

● General Description

The AGMH70N90C 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

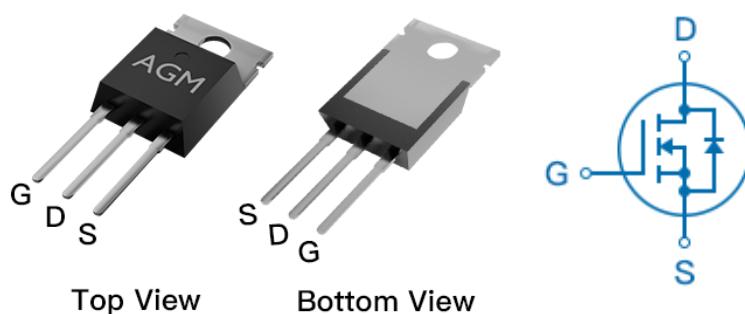
● Application

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

Product Summary

BVDSS	RDSON	ID
65V	4.3mΩ	91A

TO-220 Pin Configuration



Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGMH70N90C	AGMH70N90C	TO-220	---	---	1000

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

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	65	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(Tc=25°C) (Note 1)	91	A
	Drain Current-Continuous(Tc=100°C)	64	A
IDM (pluse)	Drain Current-Pulsed (Note 2)	364	A
PD	Maximum Power Dissipation(Tc=25°C)	89	w
	Maximum Power Dissipation(Tc=100°C)	36	w
EAS	Avalanche energy (Note 3)	400	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	---	62.5	°C/W
RθJC	Thermal Resistance Junction-Case ¹	---	1.4	°C/W

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

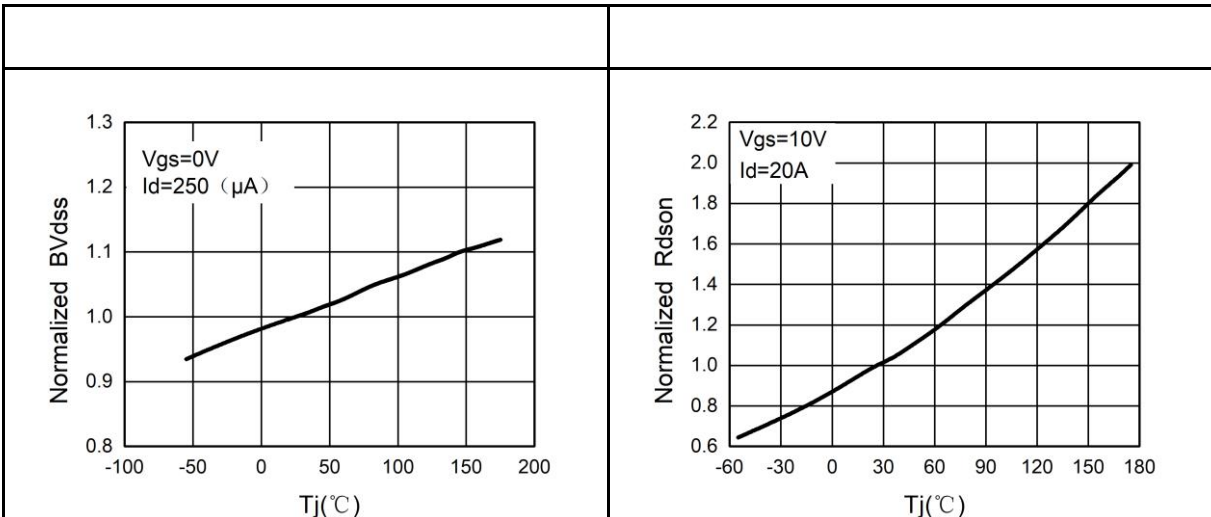
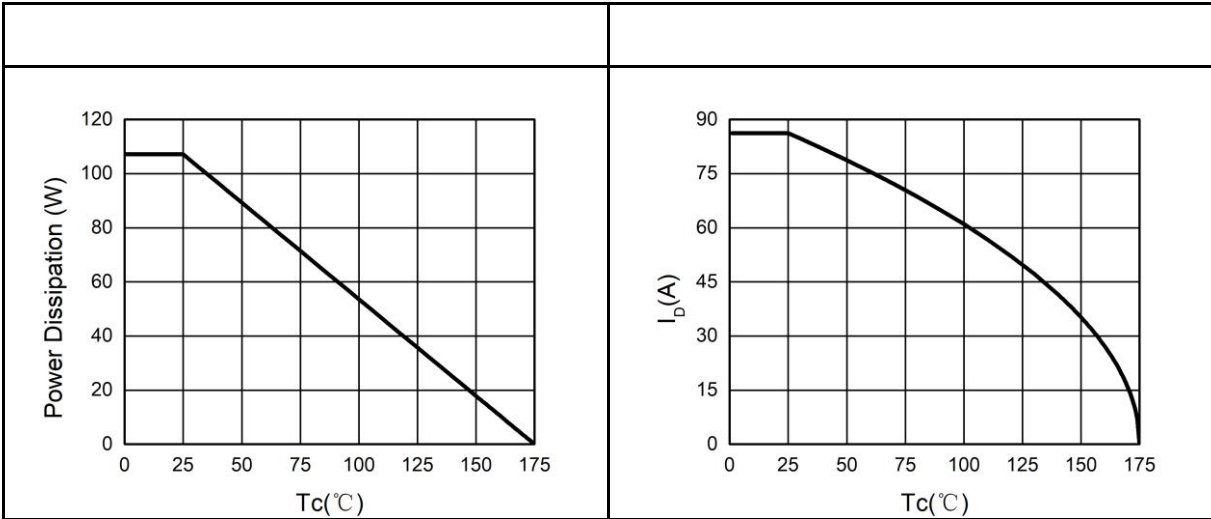
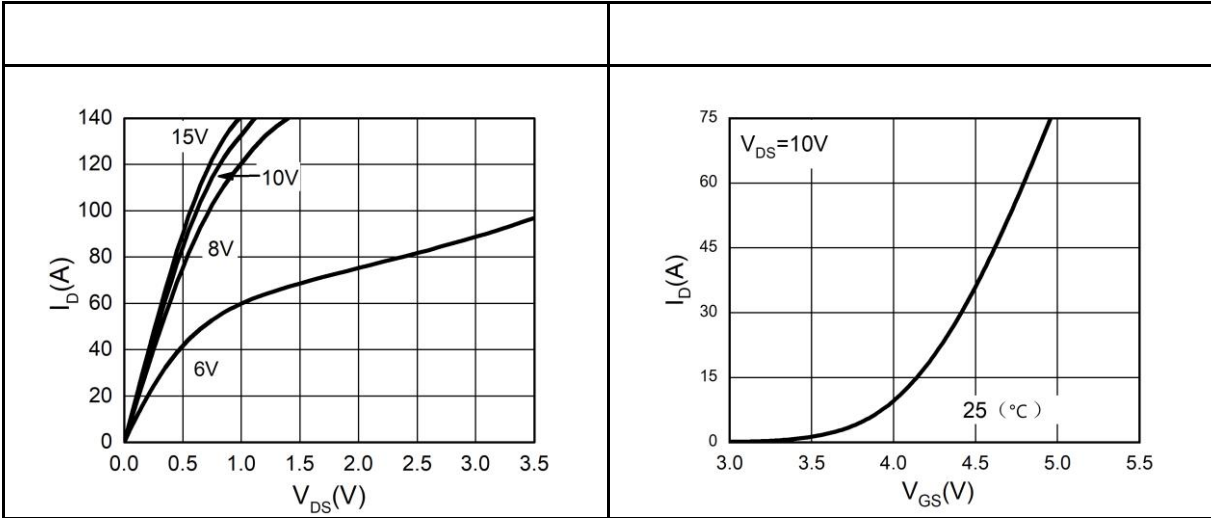
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	V _{GS} =0V ID=250μA	65	--	--	V
IDSS	Zero Gate Voltage Drain Current	V _{DS} =60V,V _{GS} =0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	V _{GS} =±20V,V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,ID=250μA	2	--	4	V
g _{FS}	Forward Transconductance	V _{DS} =5V,ID=10A	--	19	--	S
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, ID=20A	--	4.3	6.5	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =30V,V _{GS} =0V, F=1MHZ	--	5624	--	pF
C _{oss}	Output Capacitance		--	303	--	pF
C _{rss}	Reverse Transfer Capacitance		--	237	--	pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V,f=1.0MHz	--	0.9	--	Ω
Switching Times						
t _{d(on)}	Turn-on Delay Time	V _{GS} =10V,V _{DS} =30V, R _L =0.75Ω,R _{GEN} =3.0Ω	--	30	--	nS
t _r	Turn-on Rise Time		--	101	--	nS
t _{d(off)}	Turn-Off Delay Time		--	50	--	nS
t _f	Turn-Off Fall Time		--	11	--	nS
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =30V, ID=20A	--	91	--	nC
Q _{gs}	Gate-Source Charge		--	26	--	nC
Q _{gd}	Gate-Drain Charge		--	26.2	--	nC
Source-Drain Diode Characteristics						
I _{SD}	Source-Drain Current(Body Diode)		--	--	91	A
V _{SD}	Forward on Voltage	V _{GS} =0V,IS=20A	--	--	1.2	V
t _{rr}	Reverse Recovery Time	I _F =20A , dI/dt=100A/μs , T _J =25°C	--	34	--	ns
Q _{rr}	Reverse Recovery Charge		--	40.3	--	nc

Notes 1.The maximum current rating is package limited.

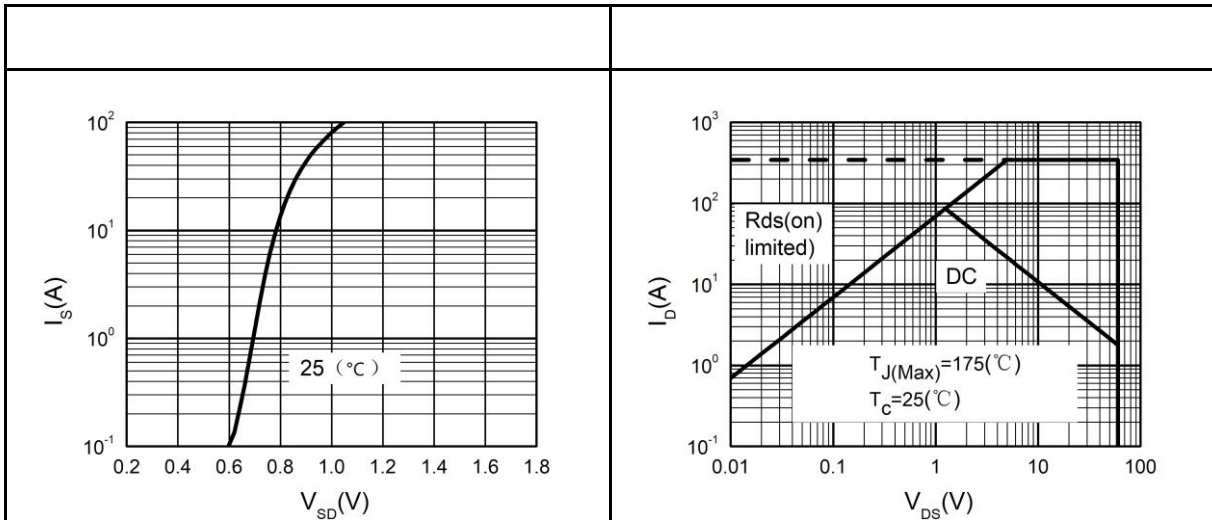
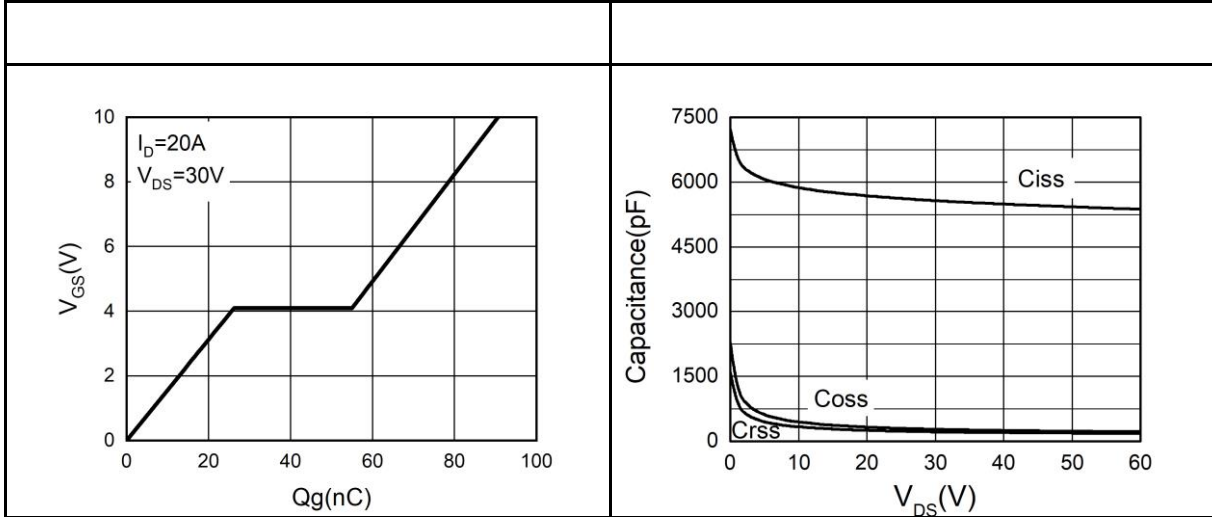
Notes 2.Repetitive Rating: Pulse width limited by maximum junction temperature

Notes 3.EAS condition: T_J=25°C,V_{DD}=30V,V_{gs}=10V,ID=40A,L=0.5mH,R_G=25ohm

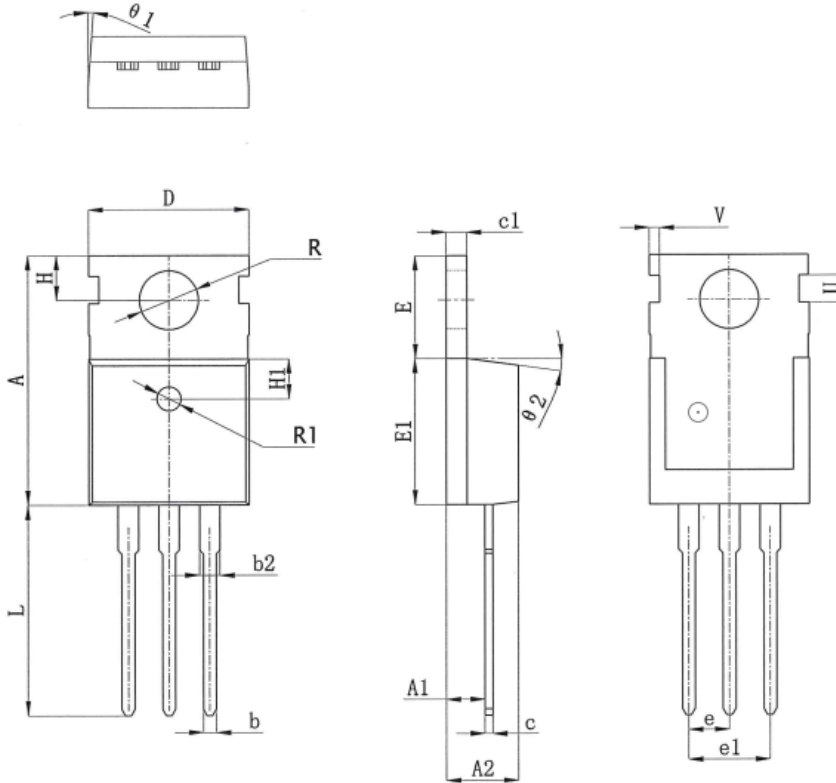
Typical Electrical And Thermal Characteristics (Curves)



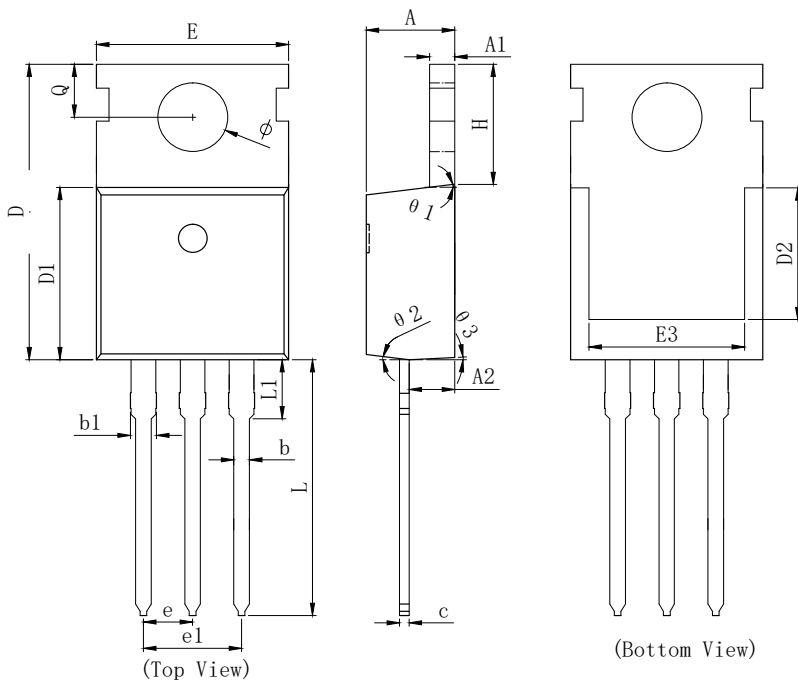
Typical Electrical And Thermal Characteristics (Curves)



TO-220 PACKAGE INFORMATION



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	15.400	15.600	15.800
A1	2.350	2.400	2.500
A2	4.400	4.500	4.700
b	0.700	0.800	0.900
b2	1.180	1.310	1.440
c	0.480	0.500	0.560
c1	1.290	1.300	1.320
D	9.800	10.000	10.200
E	6.400	6.500	6.600
E1	9.000	9.100	9.200
e	2.420	2.540	2.660
e1	4.840	5.080	5.320
H	2.730	2.800	2.870
H1	2.400	2.500	2.600
L	13.020	13.370	13.720
R	3.500	3.600	3.730
R1	1.400	1.500	1.600
U	1.650	1.750	1.850
V	0.580	0.680	0.780
$\theta 1$	2°	2.5°	3°
$\theta 2$	6.5°	7°	7.5°



SYMBOL	MILLIMETER		
	MIN	Typ.	MAX
A	4.370	4.570	4.700
A1	1.250	1.300	1.400
A2	2.150	2.350	2.550
b	0.700	0.800	0.950
b1	1.170	1.270	1.470
c	0.450	0.500	0.600
D	15.100	15.600	16.100
D1	8.800	9.100	9.400
D2	5.500	6.300 REF	
E	9.700	10.000	10.300
E3	7.000	7.600 REF	
e	2.540 BSC		
e1	5.080 BSC		
L	13.200	13.500	13.800
L1		3.100	3.400
H	6.250	6.500	6.750
ϕ	3.400	3.600	3.800
Q	2.600	2.800	3.000
$\theta 1$	7° TYP		
$\theta 2$	7° TYP		
$\theta 3$	3° TYP		


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