

### ● General Description

The AGM612S 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

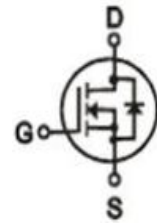
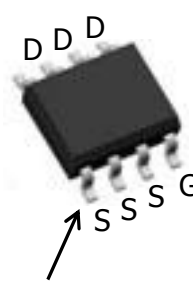
### ● Application

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

### Product Summary

BVDSS	RDSON	ID
60V	11mΩ	11A

### SOP8 Pin Configuration



### Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM612S	AGM612S	SOP8	----	----	3000

**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) <b>(Note 1)</b>	11	A
	Drain Current-Continuous(Tc=100°C)	6	A
IDM (pluse)	Drain Current-Continuous@ Current-Pulsed <b>(Note 2)</b>	36	A
PD	Maximum Power Dissipation(Tc=25°C)	83	w
	Maximum Power Dissipation(Tc=100°C)	33	w
EAS	Avalanche energy <b>(Note 3)</b>	28	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) <sup>1</sup>	--	30	°C/W
RθJC	Thermal Resistance Junction-Case <sup>1</sup>	---	1.5	°C/W

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

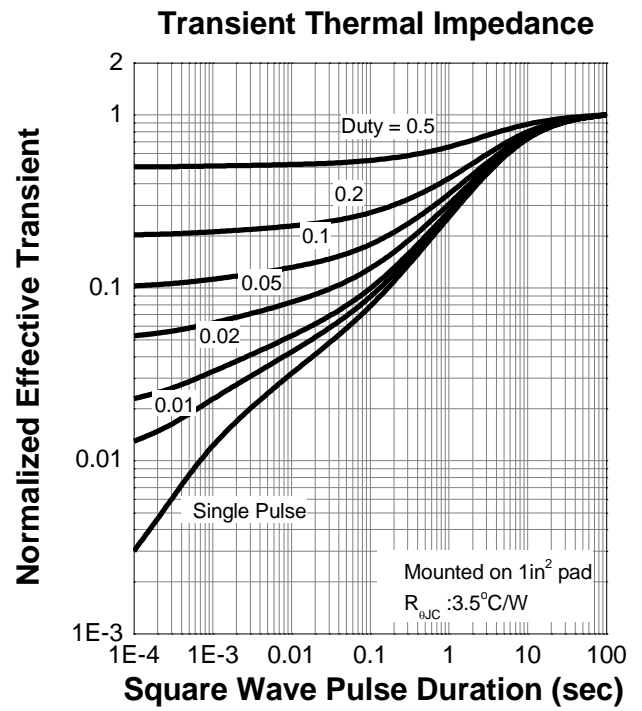
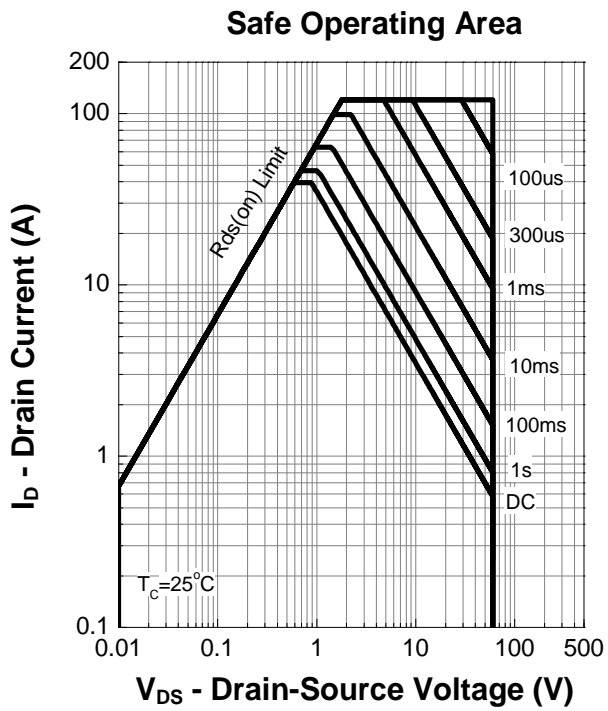
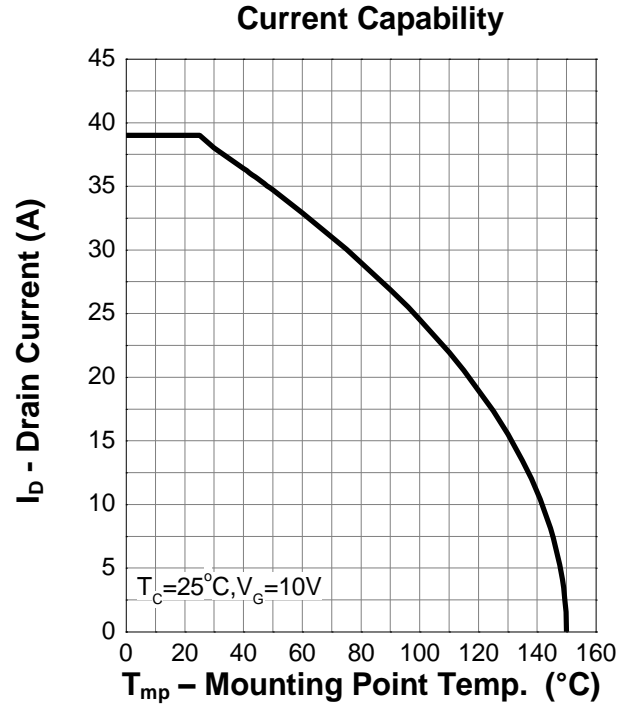
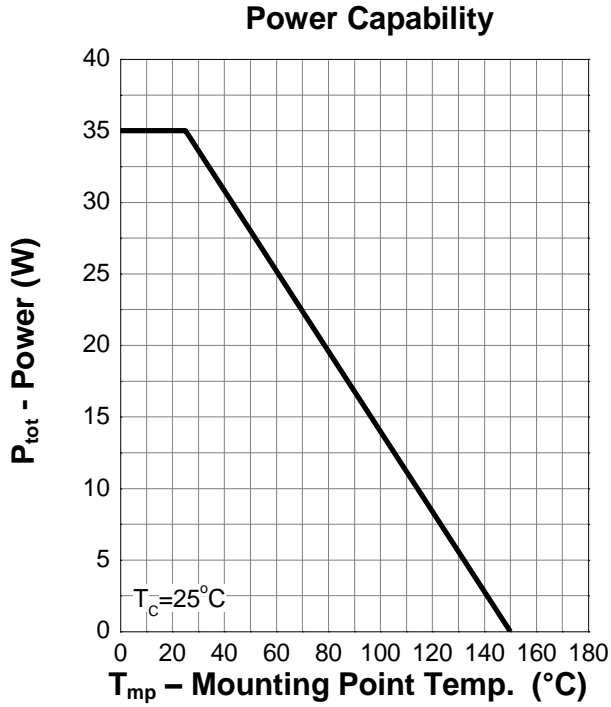
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>On/Off States</b>						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=250μA	60	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=50V, VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	1.2	1.6	2.5	V
gFS	Forward Transconductance	VDS=5V, ID=20A	--	10	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=15A	--	11	16	mΩ
		VGS=4.5V, ID=10A	--	18	24	mΩ
<b>Dynamic Characteristics</b>						
Ciss	Input Capacitance	VDS=30V, VGS=0V, F=1MHZ	--	700	--	pF
Coss	Output Capacitance		--	340	--	pF
Crss	Reverse Transfer Capacitance		--	28	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V, f=1.0MHz	--	1.7	--	Ω
<b>Switching Times</b>						
td(on)	Turn-on Delay Time	VGS=10V, VDS=30V, ID=8A, RGEN=2.5Ω	--	6.2	--	nS
tr	Turn-on Rise Time		--	2.3	--	nS
td(off)	Turn-Off Delay Time		--	23	--	nS
tf	Turn-Off Fall Time		--	17	--	nS
Qg	Total Gate Charge	VGS=10V, VDS=30V, ID=8A	--	15	--	nC
Qgs	Gate-Source Charge		--	3.6	--	nC
Qgd	Gate-Drain Charge		--	3.1	--	nC
<b>Source-Drain Diode Characteristics</b>						
ISD	Source-Drain Current(Body Diode)		--	--	11	A
VSD	Forward on Voltage	VGS=0V, IS=8A	--	--	1.3	V
trr	Reverse Recovery Time	IF=8A , dI/dt=100A/μs , TJ=25°C	--	32	--	ns
Qrr	Reverse Recovery Charge		--	11	--	nc

Notes 1. The maximum current rating is package limited.

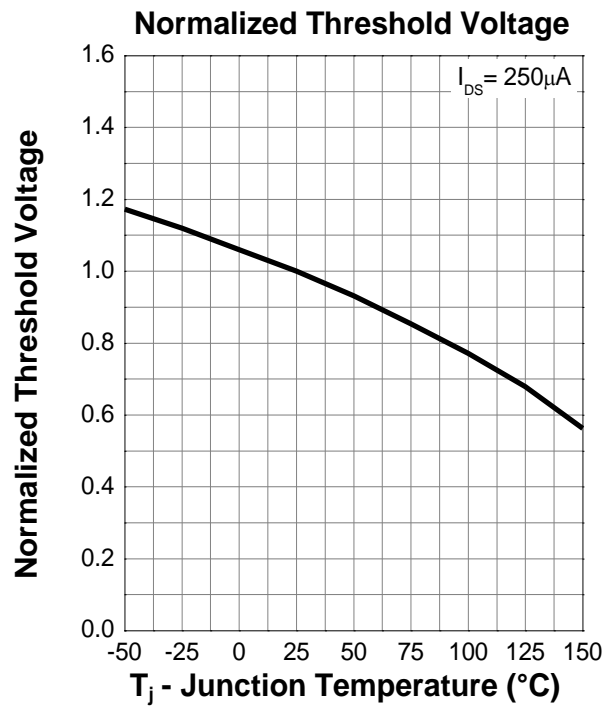
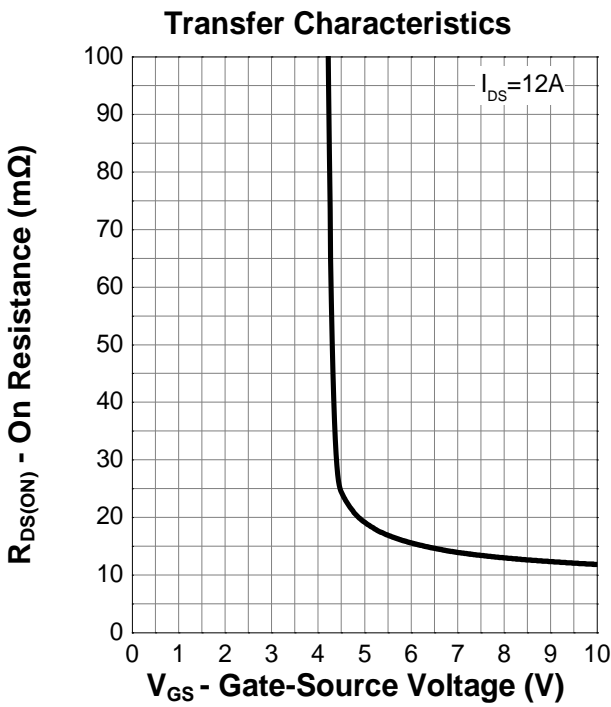
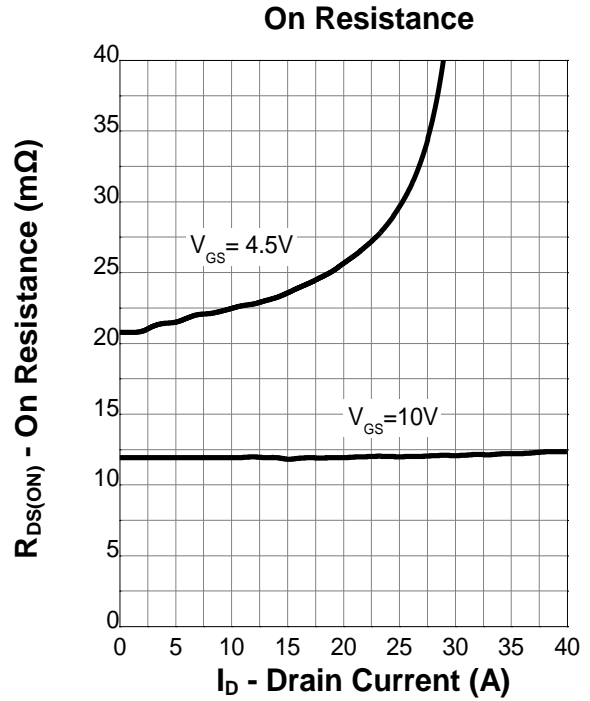
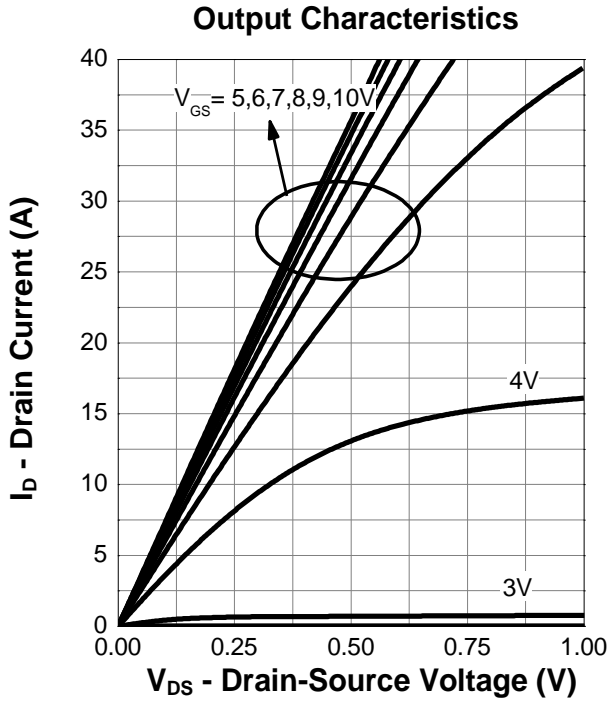
Notes 2. Repetitive Rating: Pulse width limited by maximum junction temperature

Notes 3. EAS condition: TJ=25°C

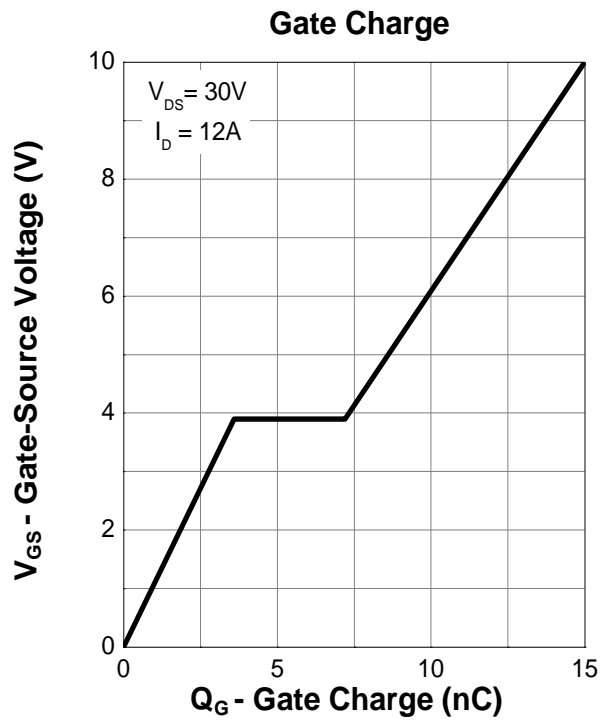
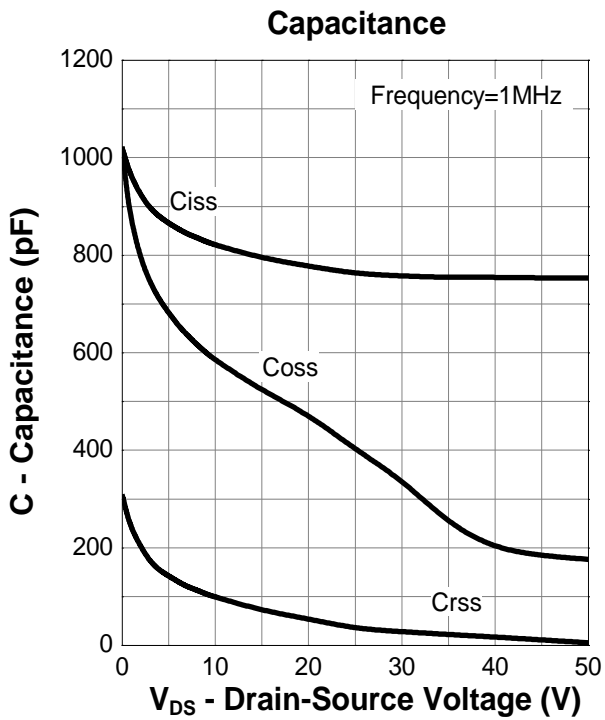
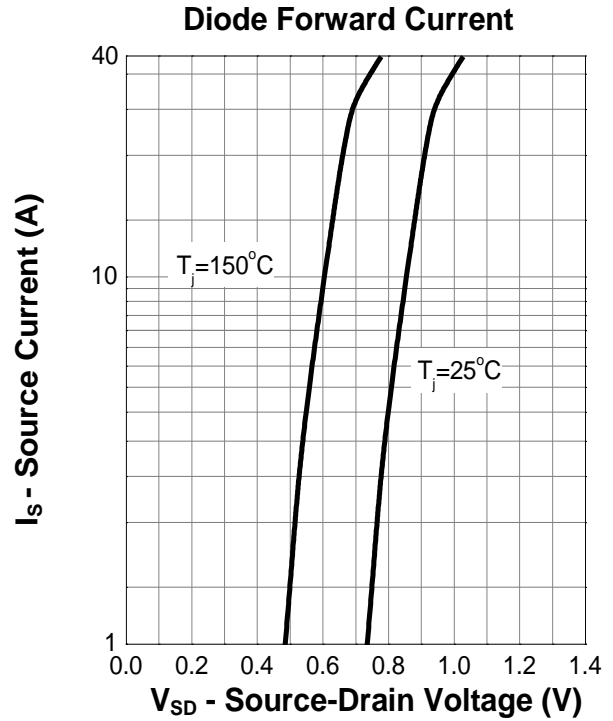
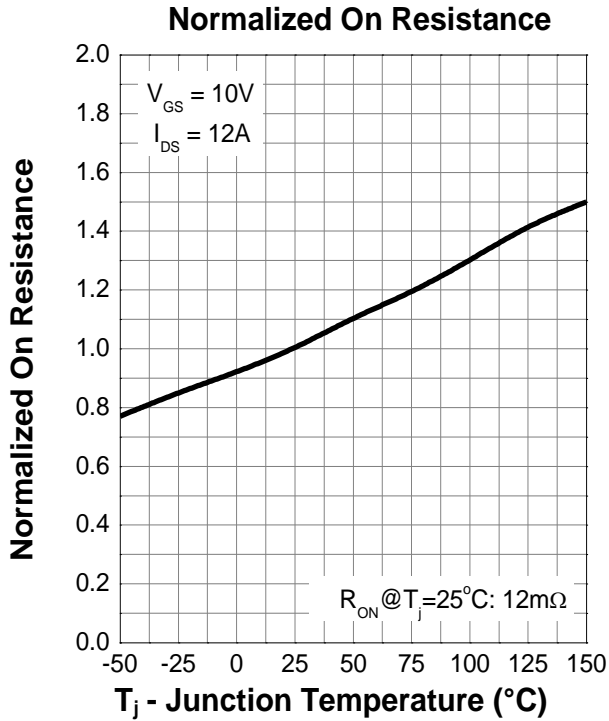
# Typical Characteristics



## Typical Characteristics (cont.)

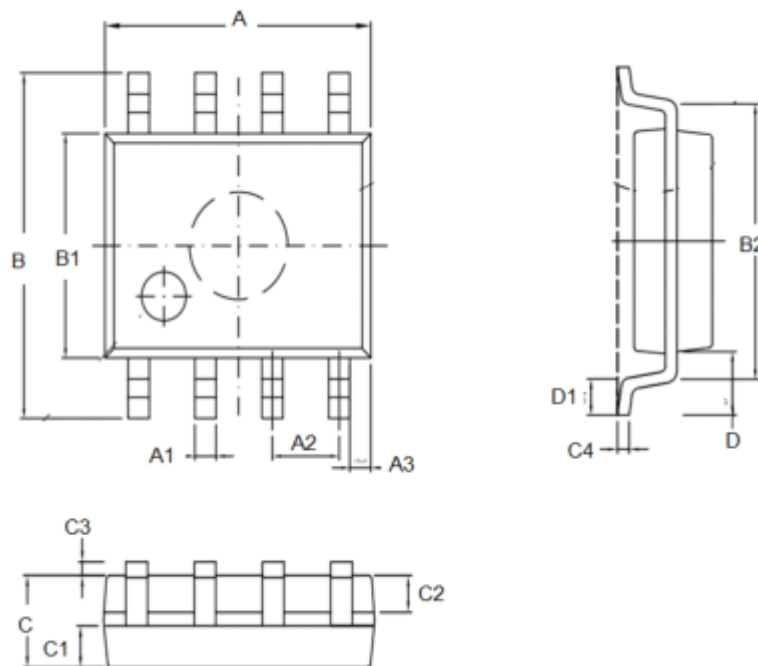


## Typical Characteristics (cont.)



**•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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