● General Description

The AGM15P30AS 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

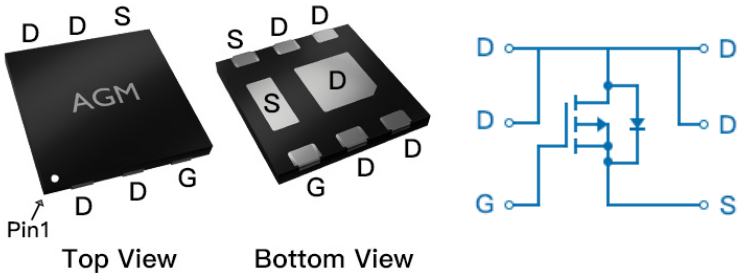
• Application

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

Product Summary

BVDSS	RDSON	ID
-15V	29mΩ	-5A

DFN2*2 Pin Configuration



Top View Bottom View

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM15P30	AGM15P30AS	DFN2*2	178mm	8mm	3000

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

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	-15	V
VGS	Gate-Source Voltage (VDS=0V)	±10	V
ID	Drain Current-Continuous(Tc=25℃) **(Note 1)**	-5.0	A
	Drain Current-Continuous(Tc=100℃)	-3.4	A
IDM (pluse)	Drain Current-Pulsed **(Note 2)**	-20	A
PD	Maximum Power Dissipation(Tc=25℃)	2.1	w
	Maximum Power Dissipation(Tc=100℃)	0.85	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]	---	60	℃/W

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV_{DSS}	Drain-Source Breakdown Voltage	VGS=0V ID=-250μA	-15	-18	--	V
I_{DSS}	Zero Gate Voltage Drain Current	VDS=-15V,VGS=0V	--	--	-1	μA
I_{GSS}	Gate-Body Leakage Current	VGS=±10V,VDS=0V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	VDS=VGS,ID=-250μA	-0.4	-0.6	-1.0	V
gFS	Forward Transconductance	VDS=-5V,ID=-3A	--	5	--	S
$R_{DS(on)}$	Drain-Source On-State Resistance	VGS=-4.5V, ID=-3.5A	--	29	40	mΩ
		VGS=-2.5V, ID=-3A	--	38.5	50	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=-10V,VGS=0V, F=1MHZ	--	661	--	pF
Coss	Output Capacitance		--	304	--	pF
Crss	Reverse Transfer Capacitance		--	268	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	18	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	ID =-3.3A VDS = -10V VGS =-4.5V RG = 10Ω	--	12	--	nS
tr	Turn-on Rise Time		--	32	--	nS
td(off)	Turn-Off Delay Time		--	30	--	nS
tf	Turn-Off Fall Time		--	11	--	nS
Qg	Total Gate Charge	VGS=-10V, VDS=-10V, ID=-3.3A	--	12	--	nC
Qgs	Gate-Source Charge		--	0.7	--	nC
Qgd	Gate-Drain Charge		--	1.6	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	-5.0	A
VSD	Forward on Voltage	VGS=0V,IS=-3.5A	--	--	-1.2	V
trr	Reverse Recovery Time	Isd=-3.5A , dI/dt=100A/μs , TJ=25℃	--	--	--	ns
Qrr	Reverse Recovery Charge		--	--	--	nc

Notes 1.The maximum current rating is package limited.

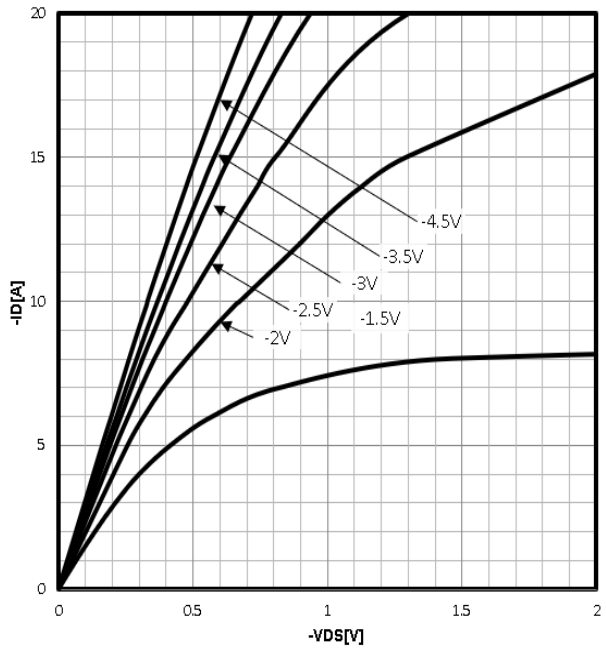
Notes 2.Repetitive Rating: Pulse width limited by maximum junction temperature

Notes 3.EAS condition: TJ=25℃

Characteristics Curve:

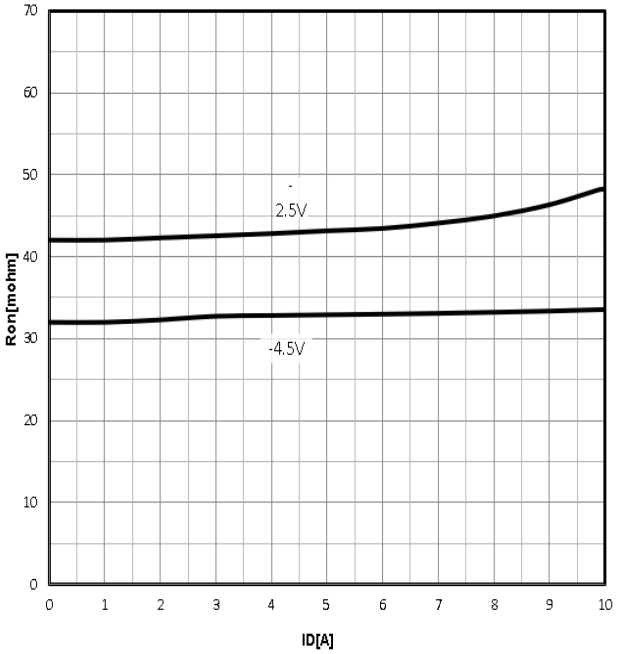
Typ. output characteristics

$I_D=f(V_{DS})$



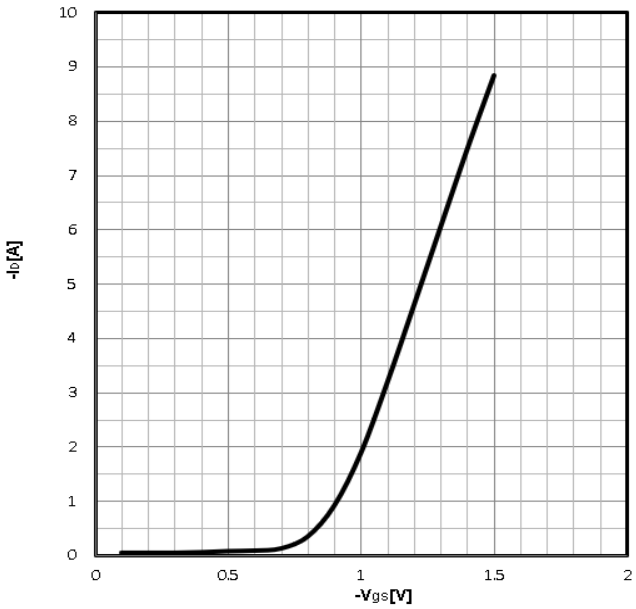
Typ. drain-source on resistance

$R_{DS(on)}=f(I_D)$



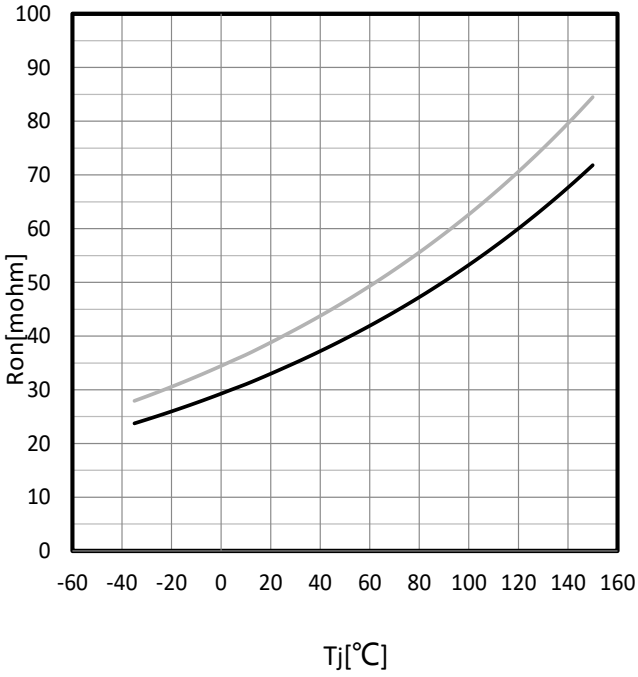
Typ. transfer characteristics

$I_D=f(V_{GS})$

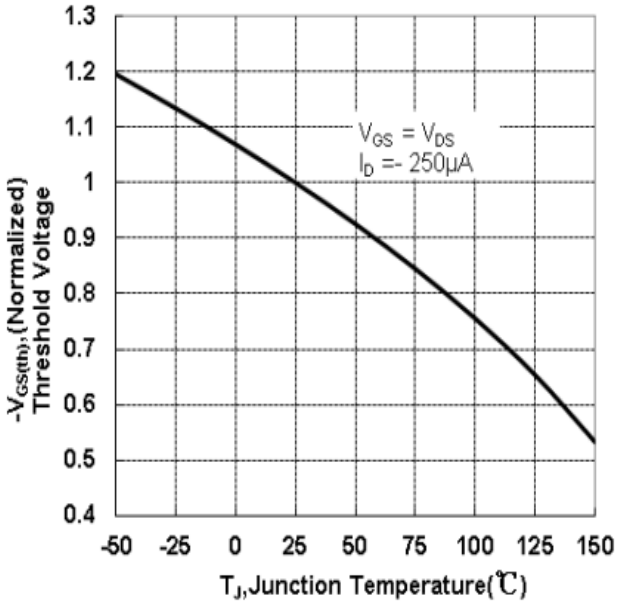


Drain-source on-state resistance

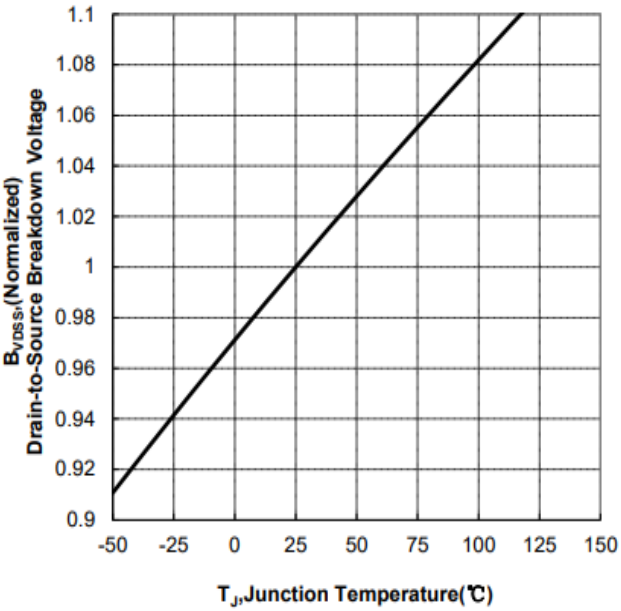
$R_{DS(on)}=f(T_j);I_D=-3.5A;$



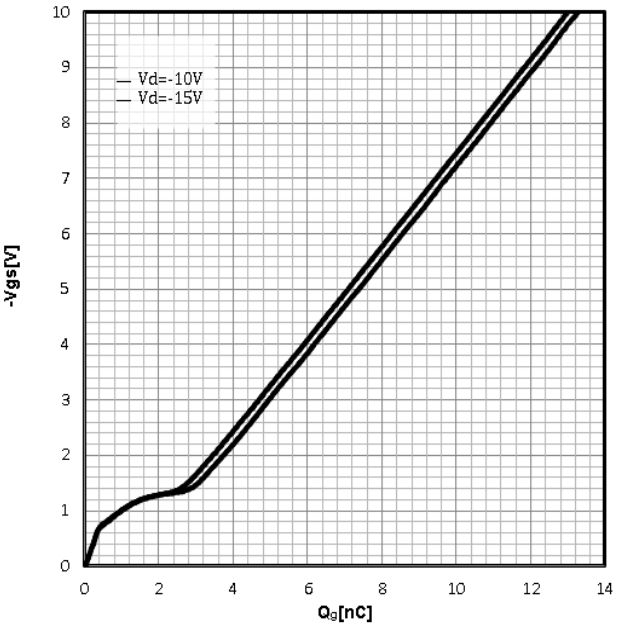
Gate Threshold Voltage
$-V_{TH}=f(T_j)$; I_D=-250uA



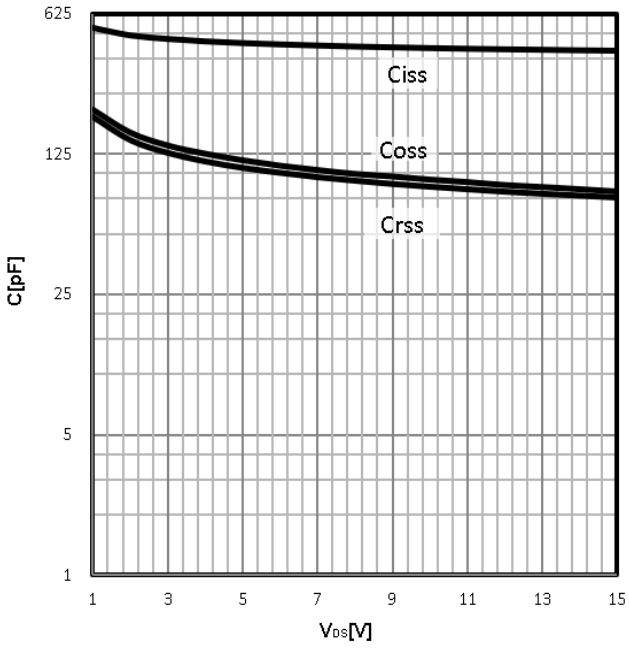
Drain-source breakdown voltage
$V_{BR(DSS)}=f(T_j)$; I_D=-250uA



Typ. gate charge
$V_{GS}=f(Q_g)$; I_D=-3.3A

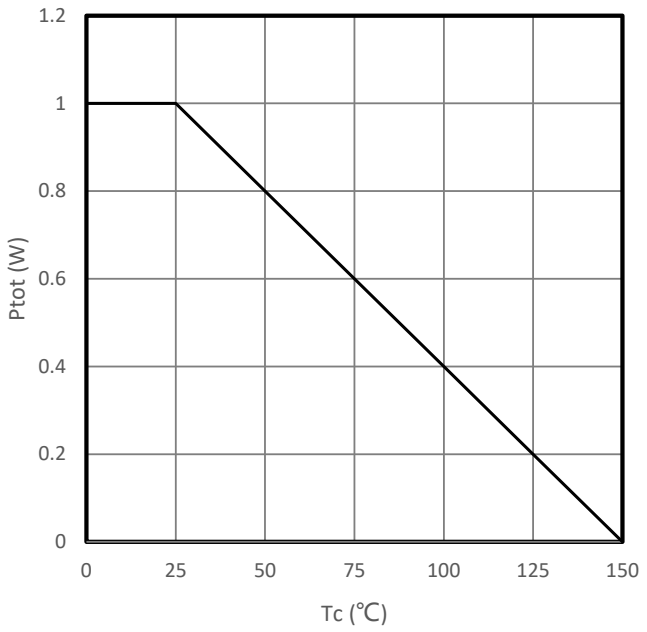


Typ. capacitances
C =f(V_{DS}); V_{GS}=0V; f =1MHz



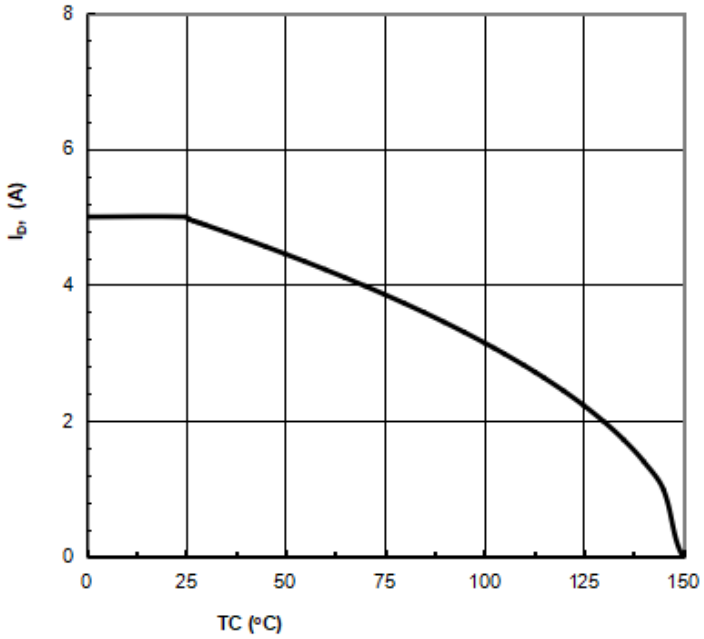
Power Dissipation

$P_{tot}=f(T_C)$



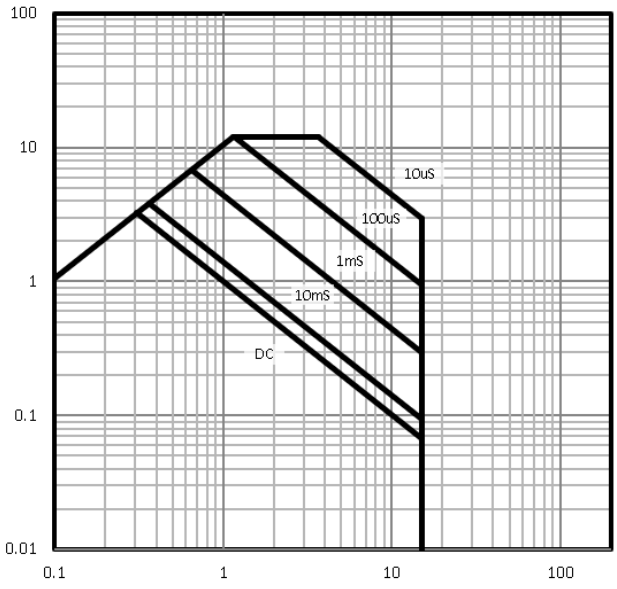
Maximum Drain Current

$-I_D=f(T_C)$



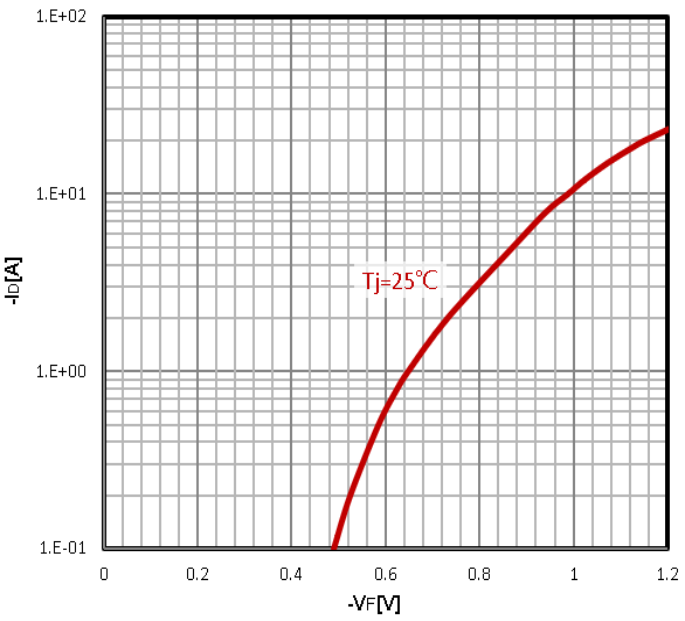
Safe operating area

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



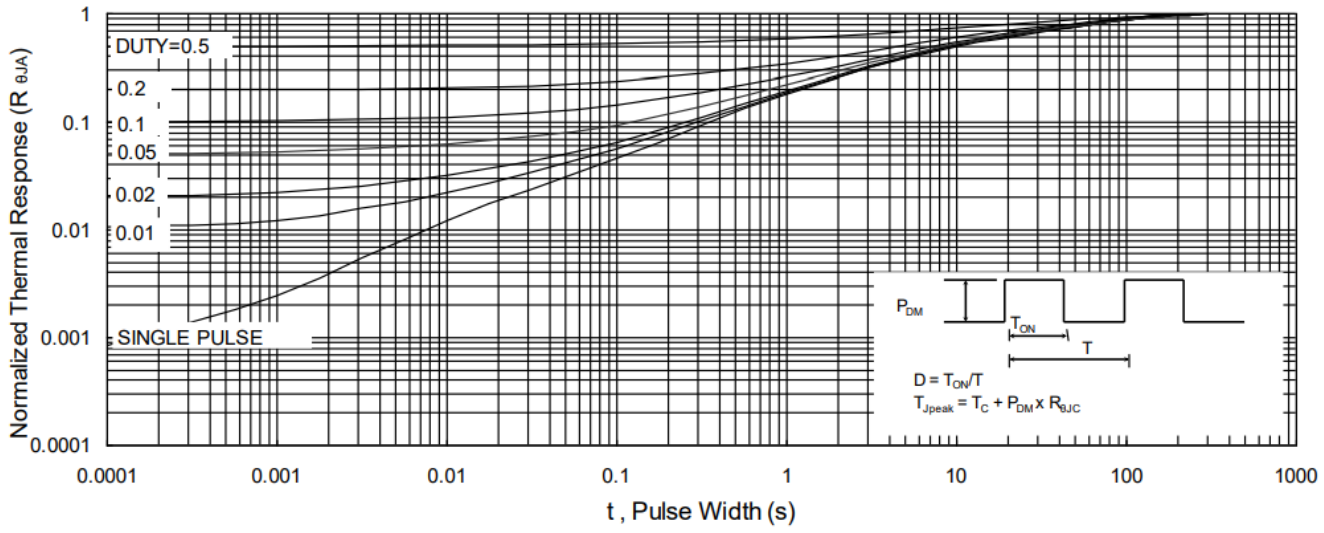
Body Diode Forward Voltage Variation

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

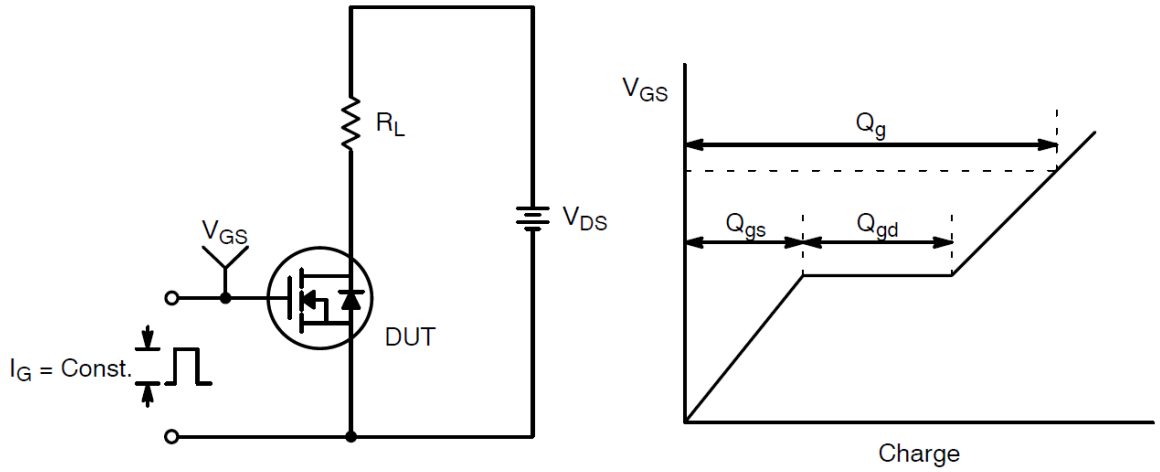


Max. transient thermal impedance

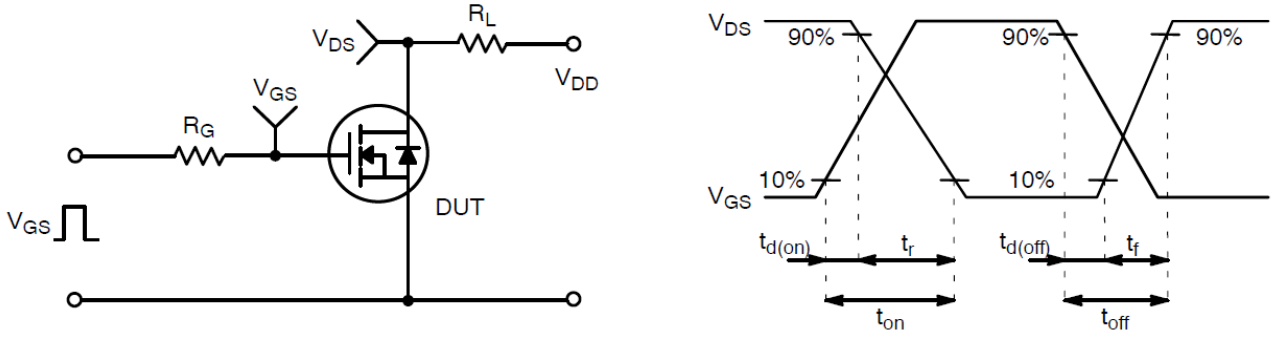
$Z_{thJC}=f(t_p)$



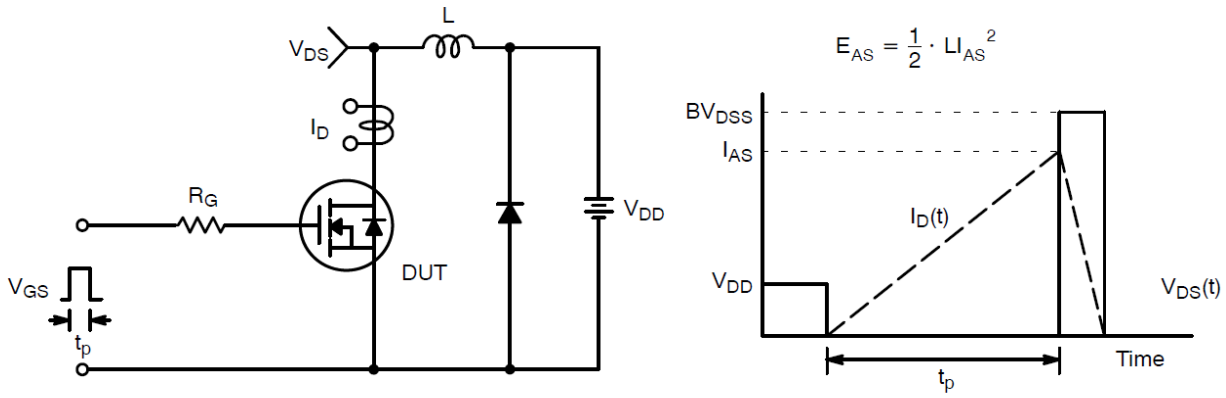
Test Circuit and Waveform:



Gate Charge Test Circuit & Waveform

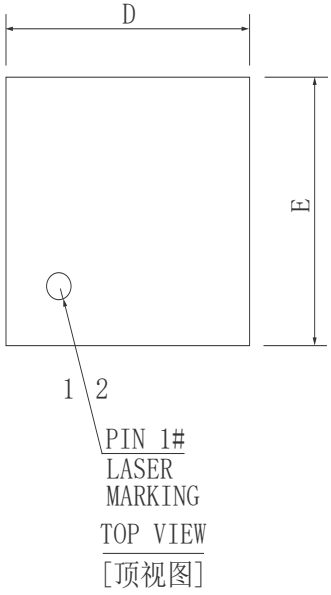


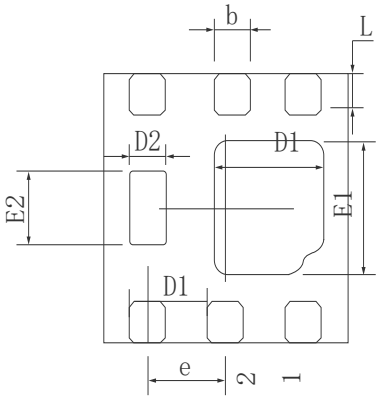
Resistive Switching Test Circuit & Waveforms



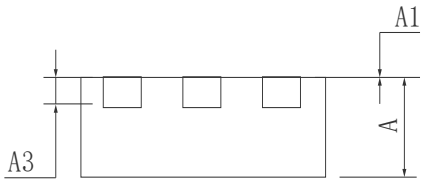
Unclamped Inductive Switching Test Circuit & Waveforms

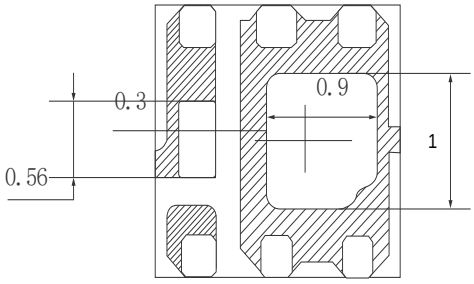
●Dimensions（DFN2*2）

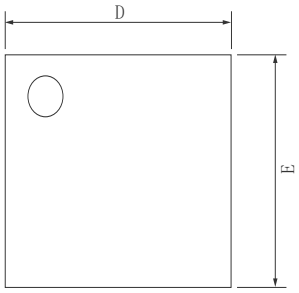


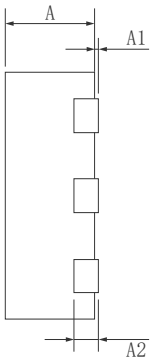


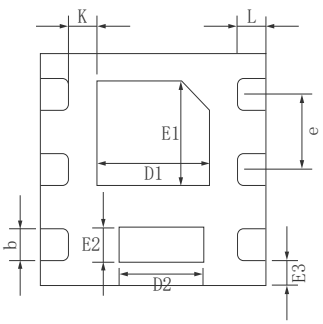
Symbol	Millimeters		
	Min	Nom	Max
A	0.700	0.750	0.800
A1	0.000	0.020	0.050
A3	0.203REF		
b	0.250	0.300	0.350
D	1.900	2.000	2.100
D1	0.850	0.900	0.950
D2	0.250	0.300	0.350
e	0.650BSC		
E	1.900	2.000	2.100
E1	0.950	1.000	1.050
E2	0.510	0.560	0.610
L	0.250	0.300	0.350





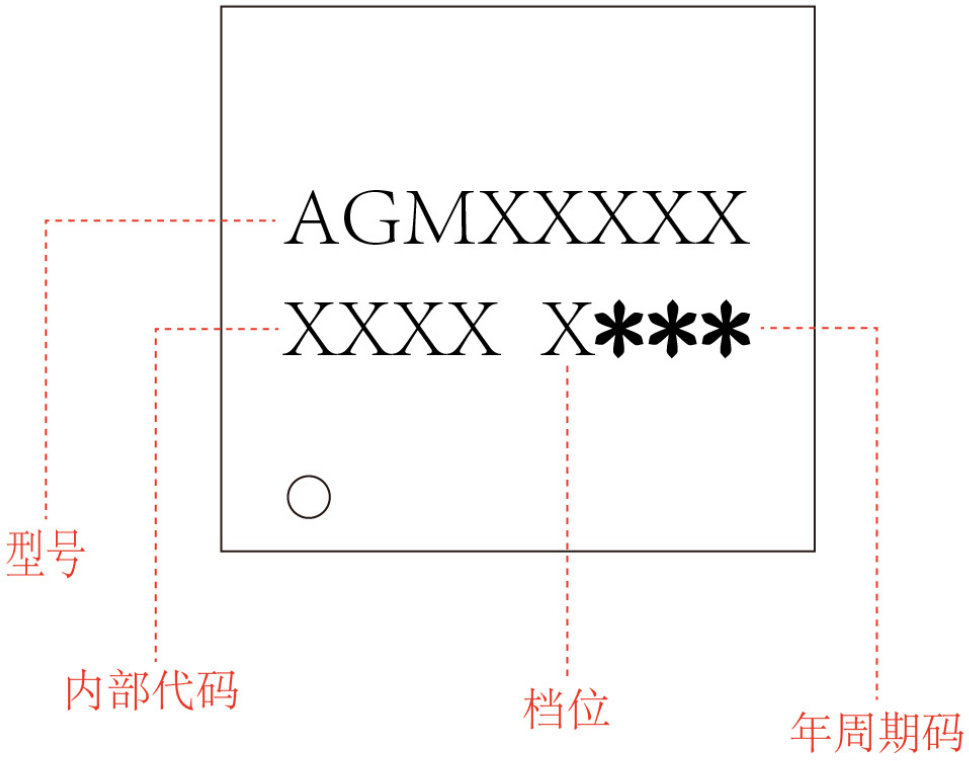






SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.50	0.55	0.60
	0.70	0.75	0.80
A1	0.00	—	0.05
A2	0.203TIY		
b	0.22	0.27	0.32
D	1.95	2.00	2.05
D1	0.90	1.00	1.10
D2	0.70	0.75	0.80
E	1.95	2.00	2.05
E1	0.85	0.90	0.95
E2	0.25	0.30	0.35
E3	0.215 TIY		
e	0.65 BSC		
K	0.25 BSC		
L	0.20	—	0.30

DFN2*2
Marking Instructions:



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This document is the third version issued on March 20th, 2024. This document replaces all previously provided information.