

General Description

The AGM2N7002K3 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
- With ESD

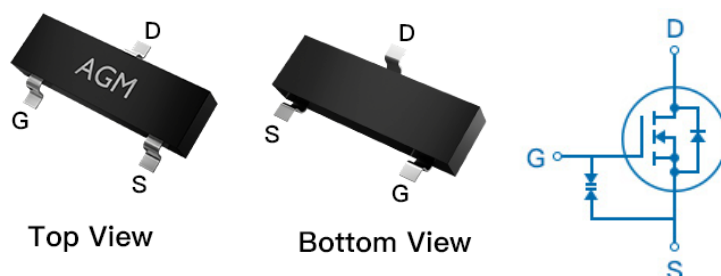
Application

- Electronic Ballast
- Electronic Transformer
- Switch Mode Power Supply

Product Summary

BVDSS	RDSON	ID
60V	1.9Ω	0.3A

SOT23 Pin Configuration



Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
7002K	AGM2N7002K3	SOT23	178mm	8mm	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(TA=25°C) (Note 1)	0.3	A
	Drain Current-Continuous(TA=100°C)	0.18	A
IDM (pluse)	Drain Current-Pulsed (Note 2)	1.2	A
PD	Maximum Power Dissipation(TA=25°C)	1.25	w
	Maximum Power Dissipation(TA=100°C)	0.5	w
EAS	Avalanche energy (Note 3)	--	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) ¹	---	100	°C/W

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

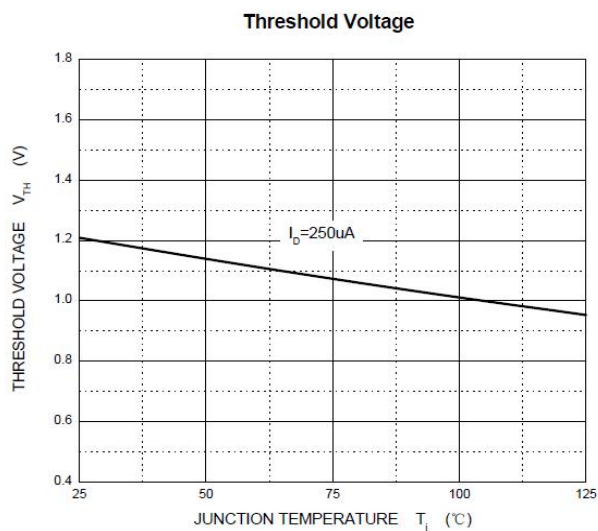
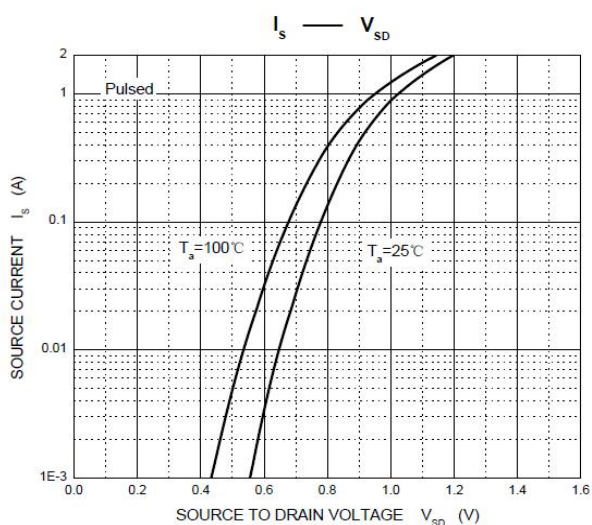
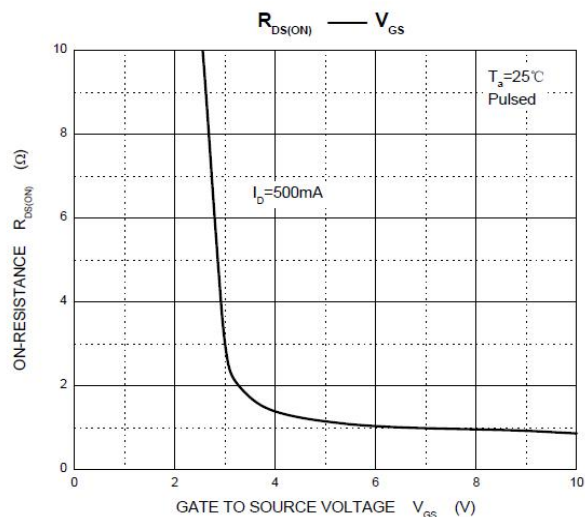
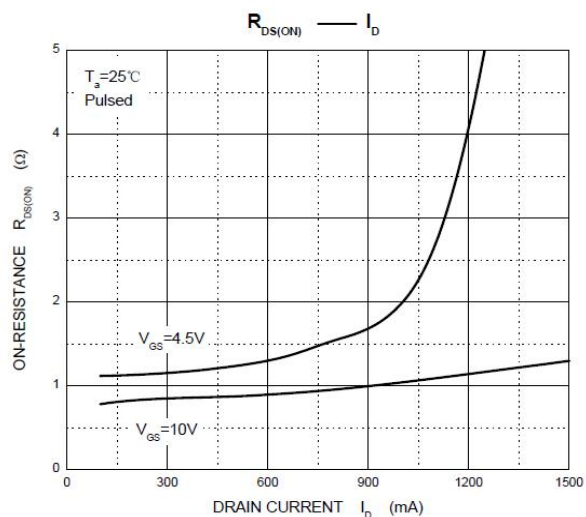
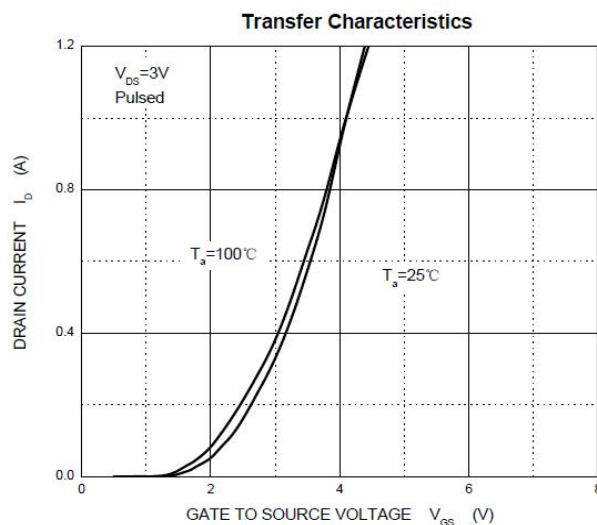
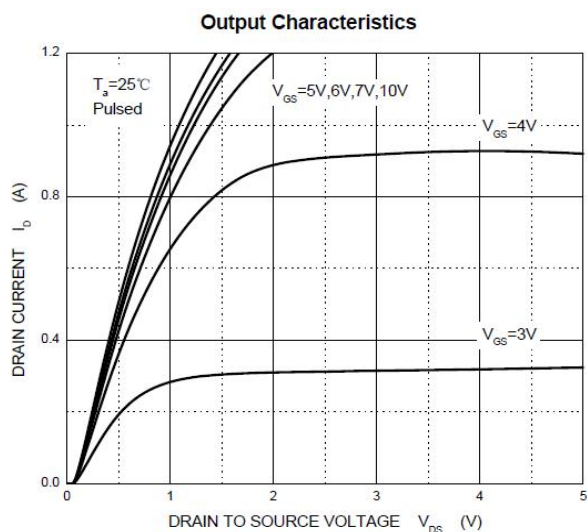
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=10μA	60	67	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=60V,VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±10	μA
VGS(th)	Gate Threshold Voltage	VDS=VGS,ID=250μA	1.2	1.5	2.2	V
gFS	Forward Transconductance	VDS=2V,ID=0.2A	--	130	--	mS
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=0.3A	--	1.9	2.5	Ω
		VGS=4.5V, ID=0.2A	--	2.0	3.0	Ω
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=30V,VGS=0V, F=1MHZ	--	21	--	pF
Coss	Output Capacitance		--	9	--	pF
Crss	Reverse Transfer Capacitance		--	4	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	--	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	VDD=50V, VGS=10V ID=0.2A, RGEN=50Ω	--	2	--	nS
tr	Turn-on Rise Time		--	15	--	nS
td(off)	Turn-Off Delay Time		--	7	--	nS
tf	Turn-Off Fall Time		--	20	--	nS
Qg	Total Gate Charge	VGS=4.5V, VDS=10V, ID=0.3A	--	1.7	--	nC
Qgs	Gate-Source Charge		--	0.3	--	nC
Qgd	Gate-Drain Charge		--	0.6	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	0.3	A
VSD	Forward on Voltage	VGS=0V,ISD=0.3A	--	--	1.2	V
trr	Reverse Recovery Time	VDD=0.3V,IF=0.3A , dI/dt=100A/μs , TJ=25℃	--		--	ns
Qrr	Reverse Recovery Charge		--		--	nc

Notes 1.The maximum current rating is package limited.

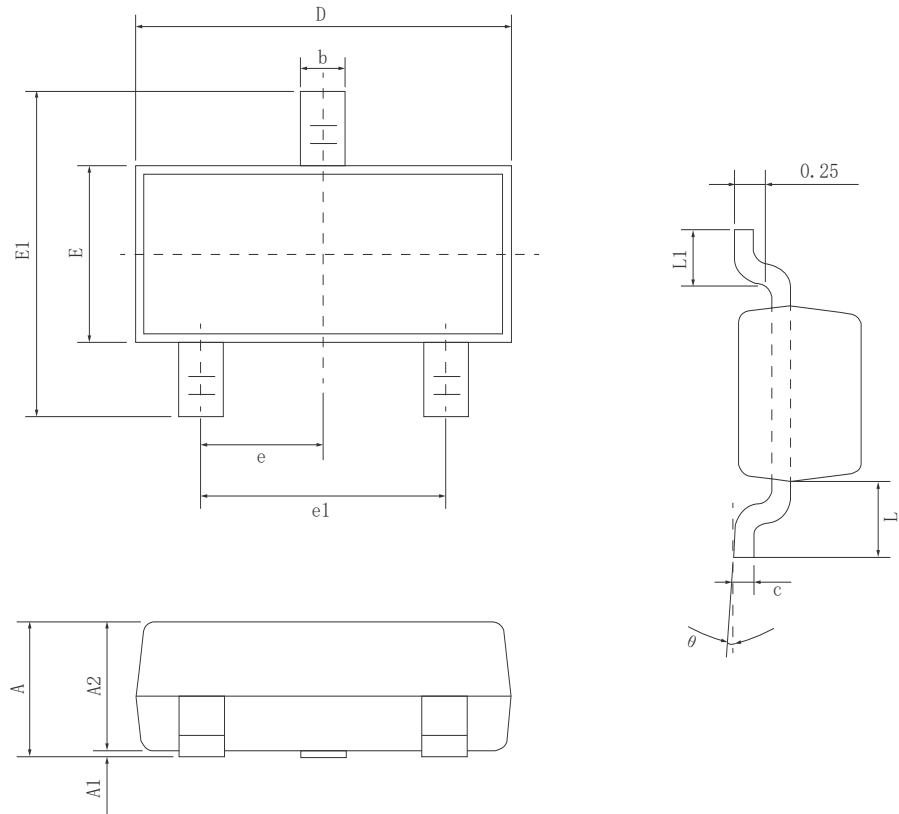
Notes 2.Repetitive Rating: Pulse width limited by maximum junction temperature

Notes 3.EAS condition: T_J=25°C

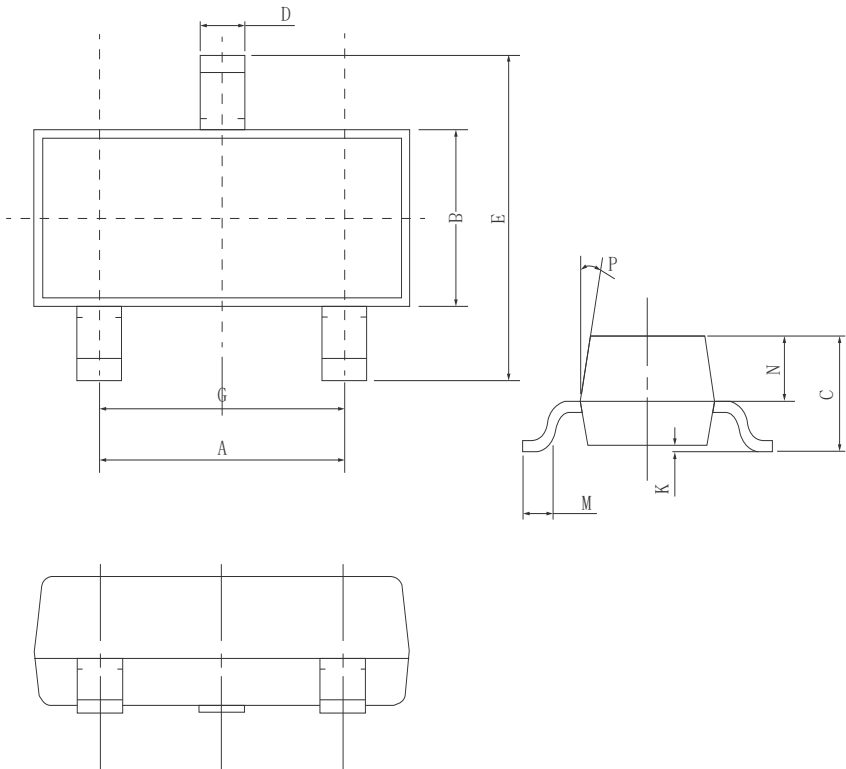
Typical Performance Characteristics



●Dimensions (SOT23)



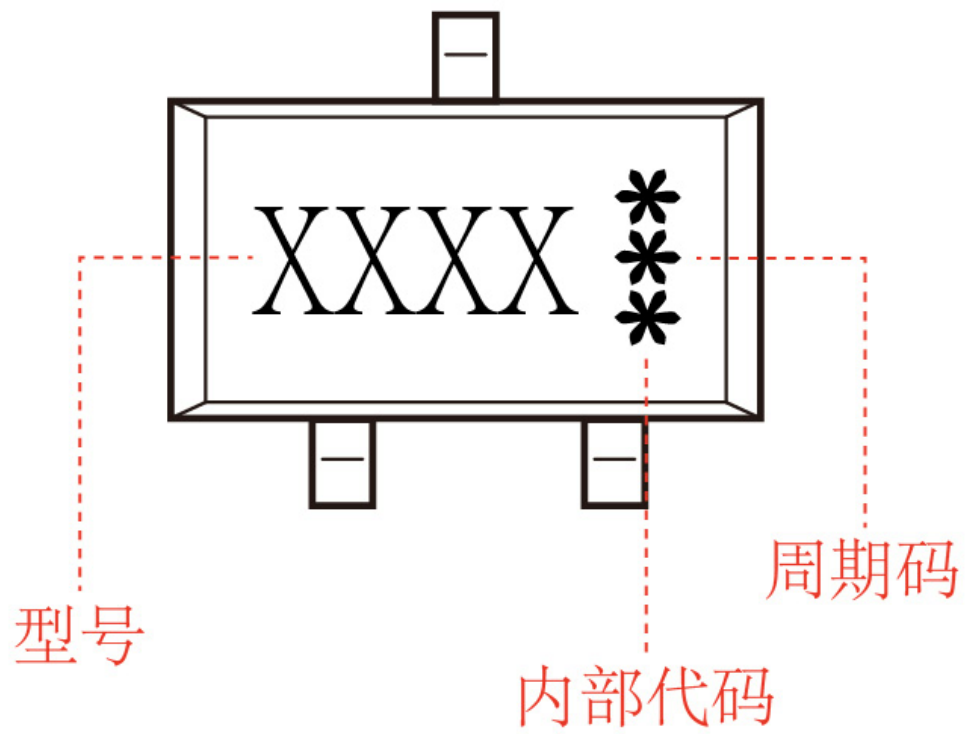
SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.90	—	1.15
A1	0.00	—	0.10
A2	0.90	0.95	1.05
b	0.30	0.40	0.50
c	0.15	—	0.25
D	2.85	2.90	2.95
E	1.25	1.30	1.35
E1	2.25	2.40	2.55
e	0.95 TYP.		
e1	1.80	—	2.00
L	0.55 REF.		
L1	0.30	—	0.50
θ	0°	—	8°



DIM	MILLIMETERS
A	2.90±0.1
B	1.30±0.10
C	0.90~1.15
D	0.40±0.10
E	2.40±0.15
G	1.90±0.10
K	0.00~0.10
M	0.30MIN
N	0.60±0.10
P	10° TYP

SOT23

Marking Instructions:



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