● General Description

The AGM15T13H 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

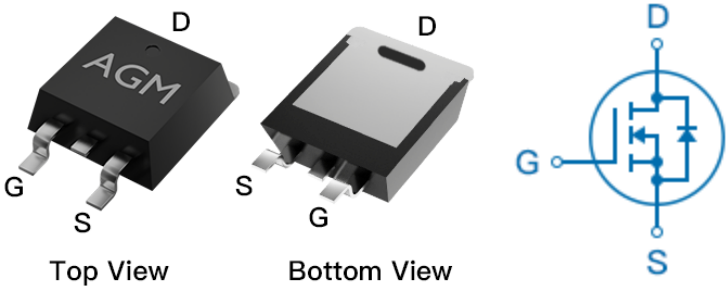
● Application

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

Product Summary

BVDSS	RDSON	ID
150V	9.0mΩ	99A

TO-263 Pin Configuration



Top View Bottom View

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
AGM15T13H	AGM15T13H	TO-263	330mm	25mm	800

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

Symbol	Parameter	Value	Unit
VDS	Drain-Source Voltage (VGS=0V)	150	V
VGS	Gate-Source Voltage (VDS=0V)	±20	V
ID	Drain Current-Continuous(Tc=25℃) **(Note 1)**	99	A
	Drain Current-Continuous(Tc=100℃)	70	A
IDM (pluse)	Drain Current-Pulsed **(Note 2)**	396	A
PD	Maximum Power Dissipation(Tc=25℃)	254	w
	Maximum Power Dissipation(Tc=100℃)	127	w
EAS	Avalanche energy **(Note 3)**	672	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]	45	56	℃/W
RθJC	Thermal Resistance Junction-Case[1]	0.45	0.59	℃/W

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BVDSS	Drain-Source Breakdown Voltage	VGS=0V ID=250μA	150	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=150V,VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±20V,VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS,ID=250μA	2.0	--	4.0	V
gFS	Forward Transconductance	VDS=5V,ID=15A	--	43	--	S
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=20A	--	9.0	12	mΩ
Dynamic Characteristics						
Ciss	Input Capacitance	VDS=75V,VGS=0V, F=1MHZ	--	2330	--	pF
Coss	Output Capacitance		--	316	--	pF
Crss	Reverse Transfer Capacitance		--	17	--	pF
Rg	Gate resistance	VGS=0V, VDS=0V,f=1.0MHz	--	2.2	--	Ω
Switching Times						
td(on)	Turn-on Delay Time	VGS=10V,VDS=72V ID=20A,RGEN=3Ω	--	8.6	--	nS
tr	Turn-on Rise Time		--	17	--	nS
td(off)	Turn-Off Delay Time		--	28	--	nS
tf	Turn-Off Fall Time		--	22	--	nS
Qg	Total Gate Charge	VGS=10V, VDS=75V, ID=20A	--	36	--	nC
Qgs	Gate-Source Charge		--	10	--	nC
Qgd	Gate-Drain Charge		--	7.7	--	nC
Source-Drain Diode Characteristics						
ISD	Source-Drain Current(Body Diode)		--	--	99	A
VSD	Forward on Voltage	VGS=0V,IS=20A	--	--	1.2	V
trr	Reverse Recovery Time	IS=20A , dI/dt=100A/μs , TJ=25℃	--	76	--	ns
Qrr	Reverse Recovery Charge		--	227	--	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℃

Typical Electrical and Thermal Characteristics

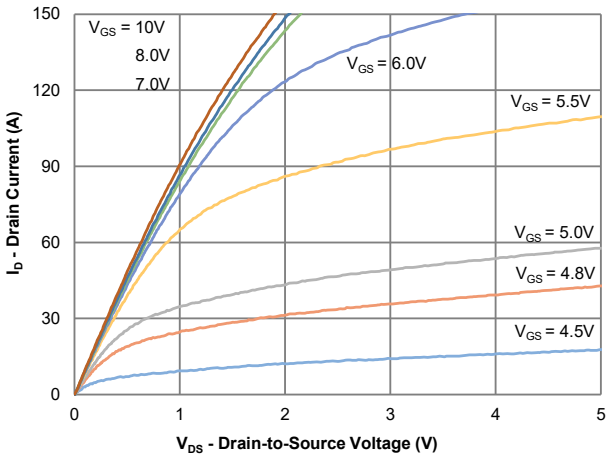


Figure 1: Output Characteristics

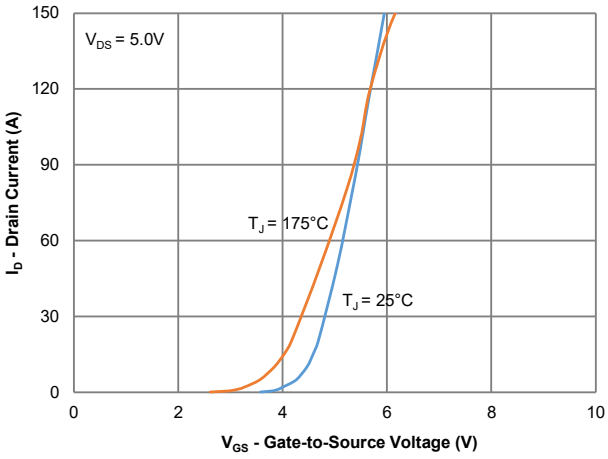


Figure 2: Transfer Characteristics

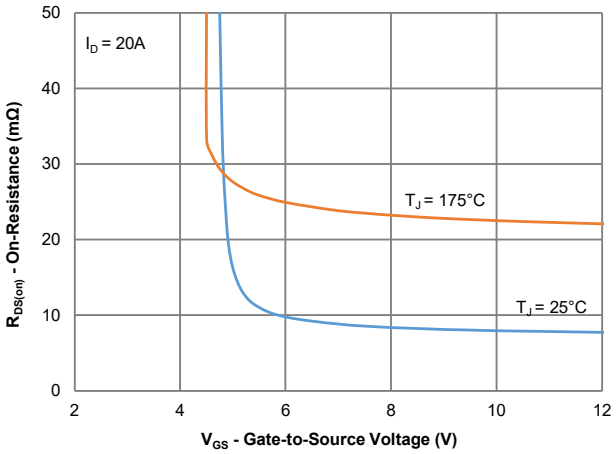


Figure 3: On-Resistance vs. Gate-Source Voltage

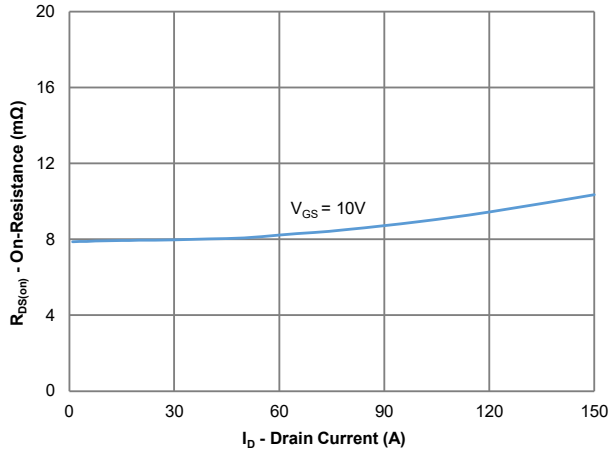


Figure 4: On-Resistance vs. Gate-Source Voltage

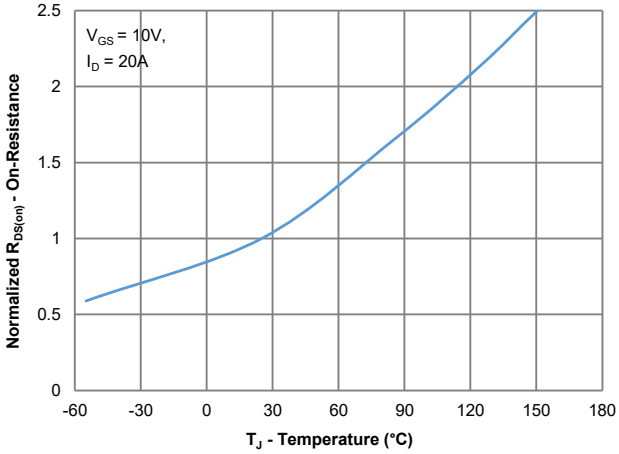


Figure 5: On-Resistance vs. Junction Temperature

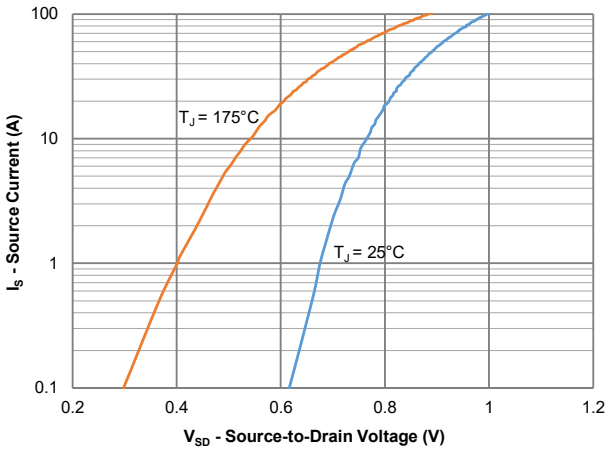


Figure 6: Source-Drain Diode Forward Voltage

Typical Electrical and Thermal Characteristics

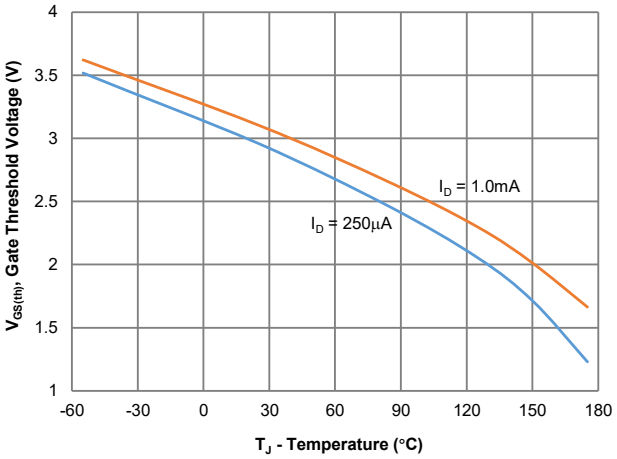


Figure 7: Gate Threshold Variation vs. Junction Temperature

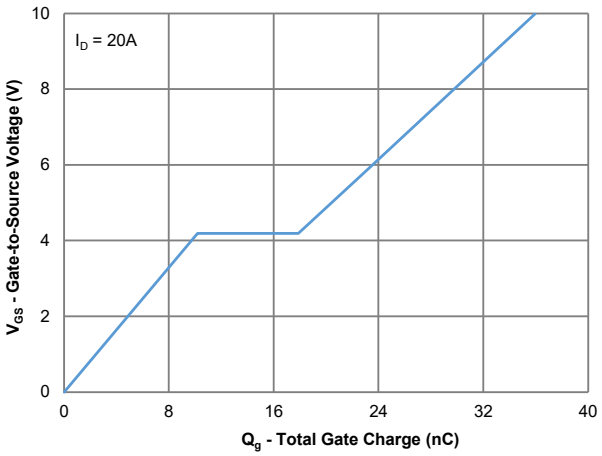


Figure 8: Gate Charge Characteristics

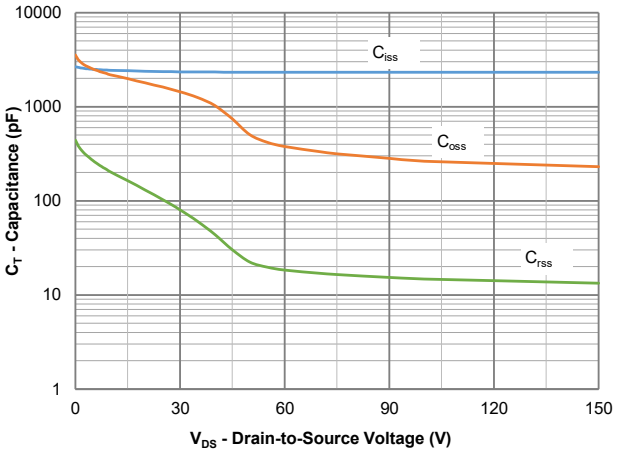


Figure 9: Capacitance Characteristics

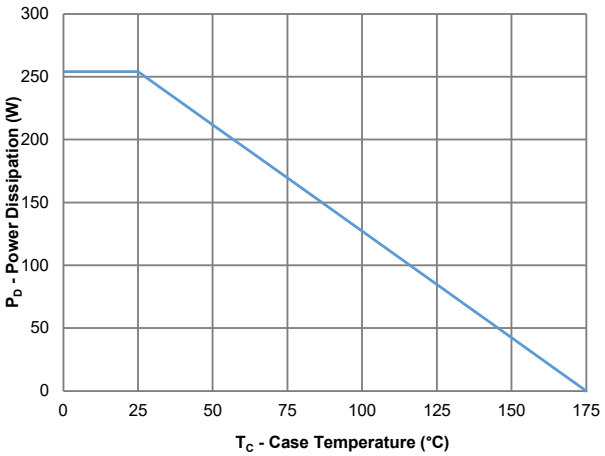


Figure 10: Power Derating

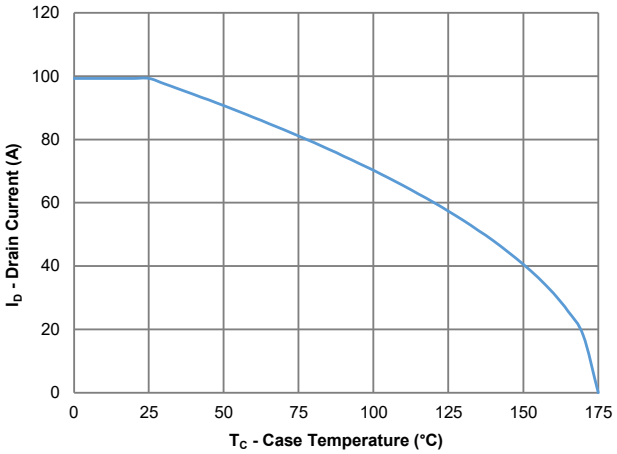


Figure 11: Current Derating

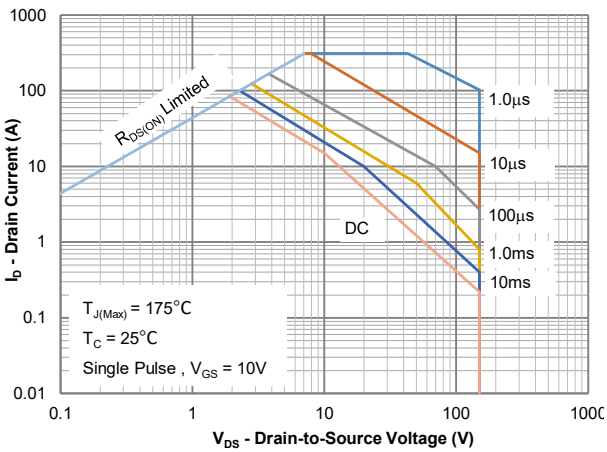


Figure 12: Safe Operating Area

Typical Electrical and Thermal Characteristics

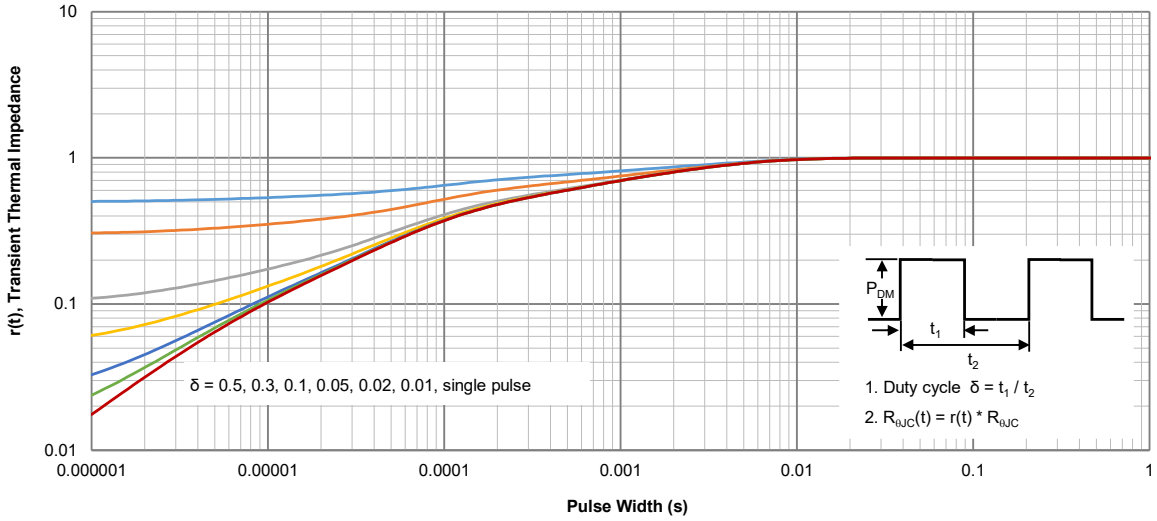
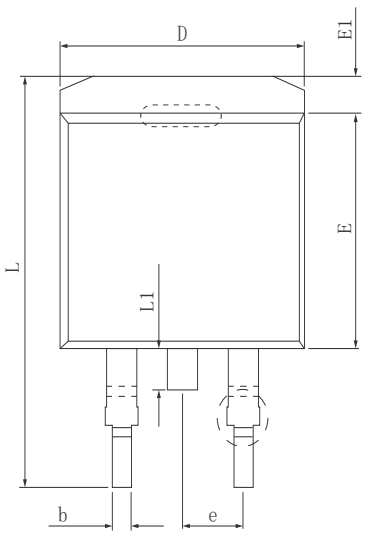
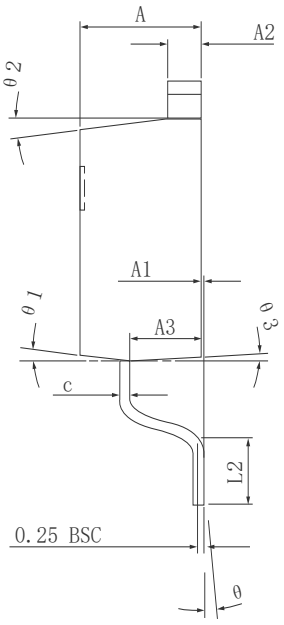


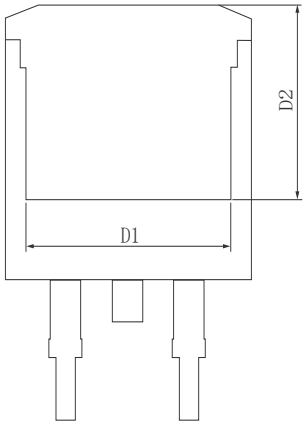
Figure 13: Normalized Maximum Transient Thermal Impedance

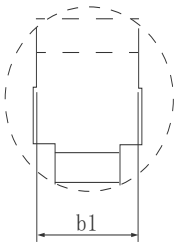
●Dimensions（TO-263）

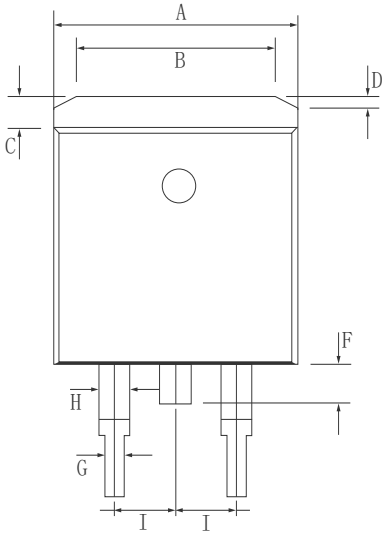


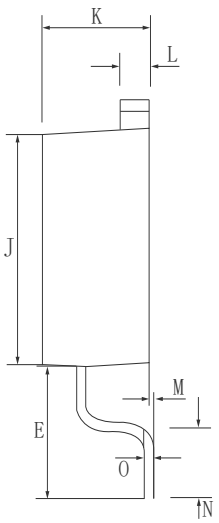


SYMBOL	MILLIMETER		
	MIN	Typ.	MAX
A	4.370	4.570	4.770
A1	0.000		0.250
A2	1.220	1.270	1.420
A3	2.490	2.690	2.890
b	0.700	0.810	0.960
b1	1.170	1.270	1.470
c	0.300	0.380	0.530
D	9.860	10.160	10.360
D1	8.400 REF		
D2	7.073 REF		
E	8.500	8.700	8.900
E1	1.070	1.270	1.470
e	2.540 TYP		
L	14.700	15.100	15.500
L1	1.400	1.550	1.700
L2	2.000	2.300	2.600
θ	0°		9°
θ1	7° TYP		
θ2	7° TYP		
θ3	3° TYP		



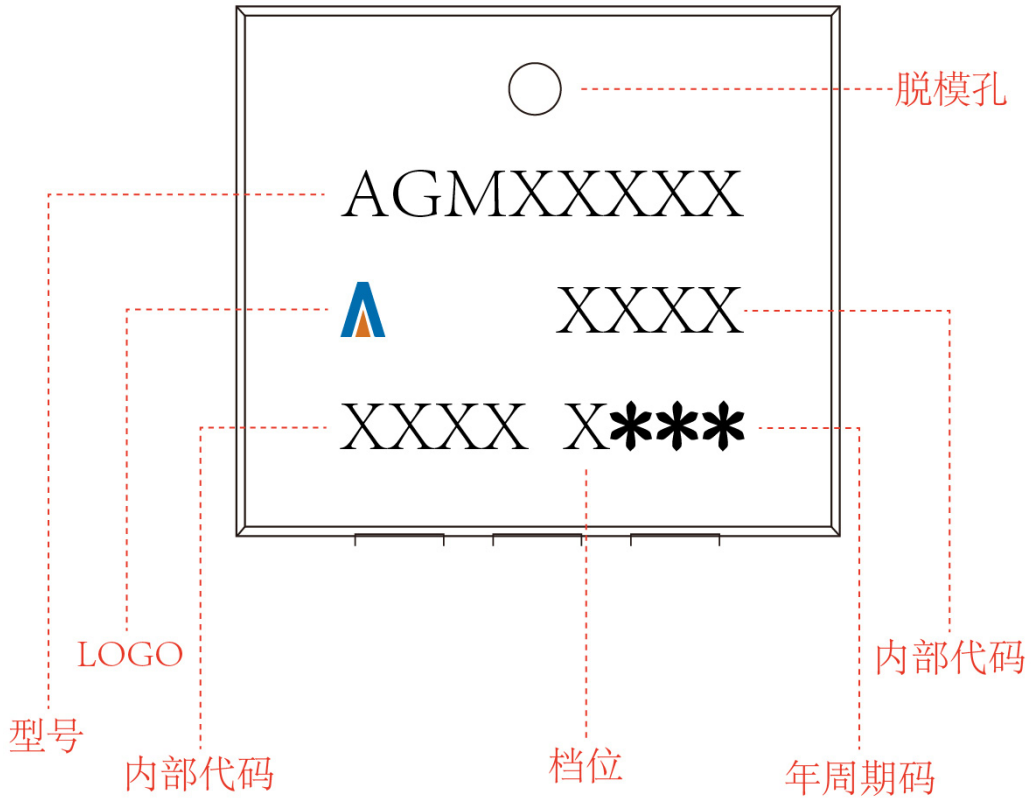






Dim.	Min.	Max.
A	9.8	10.2
B	6.1	6.7
C	1.1	1.4
D	0.5	1.0
E	4.6	5.0
F	1.4	1.6
G	0.7	0.9
H	1.17	1.37
I	Typ2.54	
J	9	9.2
K	4.3	4.7
L	1.25	1.35
M	0.02	0.23
N	2.2	2.8
O	0.45	0.55
All Dimensions in millimeter		

TO-263
Marking Instructions:



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