	920	A
PD	Maximum Power Dissipation(Tc=25°C)	58	w
	Maximum Power Dissipation(Tc=100°C)	23	w
EAS	Avalanche energy (Note 3)	576	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) ¹	---	--	°C/W
RθJC	Thermal Resistance Junction-Case ¹	---	2.15	°C/W

Table 3. Electrical Characteristics (TC=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=250μA	30	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=30V,VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS,ID=250μA	1.0	1.7	2.5	V
gFS	Forward Transconductance	VDS=5V,ID=20A	--	39	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=20A	--	1.5	1.8	mΩ
		VGS=4.5V, ID=20A	--	2.4	3.1	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=15V,VGS=0V, F=1MHZ	--	6536	--	pF
Coss	Output Capacitance		--	761	--	pF
Crss	Reverse Transfer Capacitance		--	461	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	0.6	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	VGS=10V,VDS=15V, RGEN=3Ω, RL=0.75Ω	--	21	--	nS
tr	Turn-on Rise Time		--	18	--	nS
td(off)	Turn-Off Delay Time		--	64	--	nS
tf	Turn-Off Fall Time		--	16.5	--	nS
Qg	Total Gate Charge	VGS=10V, VDS=10V, ID=20A	--	115	--	nC
Qgs	Gate-Source Charge		--	15.4	--	nC
Qgd	Gate-Drain Charge		--	27.2	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	230	A
VSD	Forward on Voltage	VGS=0V,IS=20A	--	--	1.2	V
trr	Reverse Recovery Time	IF=20A dl/dt=100A/μs ,	--	33	--	ns
Qrr	Reverse Recovery Charge	TJ=25°C	--	29	--	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: TJ=25°C

Typical Electrical And Thermal Characteristics (Curves)

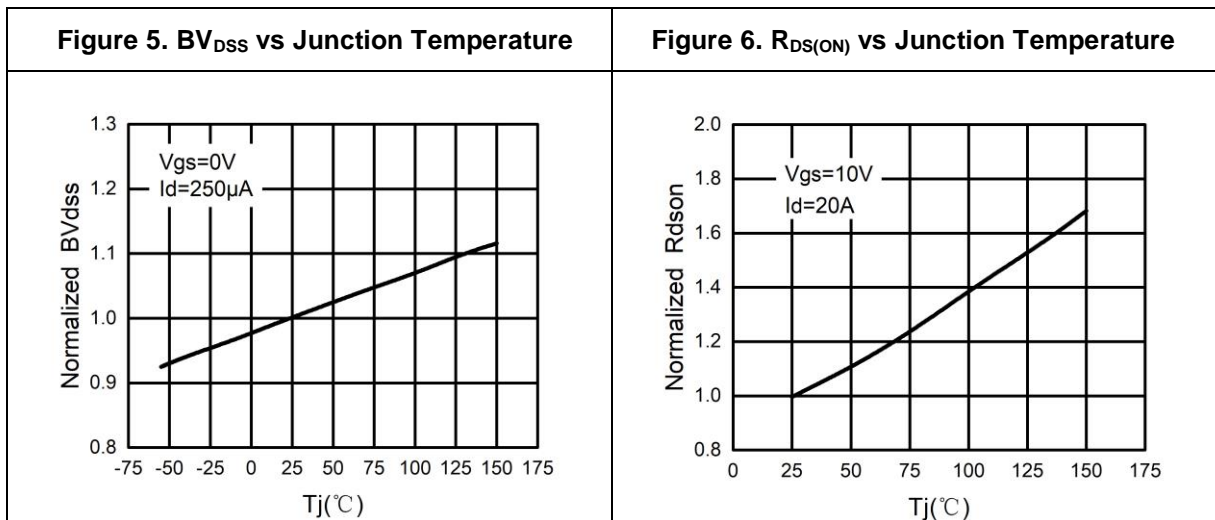
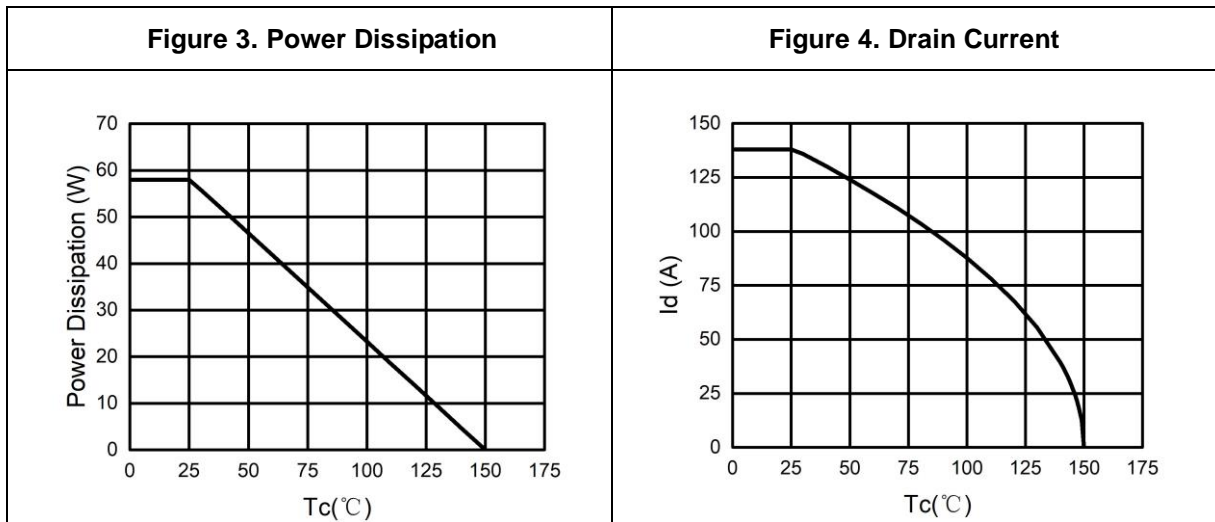
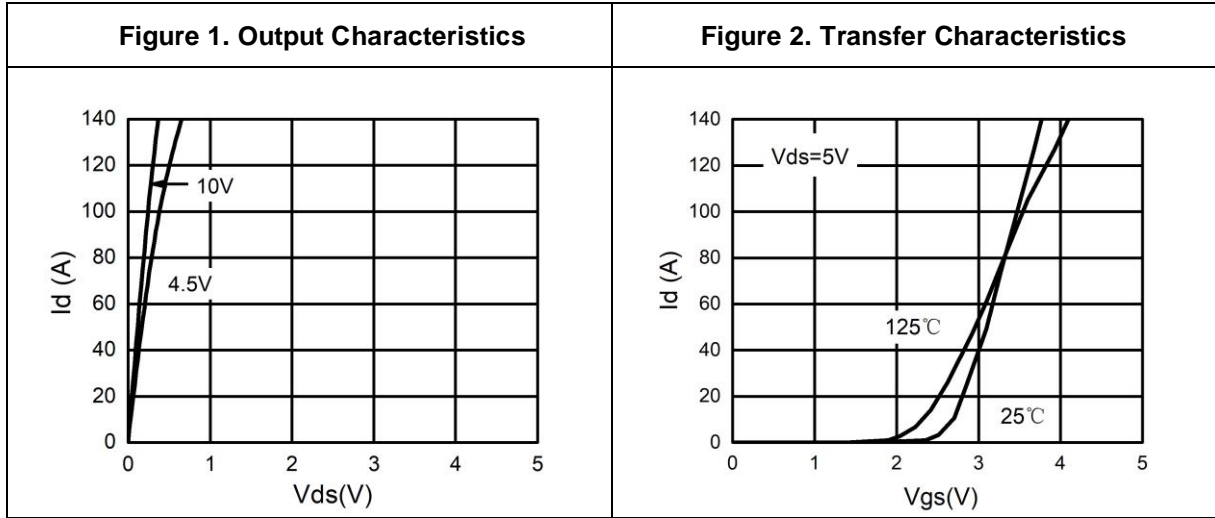
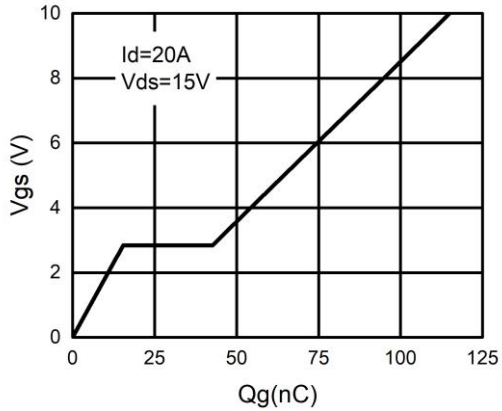
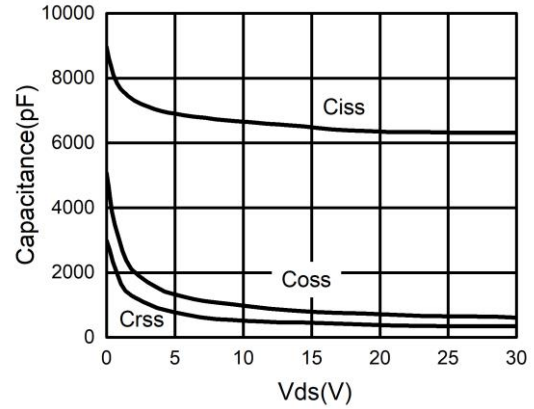
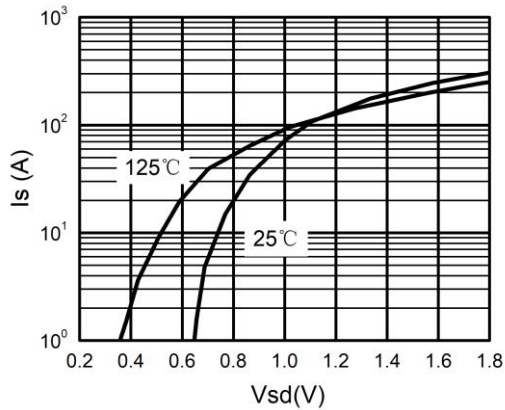
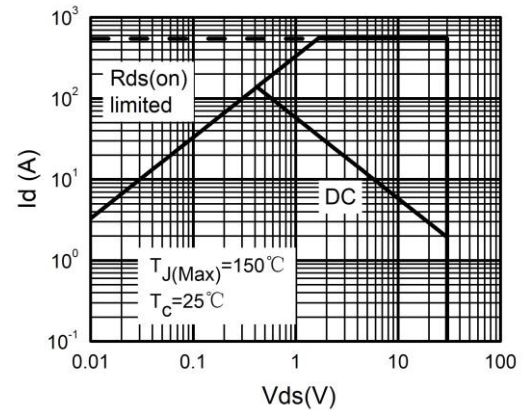
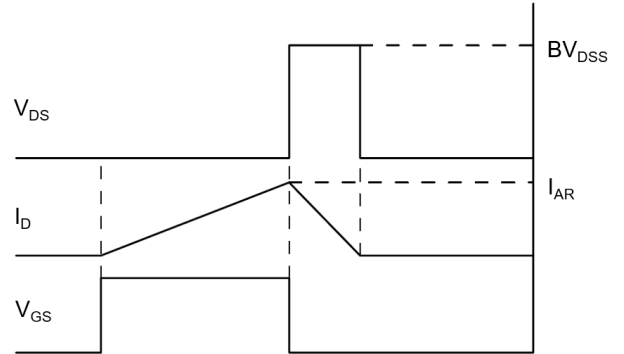
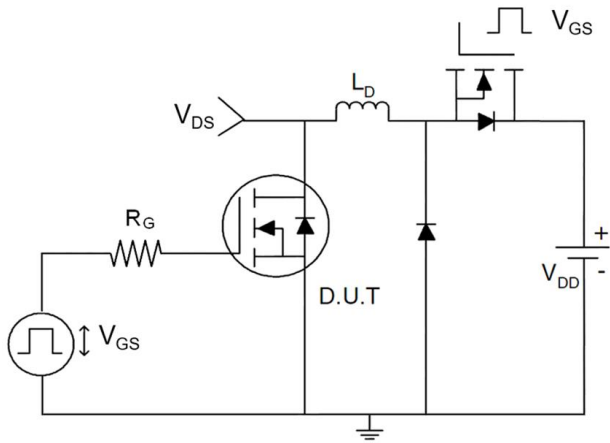


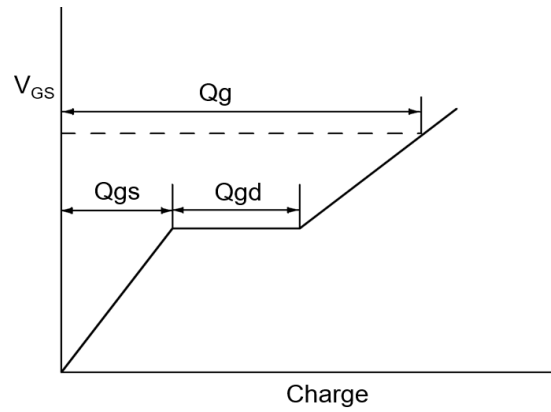
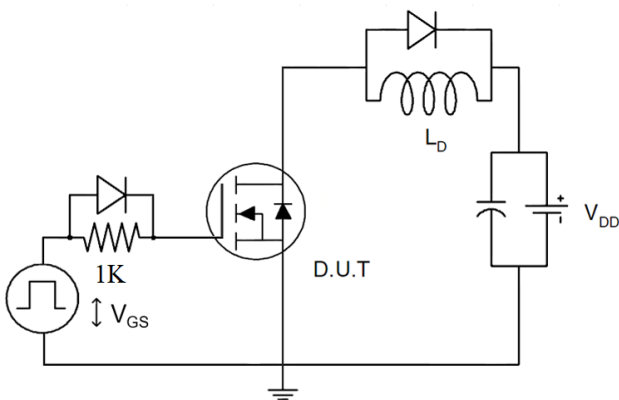
Figure 7. Gate Charge Waveforms

Figure 8. Capacitance

Figure 9. Body-Diode Characteristics

Figure 10. Maximum Safe Operating Area


Test Circuit

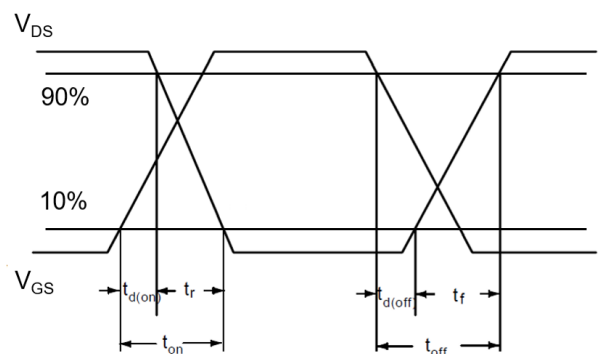
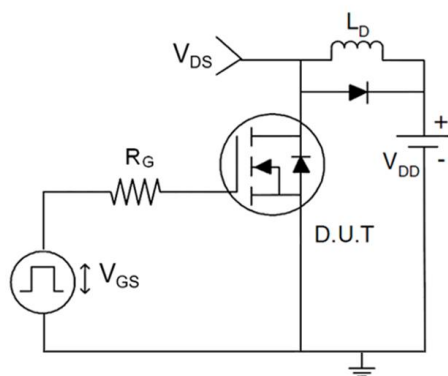
1) E_{AS} Test Circuits



2) Gate Charge Test Circuit

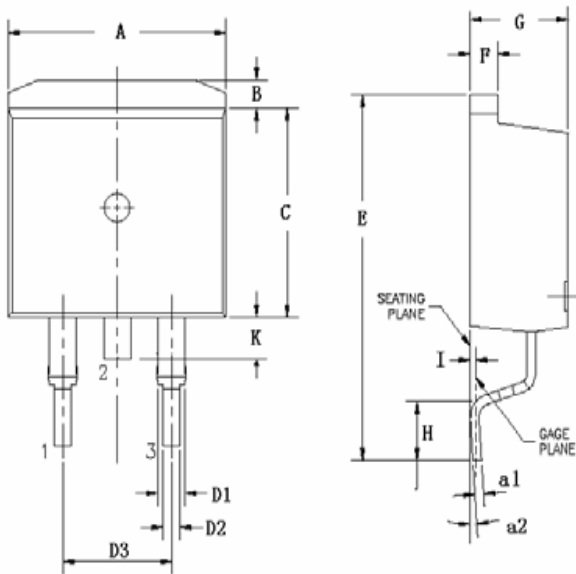


3) Switch Time Test Circuit



TO-263 PACKAGE INFORMATION

Dimensions in mm unless otherwise specified



Symbol	Min	Nom	Max
A	9.66	9.97	10.28
B	1.02	1.17	1.32
C	8.59	9.00	9.40
D1	1.14	1.27	1.40
D2	0.70	0.83	0.95
D3		5.08	
E	15.09	15.24	15.39
F	1.15	1.28	1.40
G	4.30	4.50	4.70
H	2.29	2.54	2.79
I		0.25	
K	1.30	1.45	1.60
a1	0.45	0.55	0.65
a2(degree)	0°		8°


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