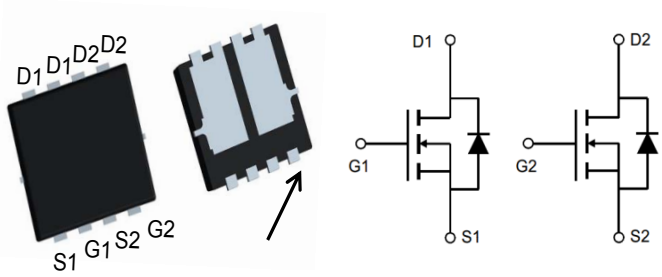
★ 100% EAS Guaranteed
★ Green Device Available
★ Super Low Gate Charge
★ Excellent CdV/dt effect decline
★ Advanced high cell density Trench technology

Product Summary

BVDSS	RDSON	ID
30V	10.5mΩ	25A

PDFN3.3X3.3 Pin Configuration



Description

AGM311MAP is the high cell density trenched N-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM311MAP	AGM311MAP	DFN3.3*3.3	325mm	16mm	5000

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

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℃) (Note 1)	25	A
	Drain Current-Continuous(Tc=100℃)	20	A
IDM (pluse)	Drain Current-Continuous@ Current-Pulsed (Note 2)	40	A
PD	Total Power Dissipation (T_C=25℃)	40	W
	Total Power Dissipation (T_a=25℃)	2.1	W
E_{AS}	Avalanche energy (Note 3)	75	mJ
T_J,T_{STG}	Operating Junction and Storage Temperature Range	-55 To 150	℃

Table 2. Thermal Characteristic

Symbol	Parameter	Typ	Max	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient (Steady State)[1]	---	60	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-Case[1]	---	10	℃/W

Table 3. Electrical Characteristics (TA=25℃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}=10V,I_D=5A		10		S
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=10V, I_D=15A		10.5	15	mΩ
		V_{GS}=4.5V, I_D=15A		15	22	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=15V,VGS=0V, F=1MHZ		850		PF
Coss	Output Capacitance			130		pF
Crss	Reverse Transfer Capacitance			98		pF
Rg	Gate resistance	V_{GS}=0V, V_{DS}=0V,f=1.0MHz		1.9		Ω
Switching Times						
$t_{d(on)}$	Turn-on Delay Time	V_{GS}=10V, V_{DS}=15V, R_L=0.75Ω,R_{GEN}=3.3Ω		4.7		nS
t_r	Turn-on Rise Time			11		nS
$t_{d(off)}$	Turn-Off Delay Time			17		nS
t_f	Turn-Off Fall Time			5.6		nS
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=15V, I_D=10A		10		nC
Q_{gs}	Gate-Source Charge			4		nC
Q_{gd}	Gate-Drain Charge			6.1		nC
Source-Drain Diode Characteristics						
I_{SD}	Source-Drain Current(Body Diode)				25	A
V_{SD}	Forward on Voltage	V_{GS}=0V,I_S=20A			1.2	V

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℃,VDD=15V,V_G=10V, RG=25Ω

Fig.1 Power Dissipation Derating Curve

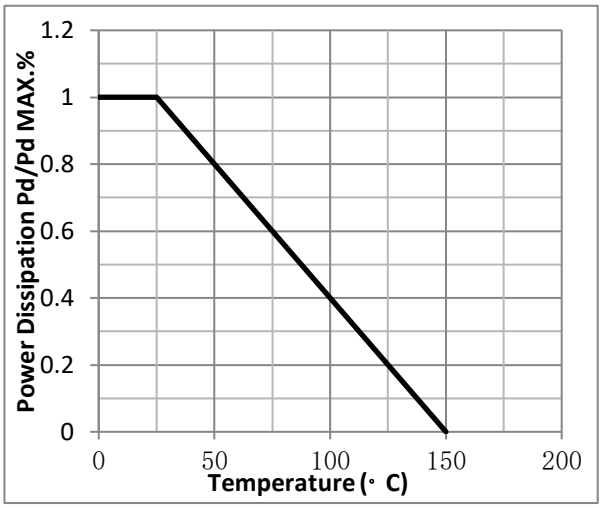


Fig.2 Typical output Characteristics

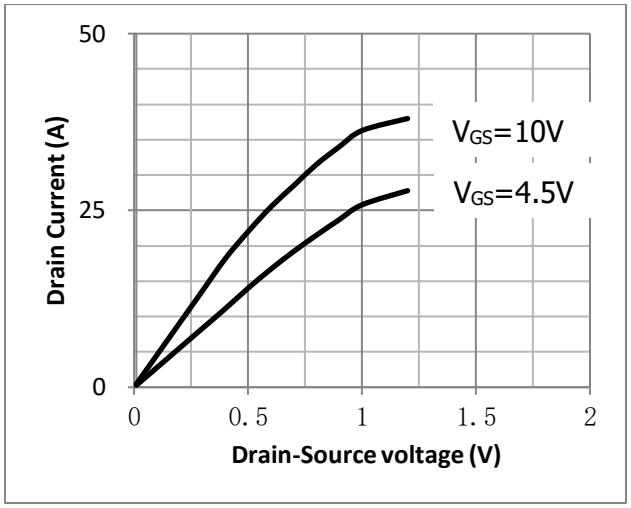


Fig.3 Threshold Voltage V.S Junction Temperature

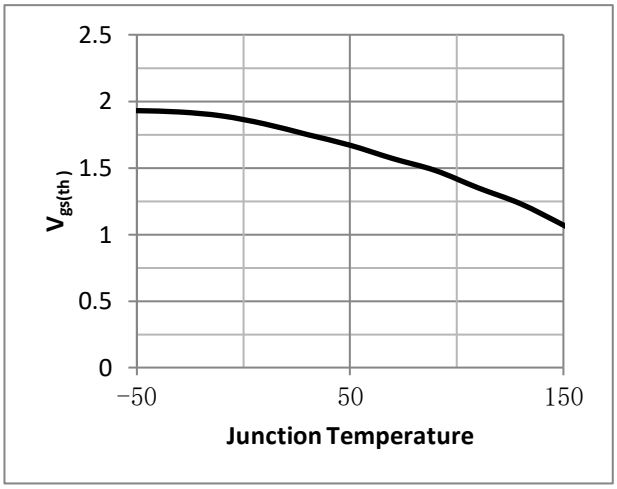


Fig.4 Resistance V.S Drain Current

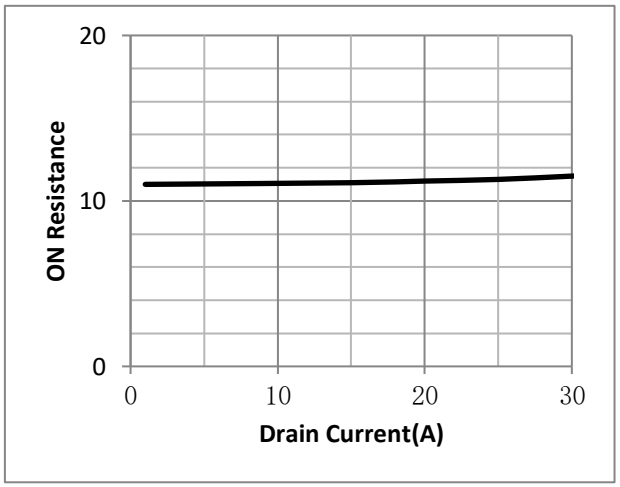


Fig.5 On-Resistance VS Gate Source Voltage

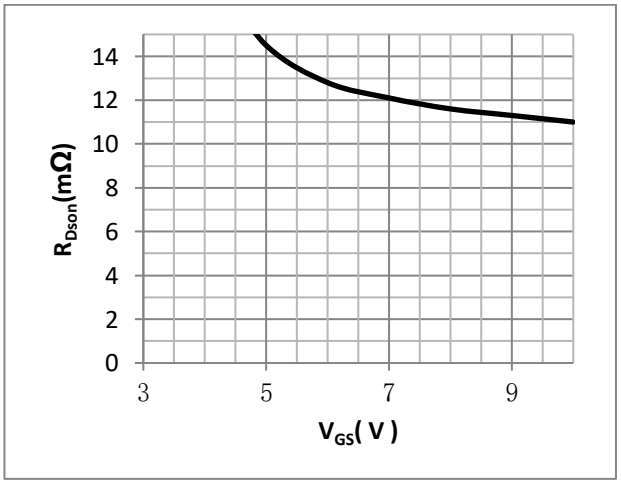


Fig.6 On-Resistance V.S Junction Temperature

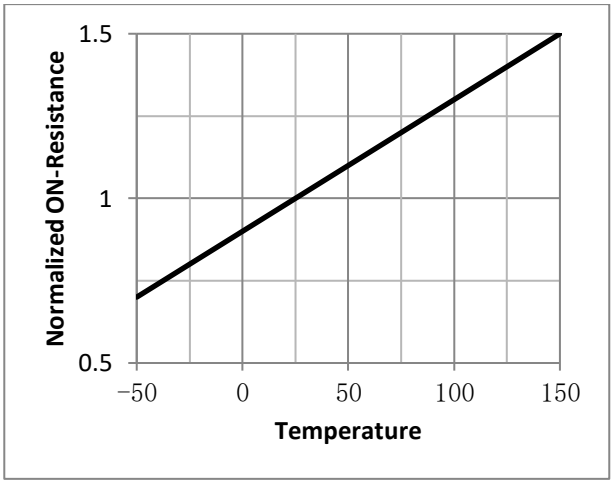


Fig.7 Switching Time Measurement Circuit

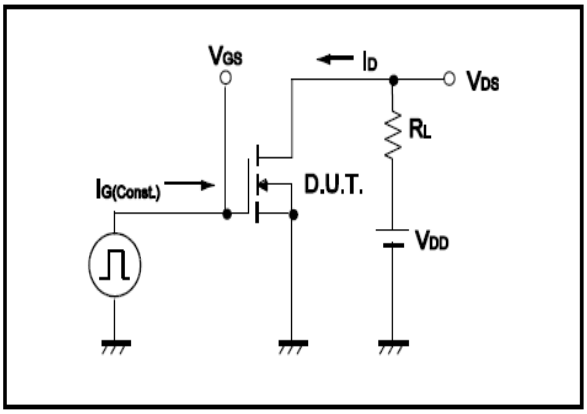


Fig.8 Gate Charge Waveform

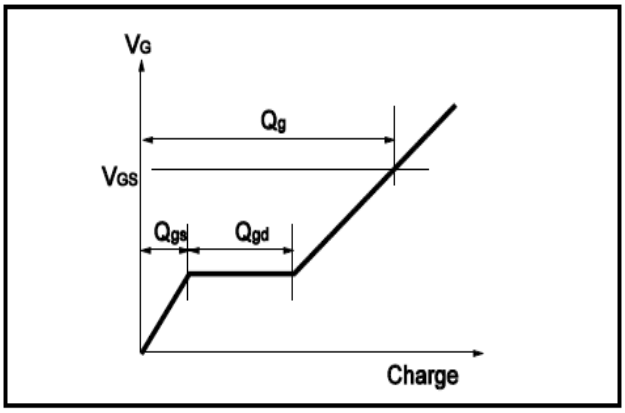


Fig.9 Switching Time Measurement Circuit

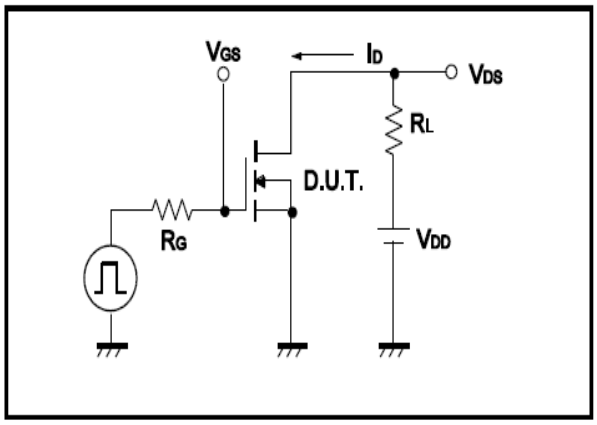


Fig.10 Gate Charge Waveform

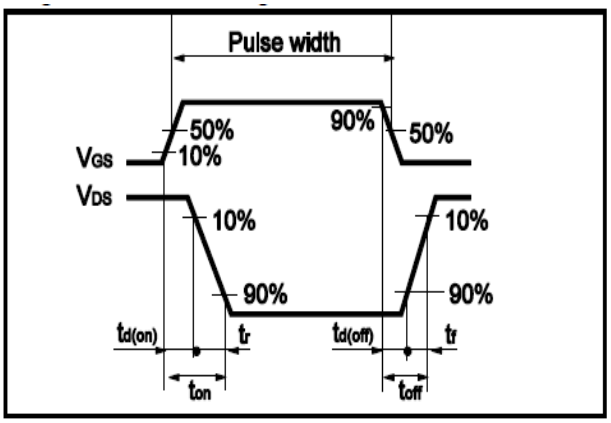


Fig.11 Avalanche Measurement Circuit

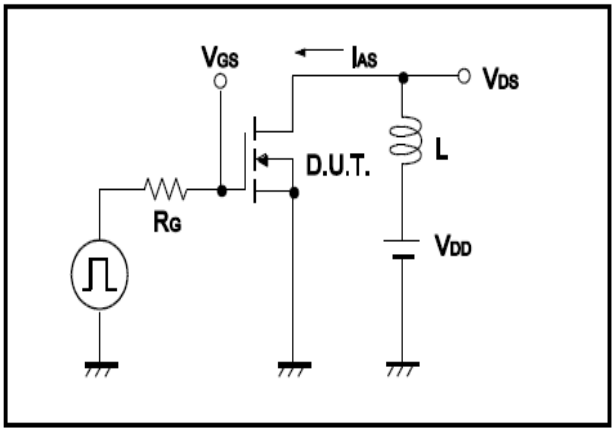
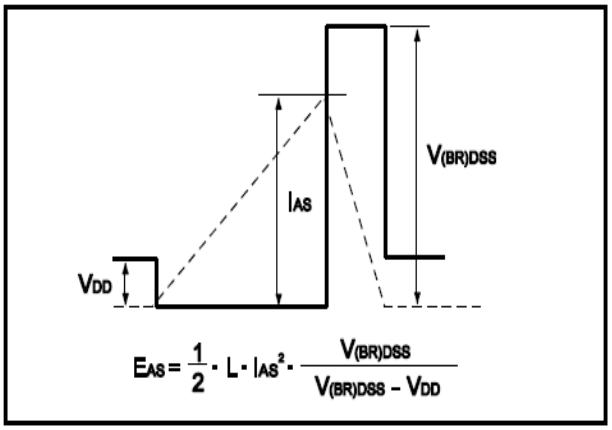
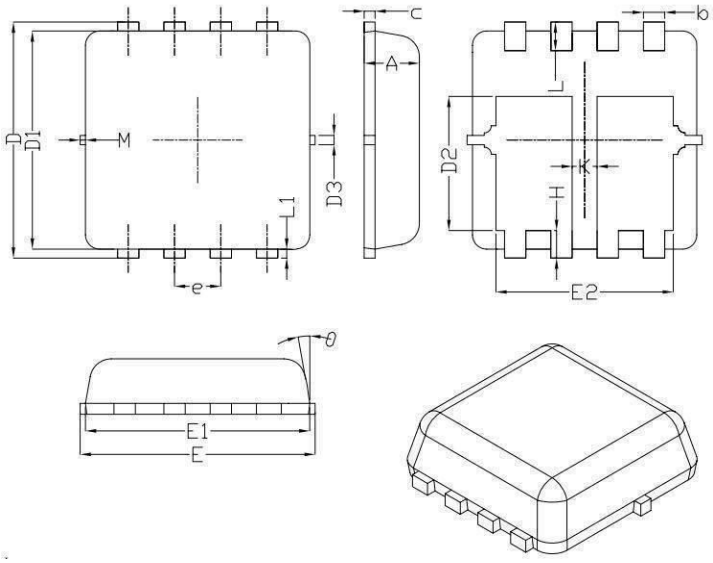


Fig.12 Avalanche Waveform



●Dimensions（DFN3.3×3.3）



Symbol	Dimensions (unit: mm)		
	Min	Typ	Max
A	0.70	0.75	0.80
b	0.25	0.30	0.35
c	0.10	0.15	0.25
D	3.25	3.35	3.45
D1	3.00	3.10	3.20
D2	1.78	1.88	1.98
D3	--	0.13	--
E	3.20	3.30	3.40
E1	3.00	3.15	3.20
E2	2.39	2.49	2.59
e		0.65 BSC	
H	0.30	0.39	0.50
L	0.30	0.40	0.50
L1	--	0.13	--
K	0.30	--	--
θ	--	10°	12°
M	*	*	0.15

* Not Specified

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This document is the second version issued on October 10, 2019. This document replaces andReplace all previously provided information.