

General Description

The AGM6035F 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

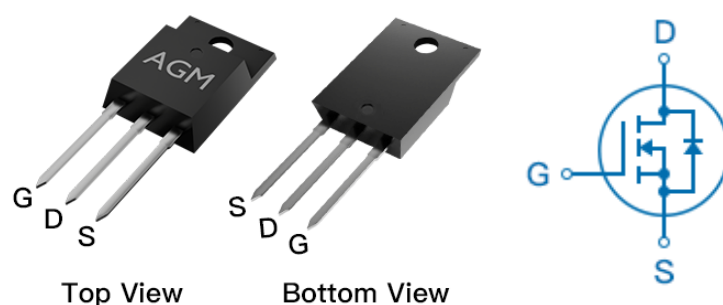
Application

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

Product Summary

BVDSS	RDS(ON)	ID
60V	2.4mΩ	130A

TO-220F Pin Configuration



Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM6035F	AGM6035F	TO-220F	----	----	1000

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

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	60	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(Tc=25°C) (Note 1)	130	A
	Drain Current-Continuous(Tc=100°C)	80	A
IDM (pulse)	Drain Current-Pulsed (Note 2)	520	A
PD	Maximum Power Dissipation(Tc=25°C)	208	w
	Maximum Power Dissipation(Tc=100°C)	83	w
EAS	Avalanche energy (Note 3)	484	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	---	60	°C/W
RθJC	Thermal Resistance Junction-Case ¹	---	0.6	°C/W

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=250μA	60	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=60V,VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS,ID=250μA	1.2	1.6	2.2	V
gFS	Forward Transconductance	VDS=5V,ID=10A	--	65	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=20A	--	2.4	3.2	mΩ
		VGS=4.5V, ID=10A	--	3.3	4.2	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=30V,VGS=0V, F=100MHZ	--	3590	--	pF
Coss	Output Capacitance		--	1080	--	pF
Crss	Reverse Transfer Capacitance		--	60	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	1.3	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	VGS=10V,VDS=30V, ID=20A,RGEN=10Ω	--	14	--	nS
tr	Turn-on Rise Time		--	9.0	--	nS
td(off)	Turn-Off Delay Time		--	51	--	nS
tf	Turn-Off Fall Time		--	13	--	nS
Qg	Total Gate Charge	VGS=10V, VDS=30V, ID=20A	--	68	--	nC
Qgs	Gate-Source Charge		--	11	--	nC
Qgd	Gate-Drain Charge		--	20	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	130	A
VSD	Forward on Voltage	VGS=0V,IS=20A	--	--	1.2	V
trr	Reverse Recovery Time	IS=20A , dl/dt=100A/μs , TJ=25°C	--	24	--	ns
Qrr	Reverse Recovery Charge		--	84	--	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 , VDD=30V,Vgs=10V,ID=44A, L=0.5mH, RG=25ohm

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

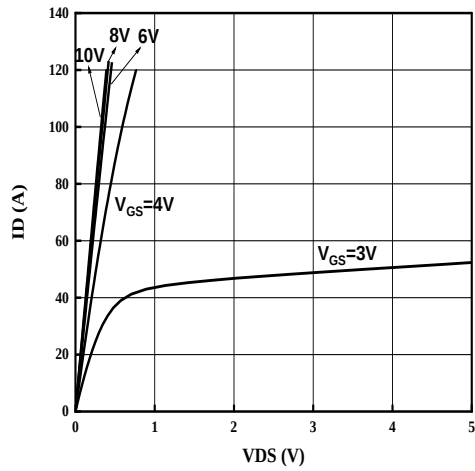


Fig1. Typical Output Characteristics

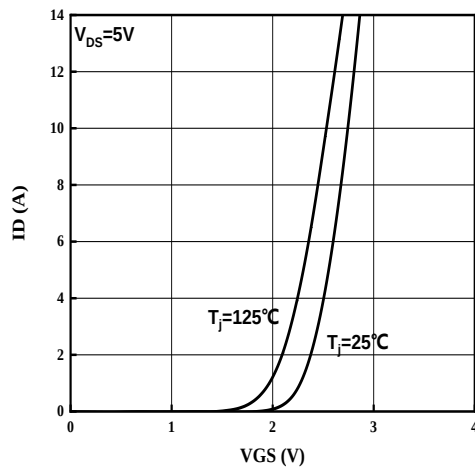


Fig2. Typical Transfer Characteristics

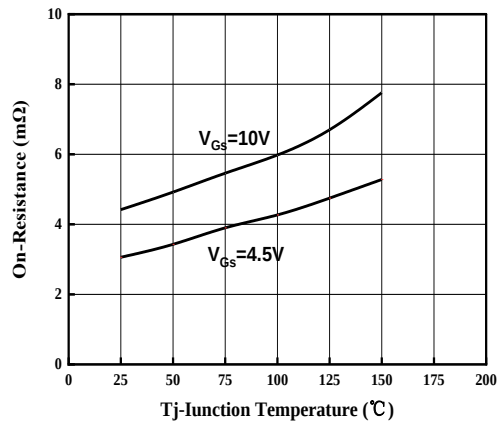


Fig3. On-Resistance Vs. Temperature

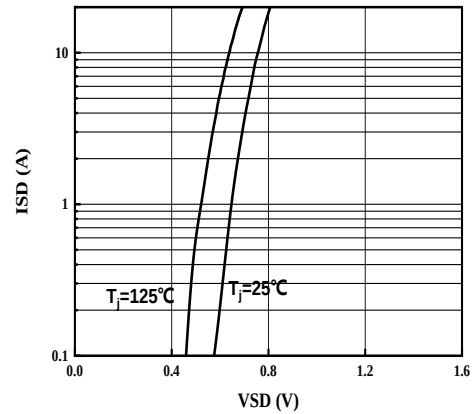


Fig4. Typical Source-Drain Diode Forward Voltage

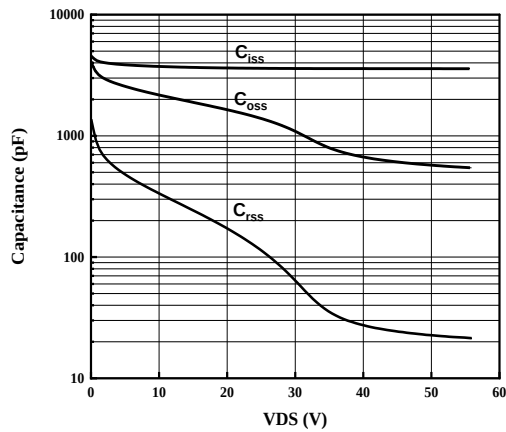


Fig5. Typical Capacitance

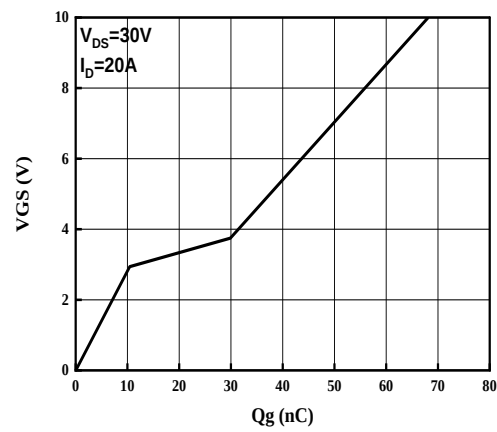


Fig6. Typical Gate Charge

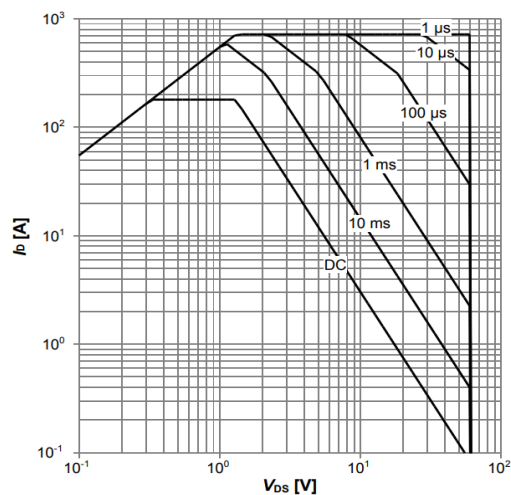


Fig7. Safe Operating Area

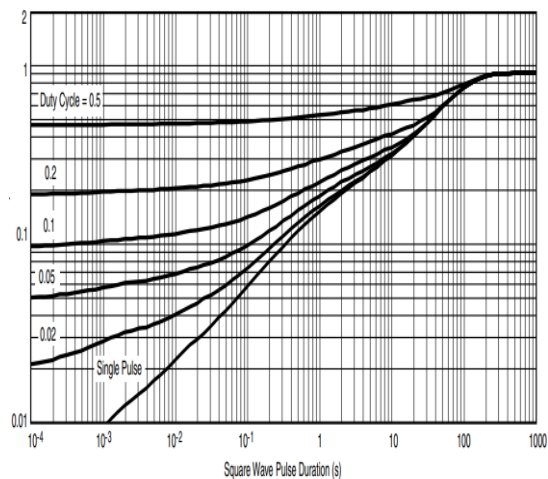
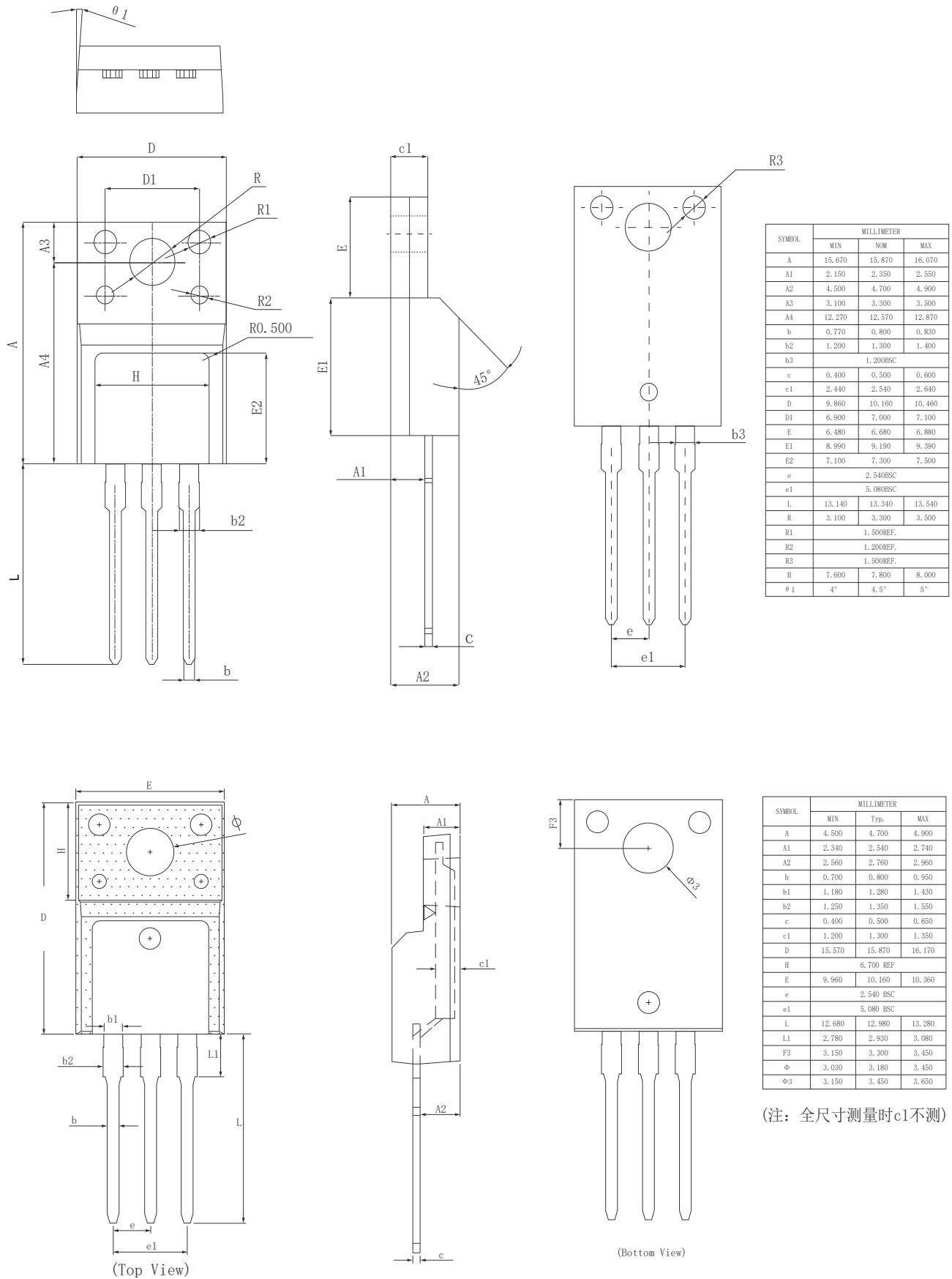


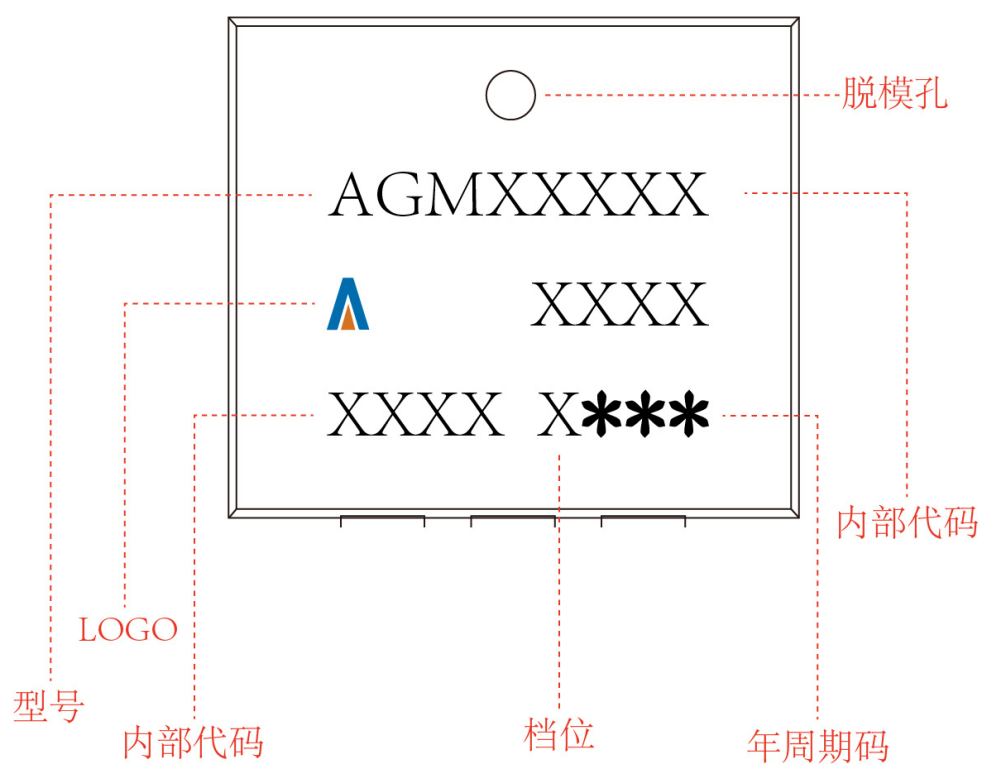
Fig8. Normalized transient thermal impedance

Dimensions (TO-220F)



TO-220F

Marking Instructions:



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