• General Description

The AGM30P25MBP 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.

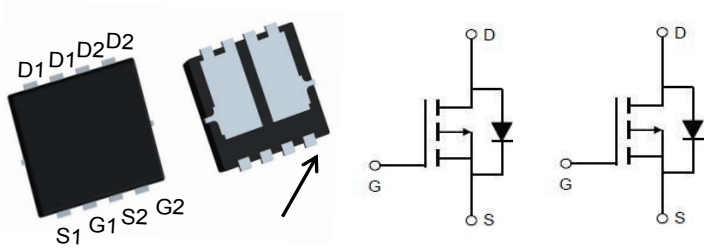
Product Summary

BVDSS	RDSON	ID
-30V	20mΩ	-8A

• 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

PDFN3*3 Pin Configuration



• Application

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

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM30P25MB	AGM30P25MBP	PDFN3.3*3.3	330mm	12mm	5000

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

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	-30	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(Tc=25℃) **(Note 1)**	-8	A
	Drain Current-Continuous(Tc=100℃)	-4.8	A
IDM (pluse)	Drain Current-Continuous@ Current-Pulsed **(Note 2)**	-32	A
PD	Maximum Power Dissipation(Tc=25℃)	28	w
	Maximum Power Dissipation(Tc=100℃)	11	w
EAS	Avalanche energy **(Note 3)**	65	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]	---	50	℃/W
RθJC	Thermal Resistance Junction-Case[1]	---	4.4	℃/W

Table 2. P-Channel Electrical Characteristics (Tc=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=-250μA	-30	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=-30V,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	-1.5	-2.5	V
gFS	Forward Transconductance	VDS=-10V,ID=-4A	--	6	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-5A	--	20	24	mΩ
		VGS=-4.5V, ID=-4A	--	29	34	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=-15V,VGS=0V, F=1MHZ	--	652	--	pF
Coss	Output Capacitance		--	95	--	pF
Crss	Reverse Transfer Capacitance		--	85.7	--	pF
Switching Times						
td(on)	Turn-on Delay Time	VGS=-10V,VDS=-15V, ID=-4A,RGEN=3Ω, RL=3.6Ω	--	8	--	nS
tr	Turn-on Rise Time		--	4	--	nS
td(off)	Turn-Off Delay Time		--	26	--	nS
tf	Turn-Off Fall Time		--	12.5	--	nS
Qg	Total Gate Charge	VGS=-10V, VDS=-15V, ID=-1A	--	14	--	nC
Qgs	Gate-Source Charge		--	1.34	--	nC
Qgd	Gate-Drain Charge		--	2.99	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	-8	A
VSD	Forward on Voltage	VGS=0V,IS=-5A	--	--	-1.2	V
trr	Reverse Recovery Time	IF=-5A , dI/dt=100A/μs , TJ=25℃	--	--	--	ns
Qrr	Reverse Recovery Charge		--	--	--	nc

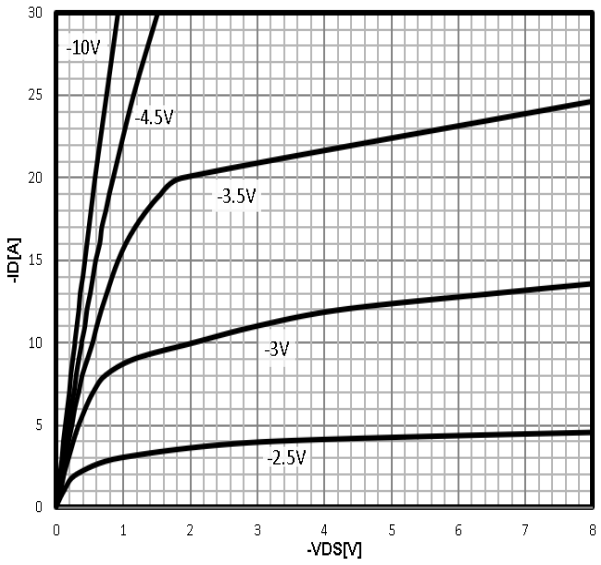
Notes 1.The maximum current rating is package limited.

Notes 2.Repetitive Rating: Pulse width limited by maximum junction temperature Notes 3.EAS condition: TJ=25℃

Characteristics Curve:

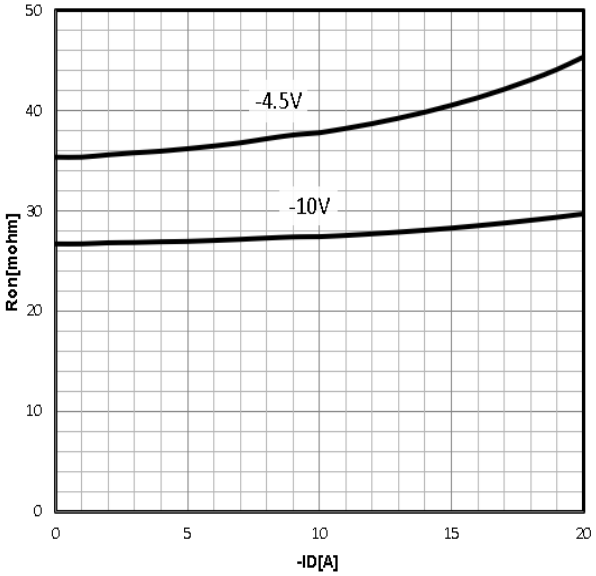
Typ. output characteristics

$I_D=f(V_{DS})$



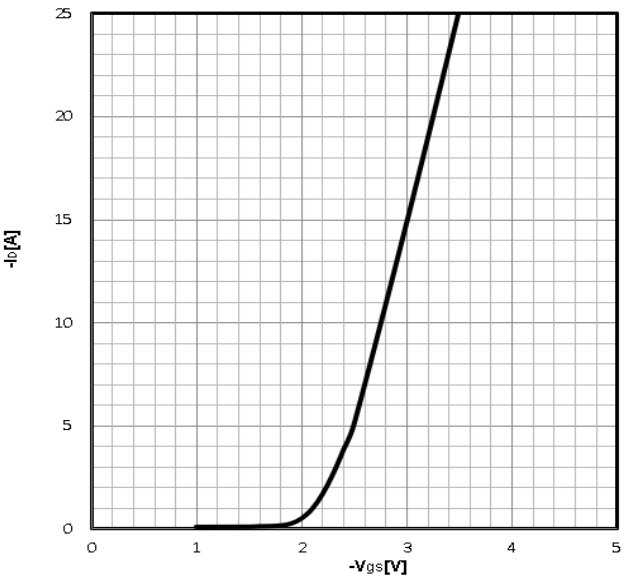
Typ. drain-source on resistance

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



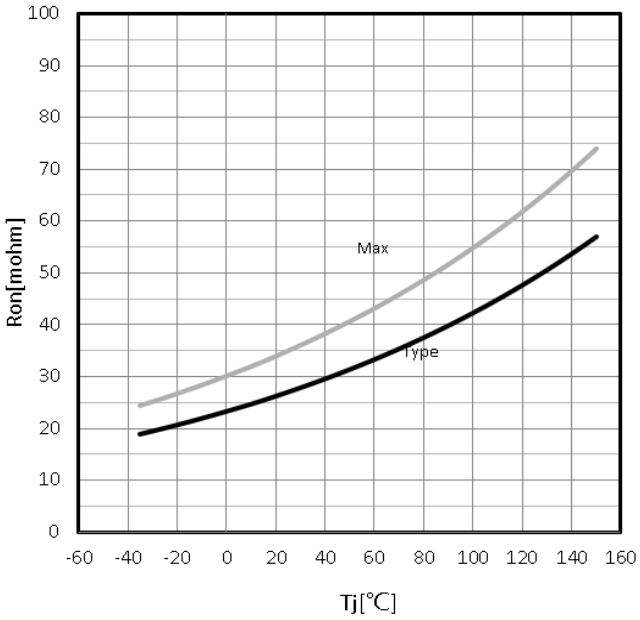
Typ. transfer characteristics

$I_D=f(V_{GS})$



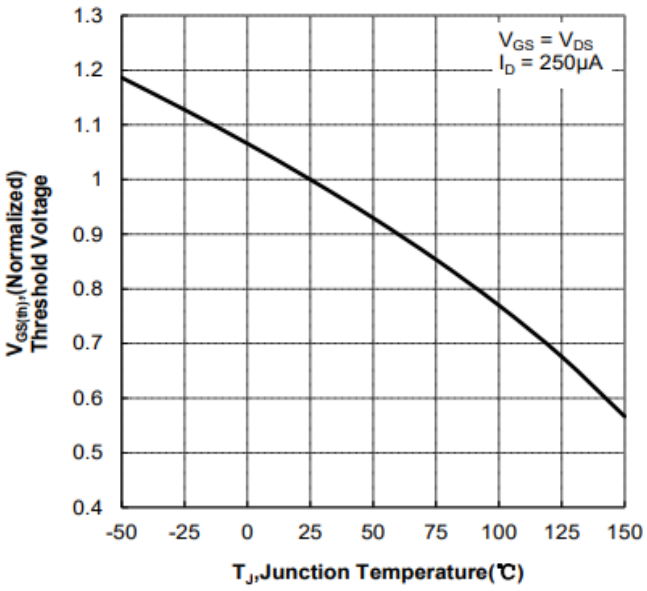
Drain-source on-state resistance

$R_{DS(on)}=f(T_j);I_D=-5A;\ V_{GS}=-10V$



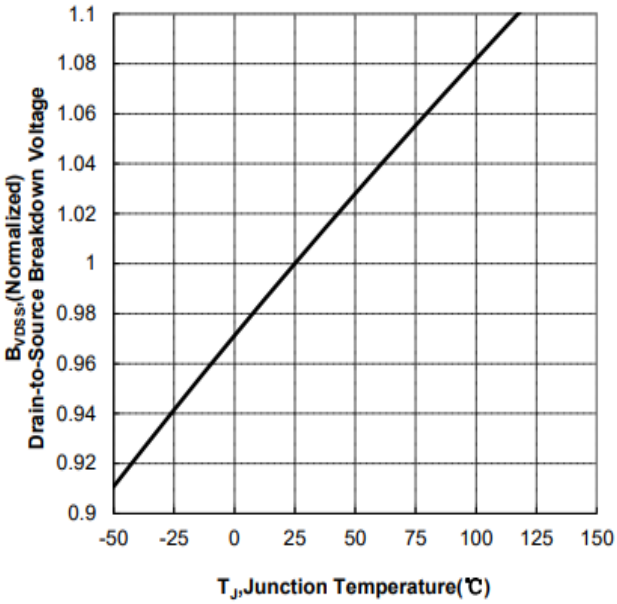
Gate Threshold Voltage

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



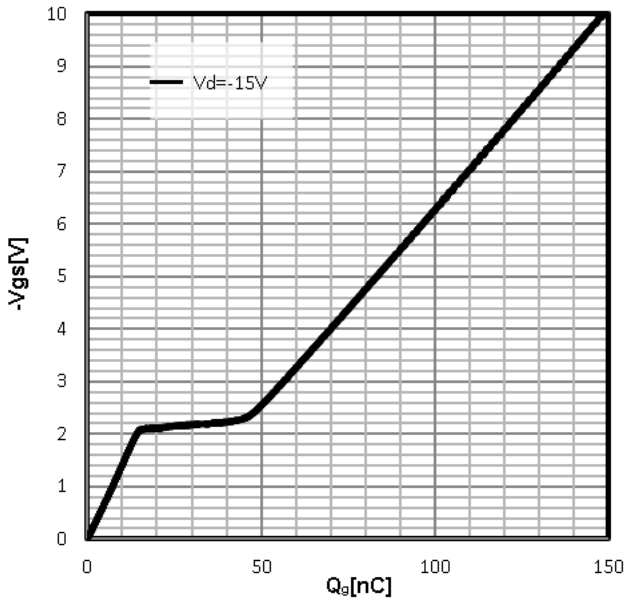
Drain-source breakdown voltage

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



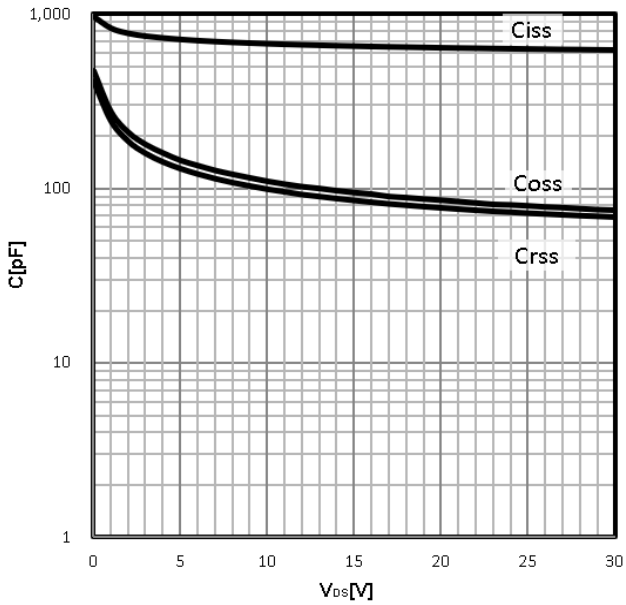
Typ. gate charge

$V_{GS}=f(Q_{gate})$; I_D=-1A



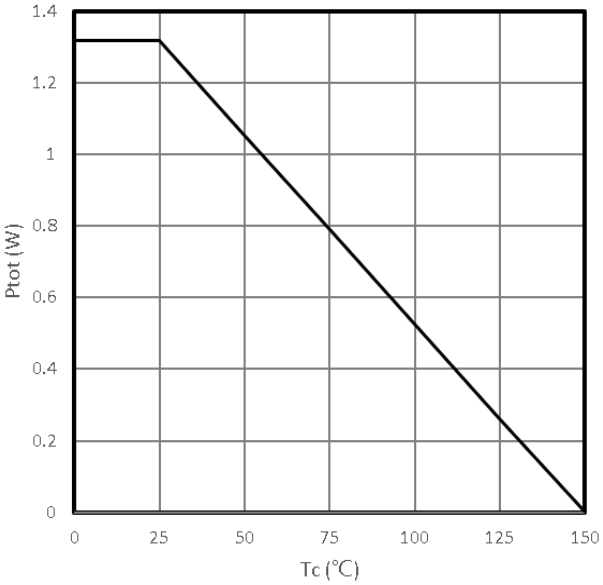
Typ. capacitances

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



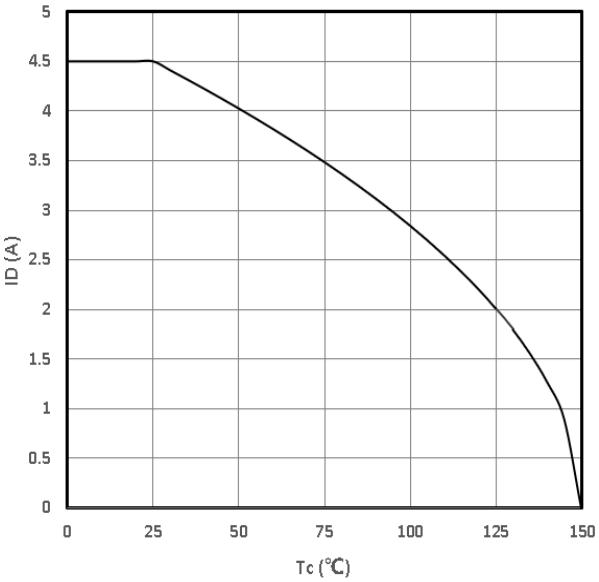
Power Dissipation

$P_{tot}=f(T_C)$



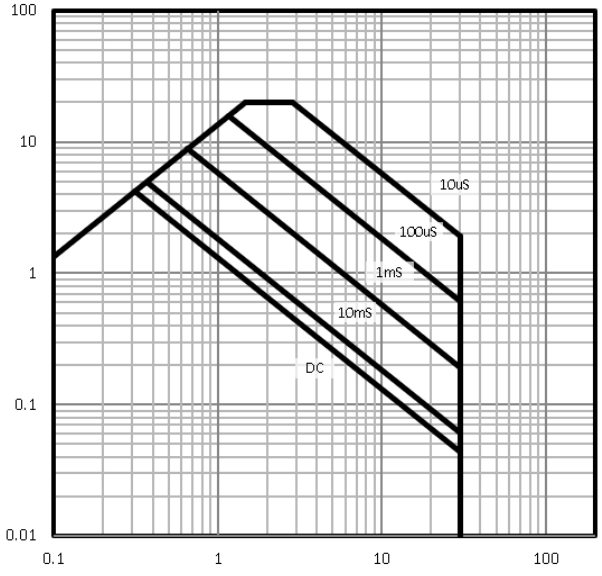
Maximum Drain Current

$-I_D=f(T_C)$



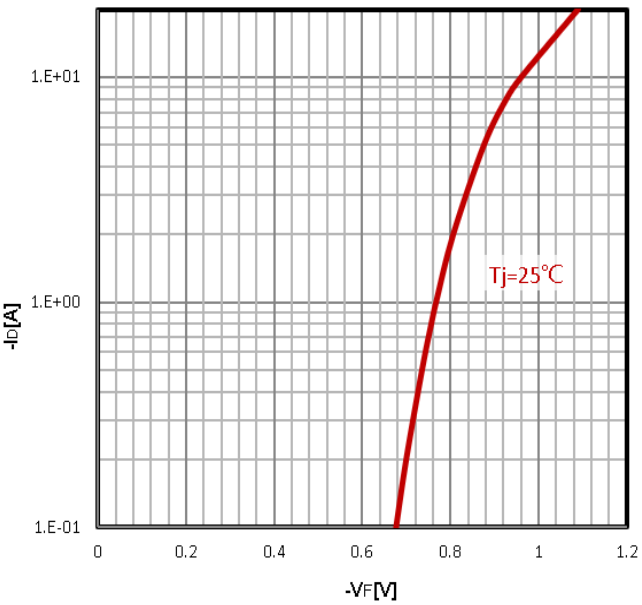
Safe operating area

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



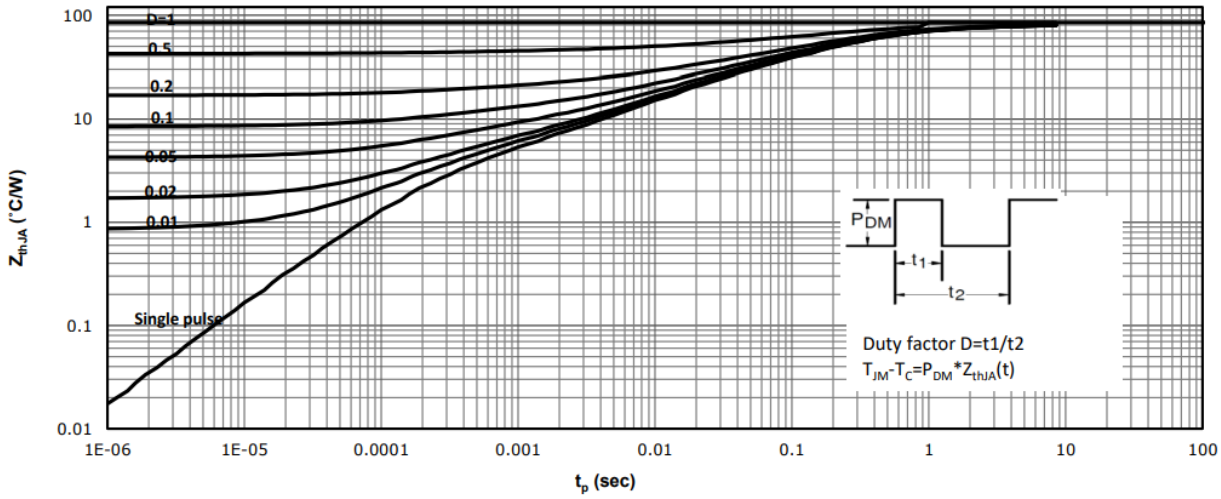
Body Diode Forward Voltage Variation

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

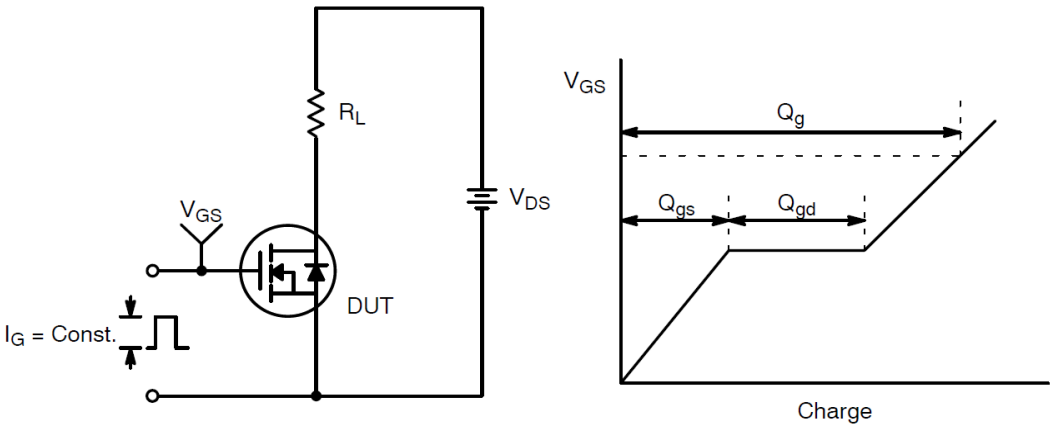


Max. transient thermal impedance

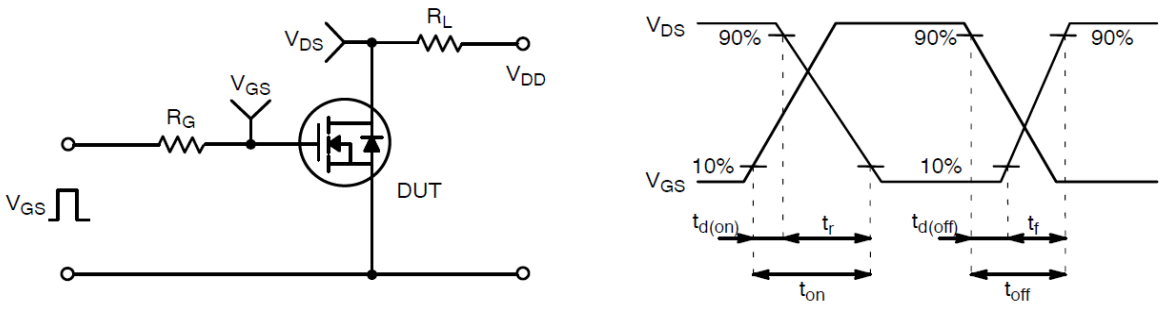
$Z_{thJC}=f(t_p)$



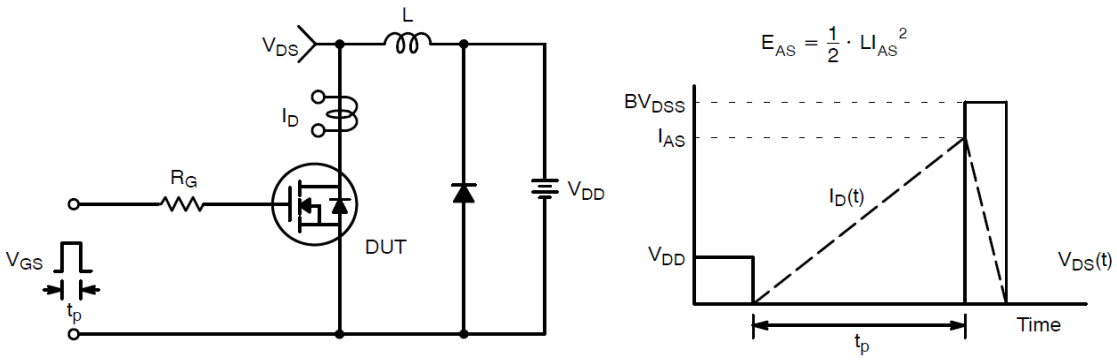
Test Circuit and Waveform:



Gate Charge Test Circuit & Waveform

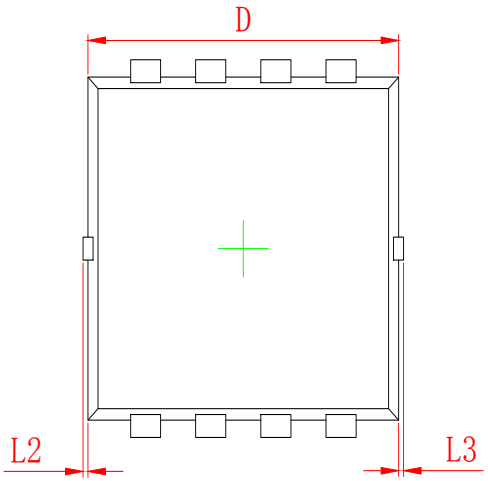


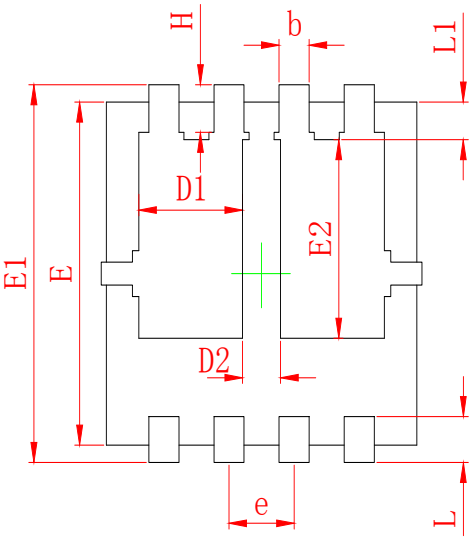
Resistive Switching Test Circuit & Waveforms



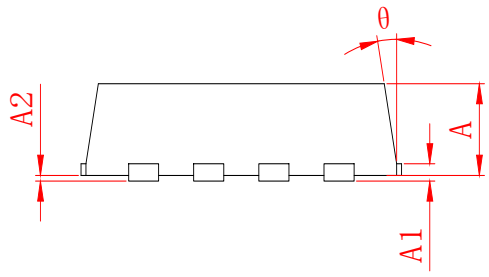
Unclamped Inductive Switching Test Circuit & Waveforms

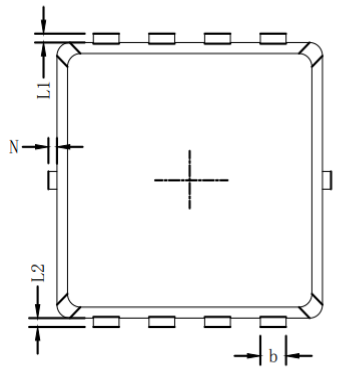
●Dimensions（PDFN3.3×3.3）

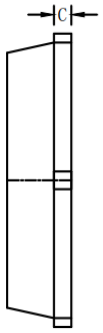


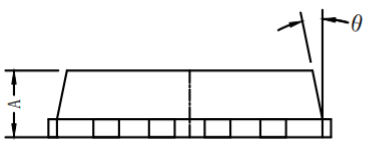


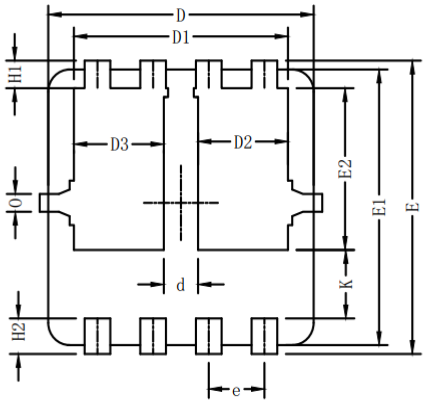
SYMBOL	MILLIMETER	
	MIN	MAX
A	0.700	0.900
A1	0.152 REF.	
A2	0~0.05	
D	3.000	3.200
D1	0.935	1.135
D2	0.280	0.480
E	2.900	3.100
E1	3.150	3.450
E2	1.535	1.935
b	0.200	0.400
e	0.550	0.750
L	0.300	0.500
L1	0.180	0.480
L2	0~0.100	
L3	0~0.100	
H	0.315	0.515
θ	8°	12°











Symbols	Millimeters		
	MIN.	NOM.	MAX.
A	0.65	0.75	0.85
b	0.25	0.30	0.35
C	0.15	0.20	0.25
D	3.00	3.10	3.20
D1	2.40	2.50	2.60
D2/D3	1.00	1.05	1.10
d	0.30	0.40	0.50
E	3.20	3.30	3.40
E1	3.00	3.10	3.20
E2	1.72	1.82	1.92
e	0.65 BSC.		
H1	0.21	0.31	0.41
H2	0.30	0.40	0.50
K	0.67	0.77	0.87
L1/L2	0.10 REF.		
θ	11°	12°	13°
N	0	-	0.15
O	0.2 REF.		

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