General Description

The AGM30P35M 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

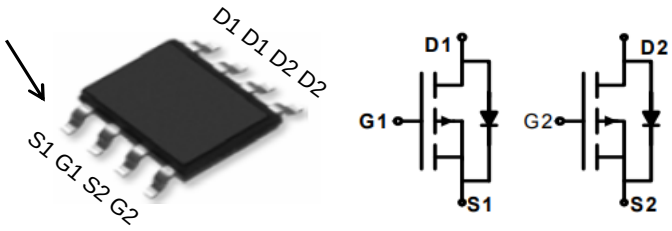
Application

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

Product Summary

BVDSS	RDSON	ID
-30V	33mΩ	-5.4A

SOP8 Pin Configuration



Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM30P35M	AGM30P35M	SOP8	330mm	12mm	3000

Table 1. Absolute Maximum Ratings (TA=25℃)

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	-30	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(TA=25℃) **(Note 1)**	-5.4	A
	Drain Current-Continuous(TA=100℃)	-3.5	A
IDM (pluse)	Drain Current-Continuous@ Current-Pulsed **(Note 2)**	-22	A
PD	Maximum Power Dissipation(TA=25℃)	2.5	w
	Maximum Power Dissipation(TA=100℃)	1.0	w
EAS	Avalanche energy **(Note 3)**	--	mJ
TJ,TSTG	Operating Junction and Storage Temperature Range	-55 To 150	℃

Table 2. Thermal Characteristic

Symbol	Parameter	Typ	Max	Unit
RθJA	Thermal Resistance Junction-ambient (Steady State)[1]	--	50	℃/W

Table 2. P-Channel Electrical Characteristics (TJ=25℃unless otherwisenoted)

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	-1.5	-2.1	V
gFS	Forward Transconductance	VDS=- 5V ,ID=-4A	--	--	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-5A	--	33	43	mΩ
		VGS=-4.5V, ID=-4A	--	50	70	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=-15V,VGS=0V, F=1MHZ	--	482	--	pF
Coss	Output Capacitance		--	70.2	--	pF
Crss	Reverse Transfer Capacitance		--	63	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	--	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	VGS=-10V,VDS=-15V, ID=-5A,RGEN=3.0Ω	--	10	--	nS
tr	Turn-on Rise Time		--	15	--	nS
td(off)	Turn-Off Delay Time		--	18	--	nS
tf	Turn-Off Fall Time		--	12	--	nS
Qg	Total Gate Charge	VGS=-10V, VDS=-15V, ID=-5.4A	--	10.3	--	nC
Qgs	Gate-Source Charge		--	1.0	--	nC
Qgd	Gate-Drain Charge		--	2.1	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	-5.4	A
VSD	Forward on Voltage	VGS=0V,IS=-5A	--	--	-1.2	V
trr	Reverse Recovery Time	IF=-5A , dI/dt=100A/μs , TJ=25℃	--	--	--	ns
Qrr	Reverse Recovery Charge		--	--	--	nc

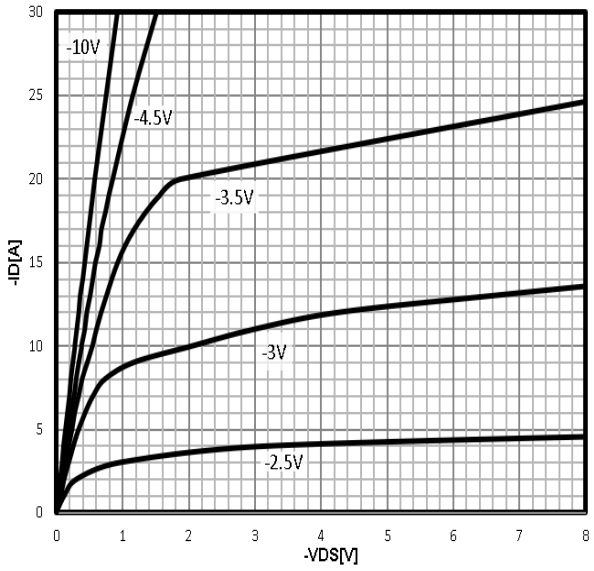
Notes 1.The maximum current rating is packagelimited.

Notes2.Repetitive Rating: Pulse width limited by maximum junction temperature

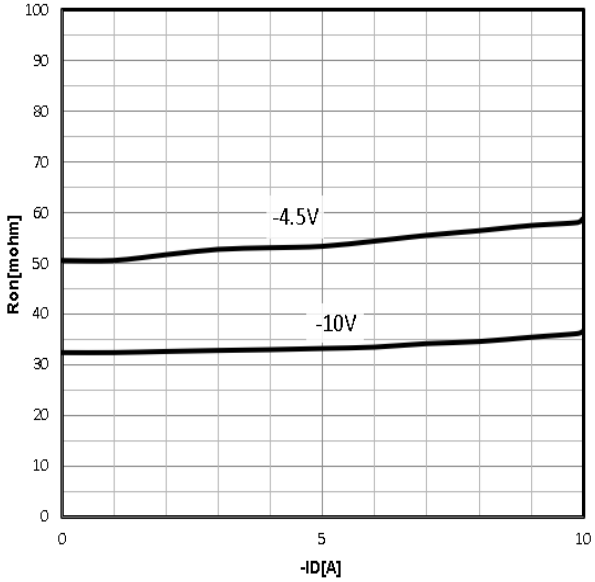
Notes 3.EAS condition: TJ=25℃

Characteristics Curve:

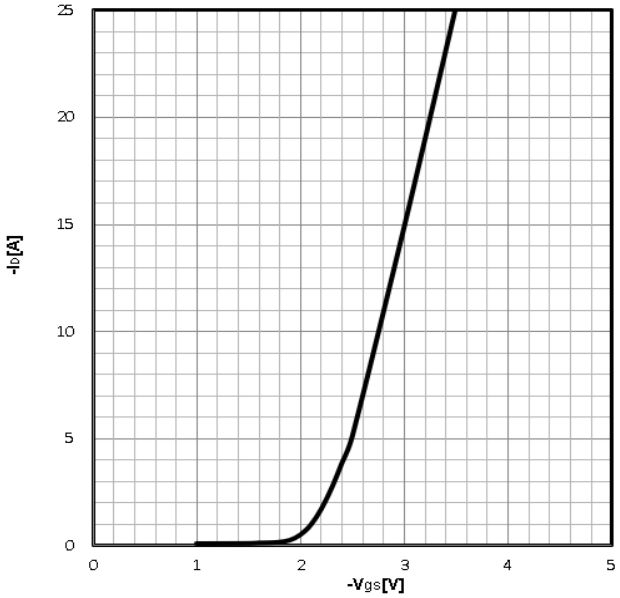
Typ. output characteristics
$I_D=f(V_{DS})$



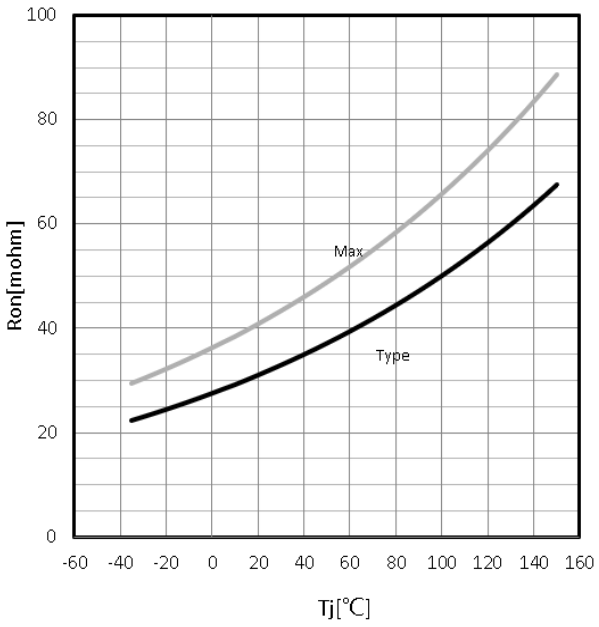
Typ. drain-source on resistance
$R_{DS(on)}=f(I_D)$



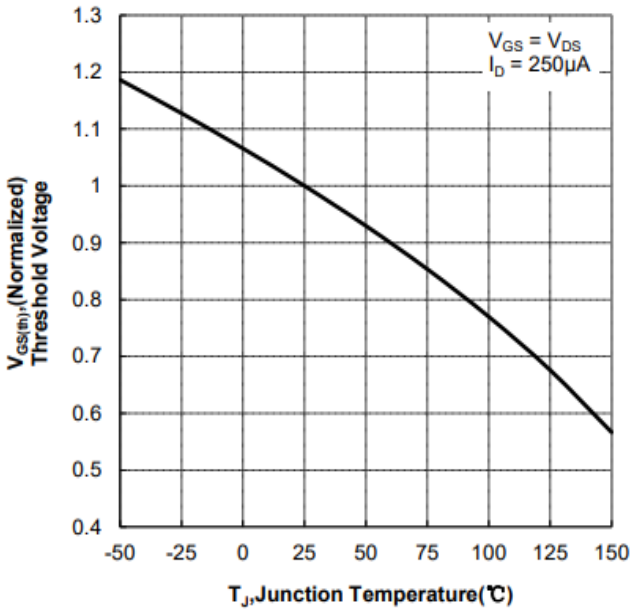
Typ. transfer characteristics
$I_D=f(V_{GS})$



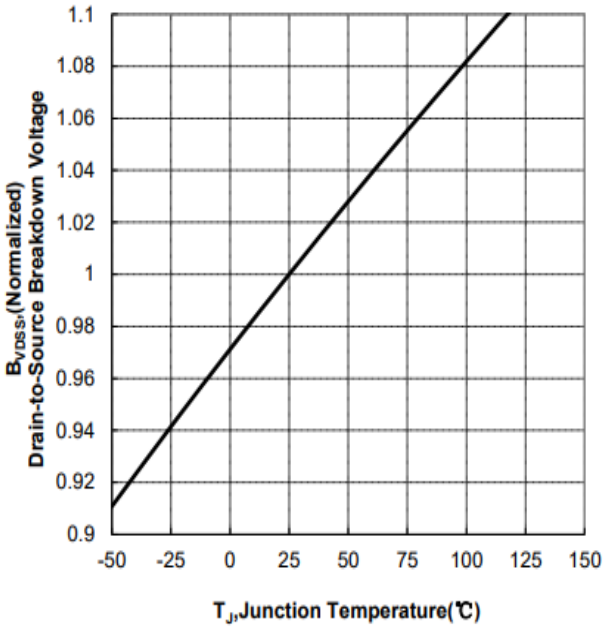
Drain-source on-state resistance
$R_{DS(on)}=f(T_j);I_D=-5.1A;\ V_{GS}=-10V$



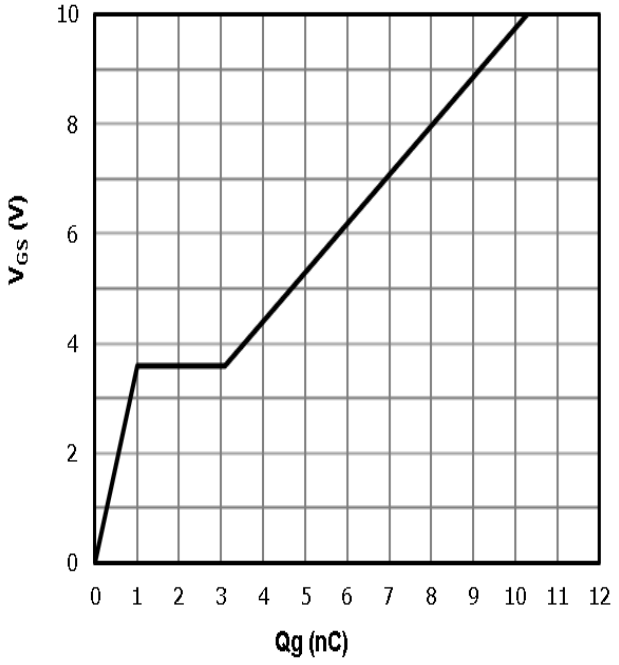
Gate Threshold Voltage
$-V_{TH}=f(T_j)$; I_D=-250uA



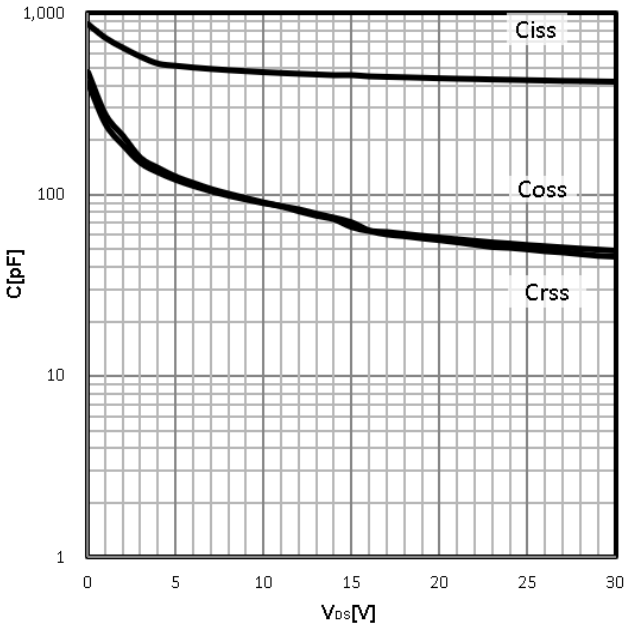
Drain-source breakdown voltage
$V_{BR(DSS)}=f(T_j)$; I_D=-250uA



Typ. gate charge
$V_{GS}=f(Q_{gate})$; I_D=-5.4A

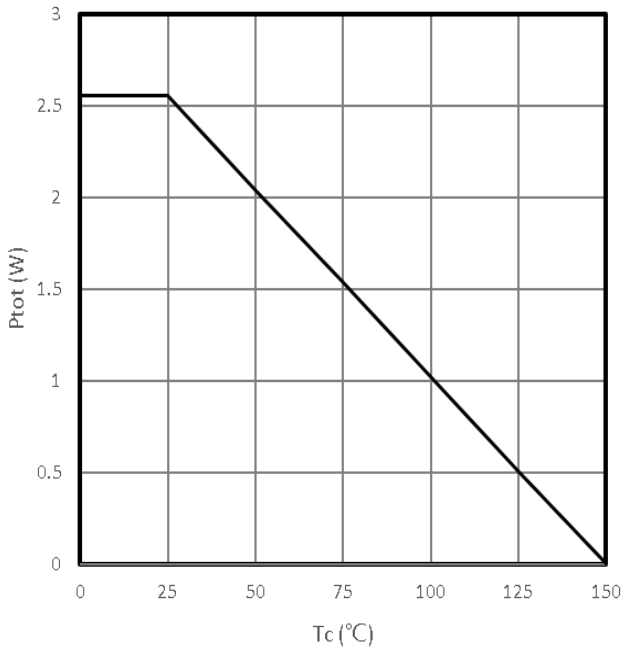


Typ. capacitances
C =f(V_{DS}); V_{GS}=0V; f =1MHz



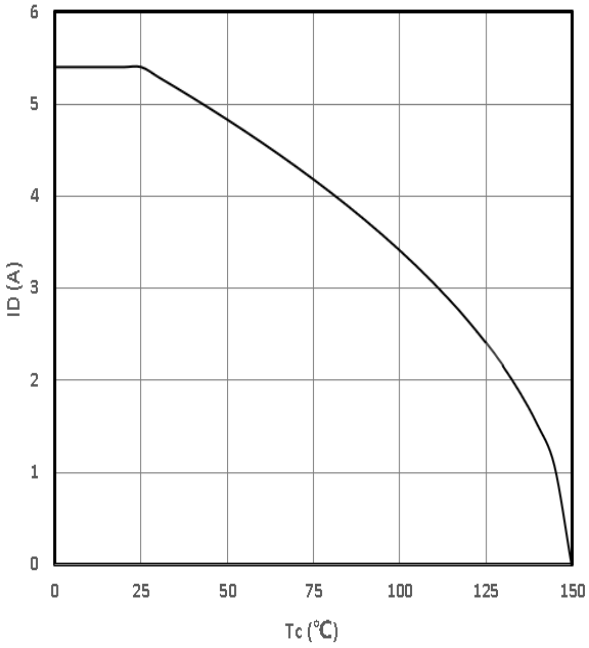
Power Dissipation

$P_{tot}=f(T_C)$



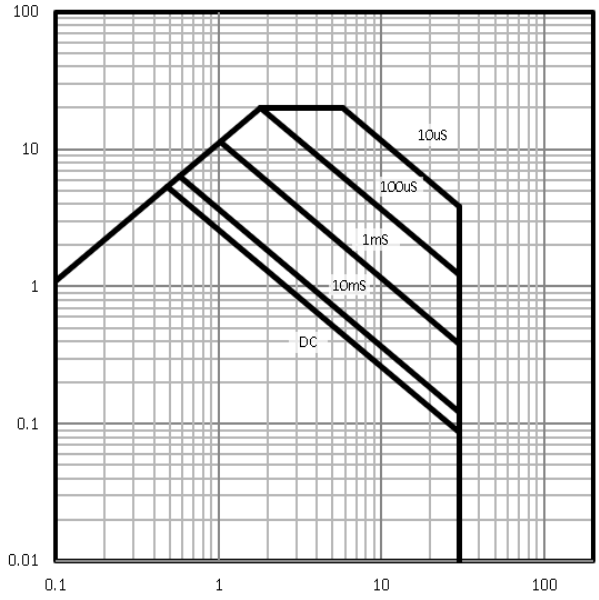
Maximum Drain Current

$-I_D=f(T_C)$



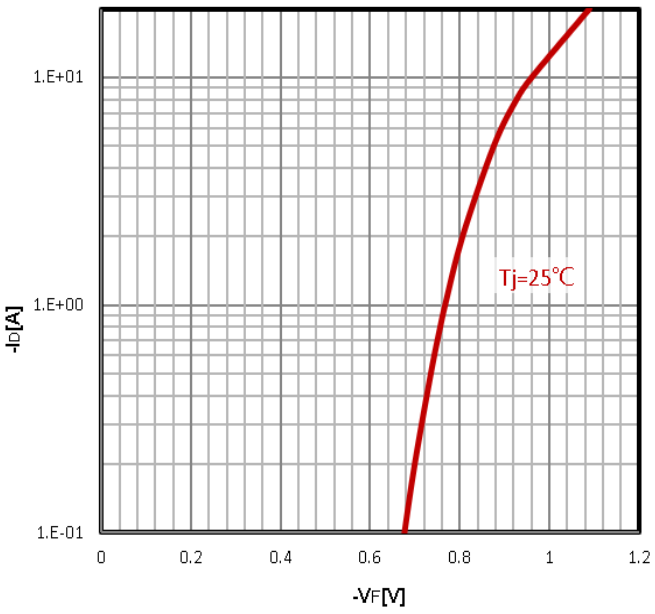
Safe operating area

$-I_D=f(-V_{DS})$



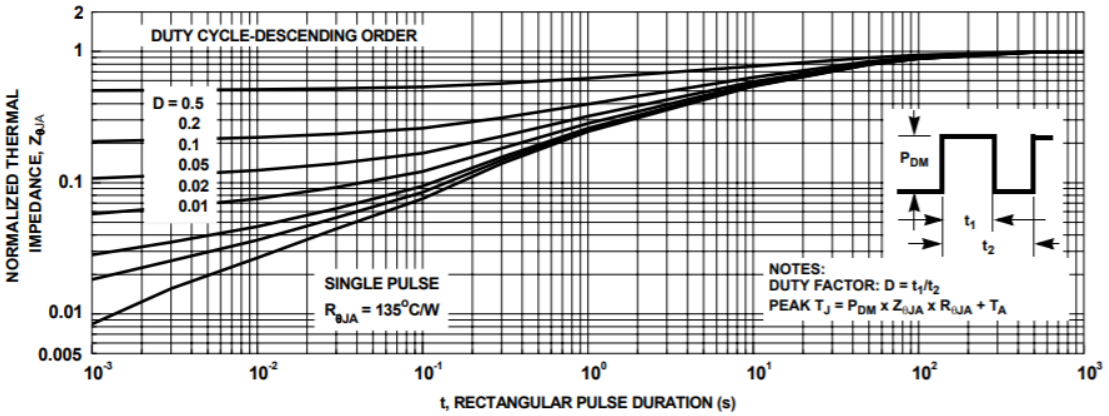
Body Diode Forward Voltage Variation

$-I_F=f(-V_{DS})$



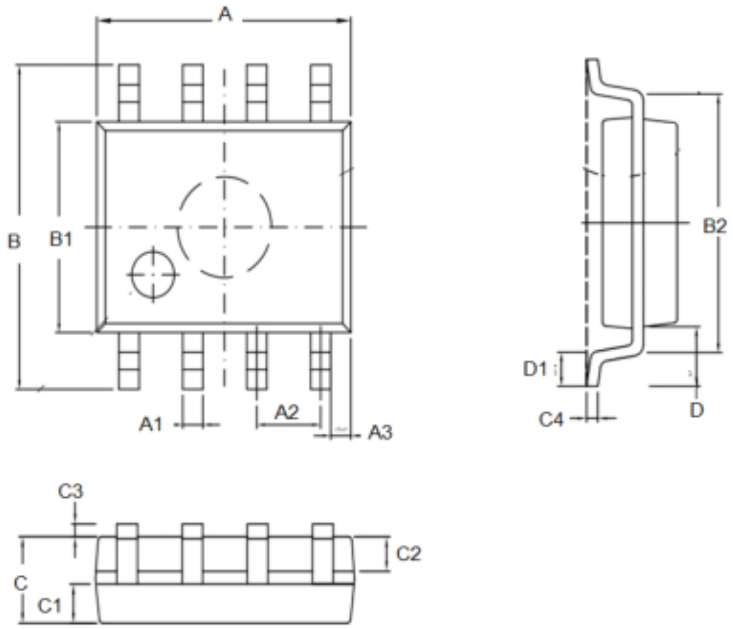
Max. transient thermal impedance

$Z_{thJC}=f(t_p)$



●Dimensions(SOP8)

SYMBOL	min	TYP	max	SYMBOL	min		max
A	4.80		5.00	C	1.30		1.50
A1	0.37		0.47	C1	0.55		0.75
A2		1.27		C2	0.55		0.65
A3		0.41		C3	0.05		0.20
B	5.80		6.20	C4	0.19	0.20	0.23
B1	3.80		4.00	D		1.05	
B2		5.00		D1	0.40		0.62



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This document is the first version issued on July 10th, 2023. This document replaces all previously provided information.