

General Description

The AGM308SR combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$.

Features

- Advance high cell density Trench technology
- Low $R_{DS(ON)}$ to minimize conductive loss
- Low Gate Charge for fast switching
- Low Thermal resistance

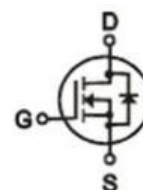
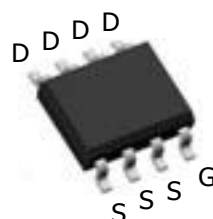
Application

- POL application
- BLDC Motor driver

Product Summary

BVDSS	RDSON	ID
30V	5.7mΩ	17A

SOP8 Pin Configuration



Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM308SR	AGM308SR	SOP8	----	----	3000

Table 1. Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage ($V_{GS}=0V$)	30	V
V_{GS}	Gate-Source Voltage ($V_{DS}=0V$)	± 20	V
I_D	Drain Current-Continuous($T_c=25^{\circ}\text{C}$) (Note 1)	17	A
	Drain Current-Continuous($T_c=100^{\circ}\text{C}$)	12	A
$I_{DM} \text{ (pulse)}$	Drain Current-Continuous@ Current-Pulsed (Note 2)	57	A
P_D	Maximum Power Dissipation($T_c=25^{\circ}\text{C}$)	80	W
	Maximum Power Dissipation($T_A=100^{\circ}\text{C}$)	2.7	W
E_{AS}	Avalanche energy (Note 3)	160	mJ
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	$^{\circ}\text{C}$

Table 2. Thermal Characteristic

Symbol	Parameter	Typ	Max	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (Steady State) ¹	---	50	$^{\circ}\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-Case ¹	---	1.5	$^{\circ}\text{C/W}$

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =250μA	30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V,V _{GS} =0V			1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V,V _{DS} =0V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} ,I _D =250μA	1.2	1.6	2.5	V
g _{FS}	Forward Transconductance	V _{DS} =5V,I _D =20A		16		S
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =12A		5.7	7.5	mΩ
		V _{GS} =4.5V, I _D =10A		7.0	9.0	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	F=1MHZ		1500		pF
C _{oss}	Output Capacitance			280		pF
Cr _{ss}	Reverse Transfer Capacitance			140		pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V,f=1.0MHz		1.3		Ω
Switching Times						
t _{d(on)}	Turn-on Delay Time	V _{GS} =10V, V _{DS} =15V, R _L =0.75Ω,R _{GEN} =3.3Ω		20		nS
t _r	Turn-on Rise Time			15		nS
t _{d(off)}	Turn-Off Delay Time			60		nS
t _f	Turn-Off Fall Time			11		nS
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =25V, I _D =10A		16		nC
Q _{gs}	Gate-Source Charge			8		nC
Q _{gd}	Gate-Drain Charge			5.0		nC
Source-Drain Diode Characteristics						
I _{SD}	Source-Drain Current(Body Diode)				17	A
V _{SD}	Forward on Voltage	V _{GS} =0V,I _S =20A			1.2	V

Fig.1 Power Dissipation

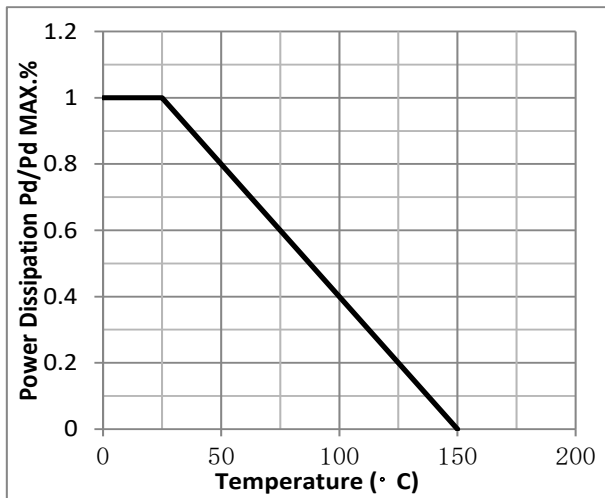


Fig.2 Typical output Characteristics

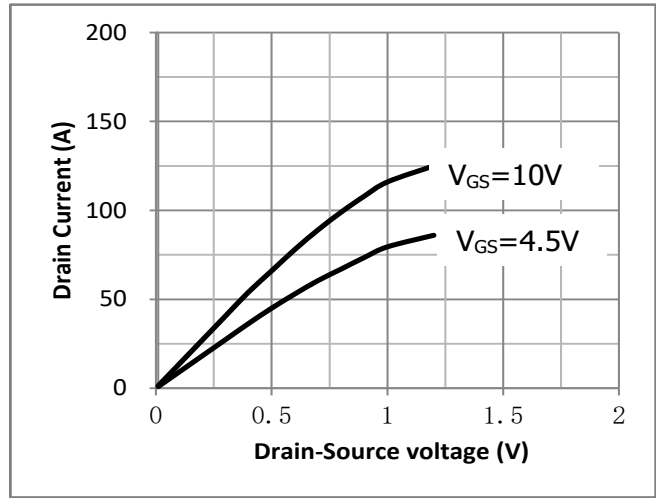


Fig.3 Threshold Voltage V.S Junction Temperature

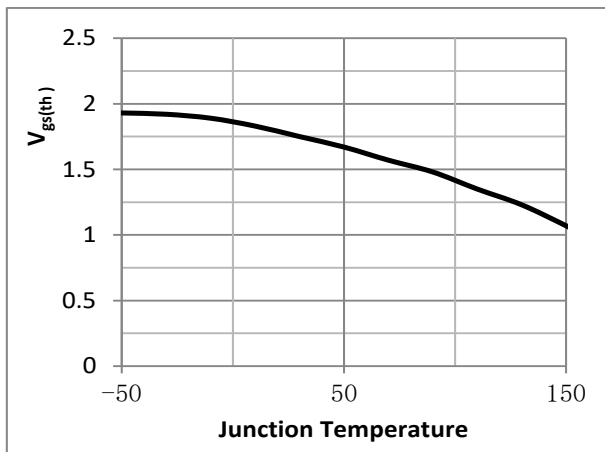


Fig.4 Resistance V.S Drain Current

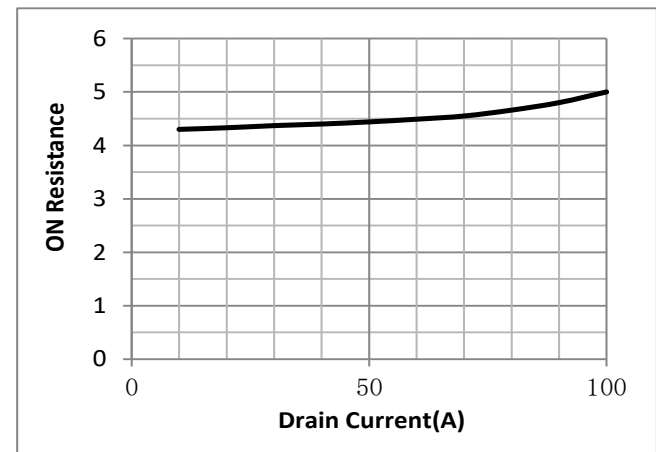


Fig.5 On-Resistance VS Gate Source Voltage

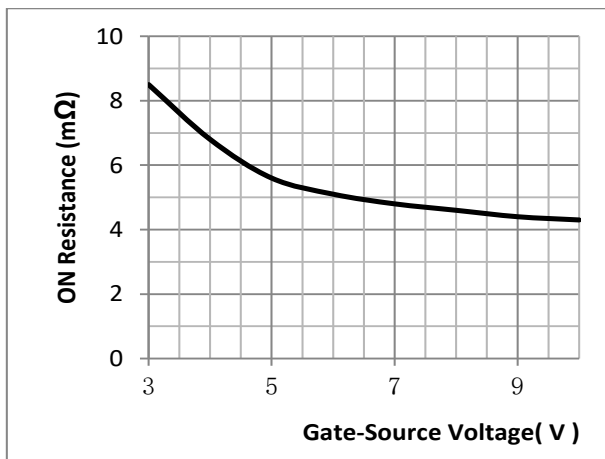


Fig.6 On-Resistance V.S Junction Temperature

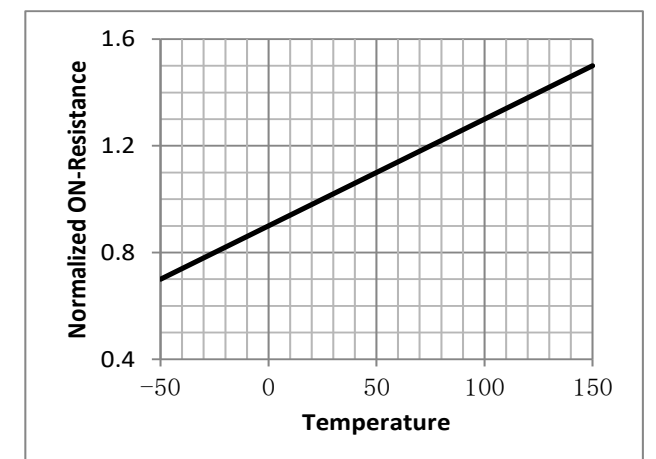


Fig.7 Switching Time Measurement Circuit

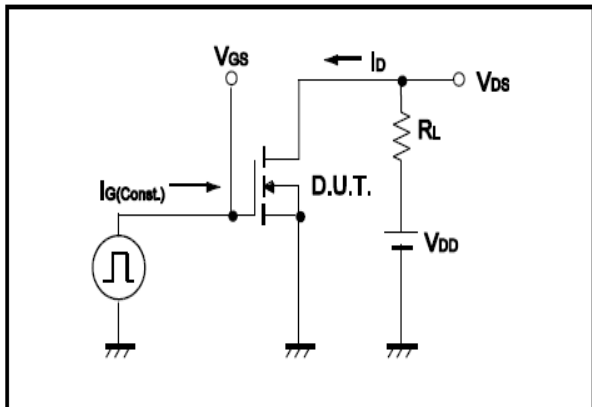


Fig.8 Gate Charge Waveform

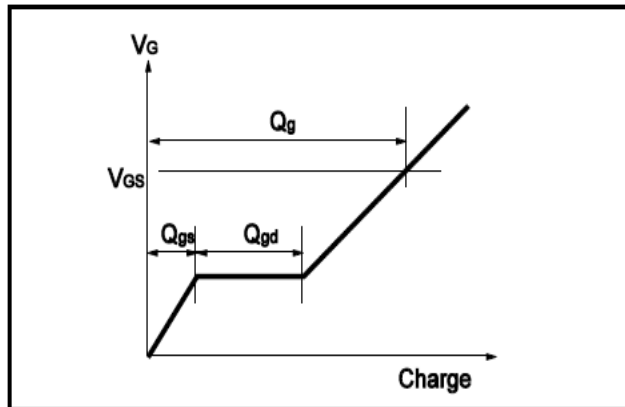


Fig.9 Switching Time Measurement Circuit

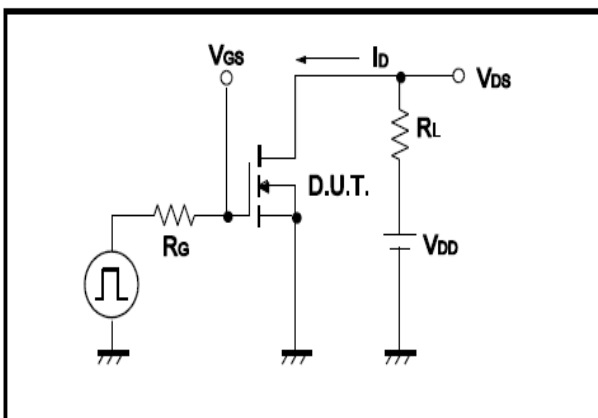


Fig.10 Gate Charge Waveform

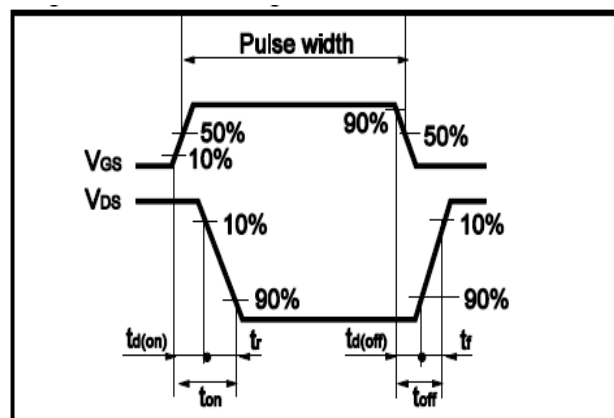


Fig.11 Avalanche Measurement Circuit

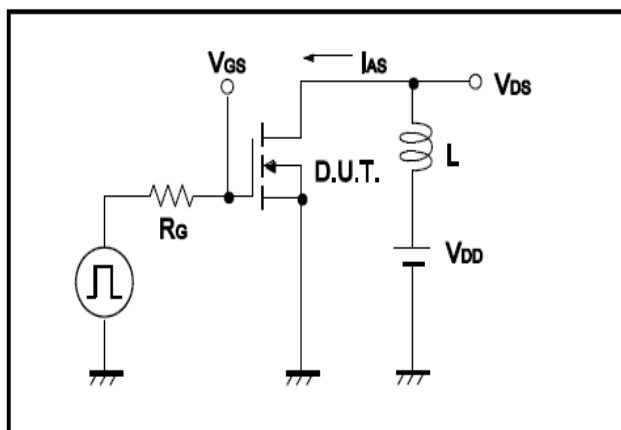
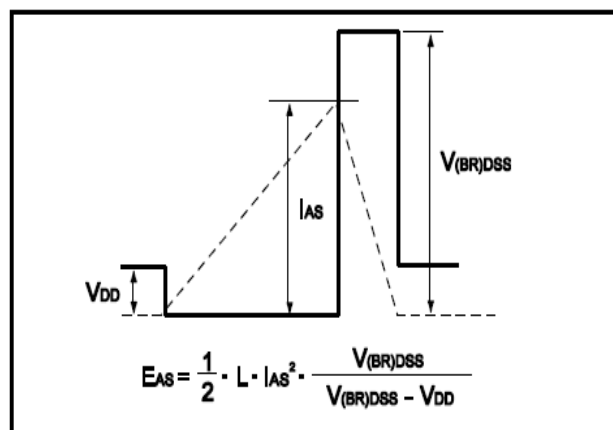
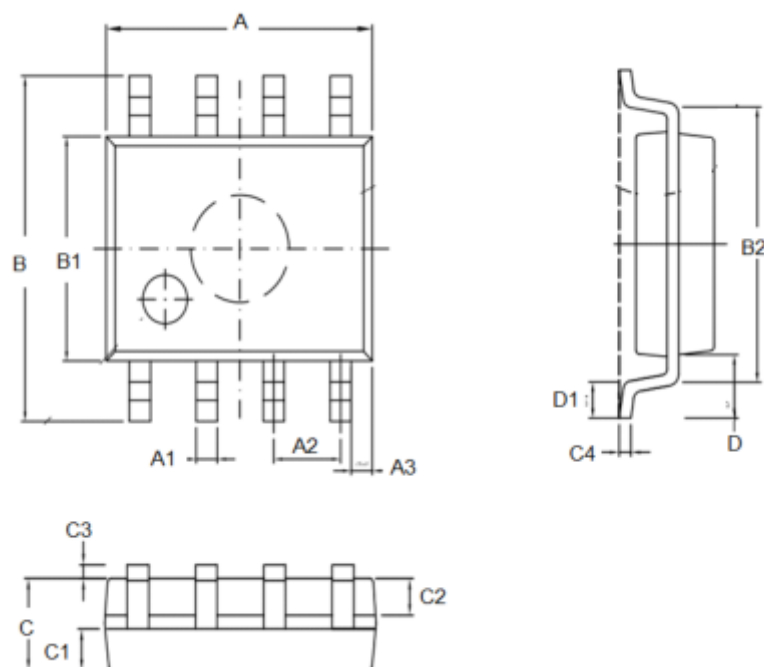


Fig.12 Avalanche Waveform



●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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