SPECIFICATION

MODEL : SH-62D

P/N : HE62DY2U22

Halogen Free

GaAs Hall Sensnor

NANOS Co., Ltd

4, Madogongdanro, Madomyeon, Hwaseongsi,

Gyeonggido, 445-861, Republic of Korea

1. Description

This data sheet is applied to GaAs Hall sensor that NANOS co. Ltd., supplies.

2. Electrical specifications

2.1 Absolute maximum ratings [Ta=25℃]

Parameter	Symbol	Rating	Unit
Maximum Input Voltage	Vc	10	V
Maximum Power Dissipation	Pmax	150	mW
Operating Temperature Range	Top	−40 ~ +125	℃
Storage Temperature Range	Tst	−40 ~ +150	℃

2.2 General electrical specifications [Ta=25℃]

Parameter	Symbol	Conditions	Min	Max	Unit
Output Hall Voltage	Vh	Vin=6V, B=50mT	60	80	mV
Input Resistance	R_{in}	Ic = 0.1㎃	650	850	Ω
Output Resistance	R_{out}	Ic = 0.1㎃	650	850	Ω
Offset Voltage	V_o	Vin = 6V, B = 0mT	−11	+11	mV

※ $V_h = V_{hm} - V_o$ (V_{hm} : The output voltage measured at 50mT)

2.3 Other electrical specifications (For reference only) [Ta=25℃]

Parameter	Symbol	Conditions	Min	Max	Unit
Temp. Coeff. of VH	αVh	Average value between Ta = 25~125℃, B=50mT, Ic=5㎃	-	−0.06	%/℃
Temp. Coeff. of Rin	αRin	Average value between Ta = 25~125℃, B=0mT, Ic=0.1㎃	-	0.3	%/℃
Linearity	ΔK	B=0.1TG/0.5T Ic=5㎃	-	2	%

※ $\alpha Rin : \frac{1}{Rin[T1]} \times \frac{Rin[T2] - Rin[T1]}{[T2 - T1]} \times 100$

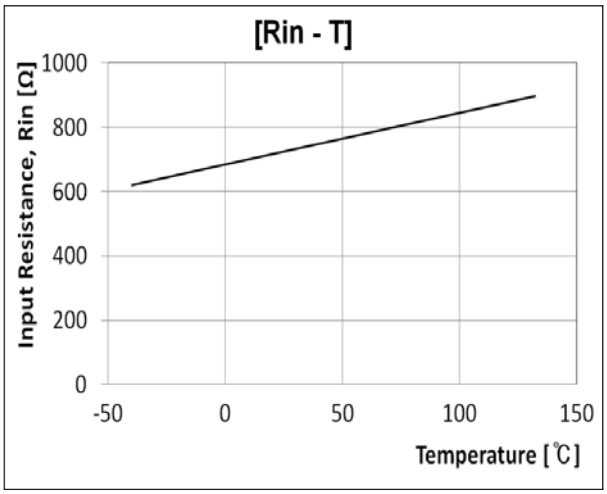
※ $\Delta K : \frac{K[B1] - K[B2]1}{[K(B1) + K(B2)]/2} \times 100$

※ $\alpha Vh : \frac{1}{Vh[T1]} \times \frac{Vh[T2] - Vh[T1]}{[T2 - T1]} \times 100$

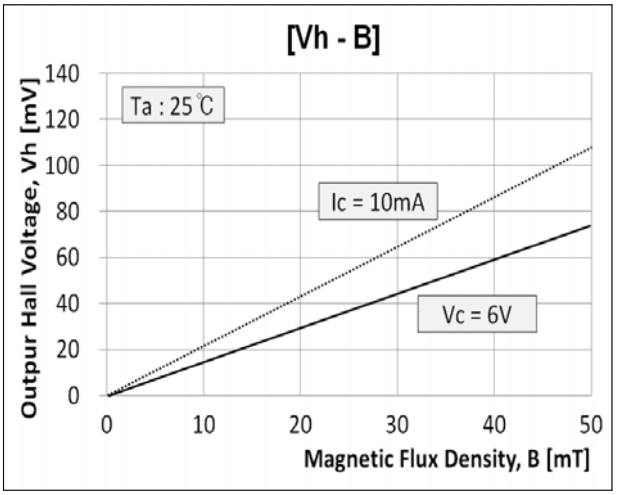
T1 = 25℃, T2 = 125℃
K = Vh / (Ic*B)
B1 = 0.5T, B2 = 0.1T

2.4 Characteristics graphs

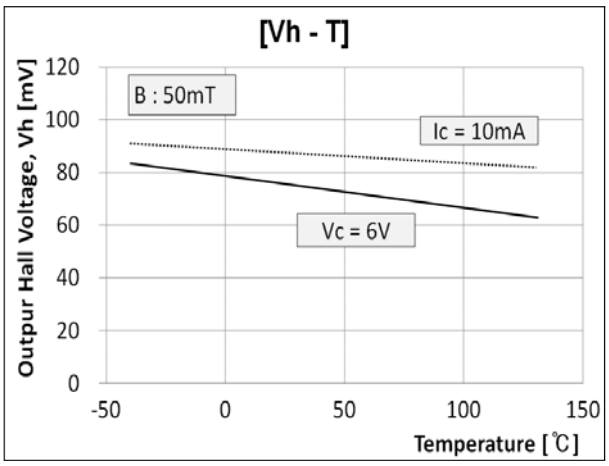
■ Rin-T



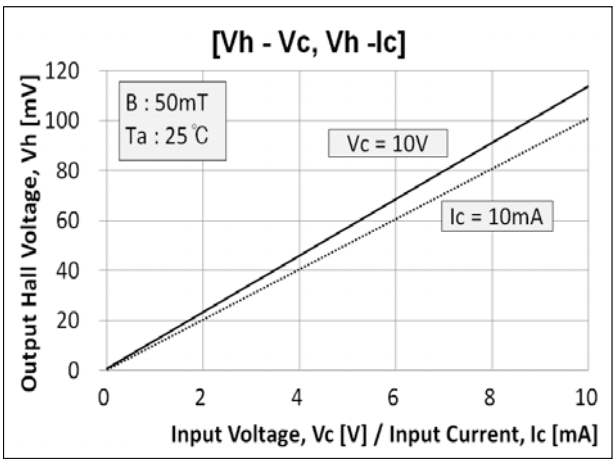
■ Vh-B



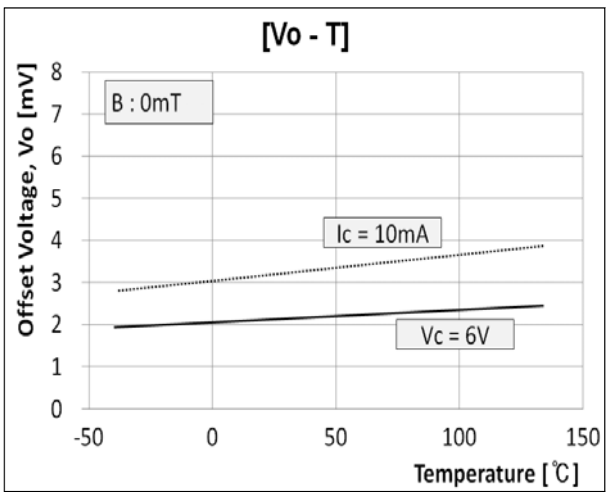
■ Vh-T



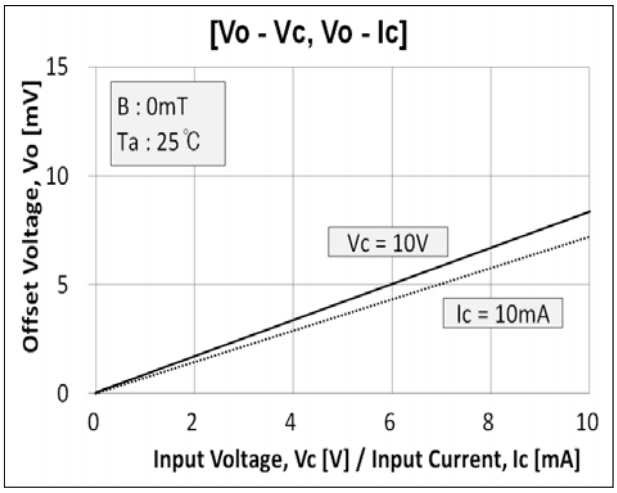
■ Vh-Vc, Vh-Ic



■ Vo-T **[For reference only]**



■ Vo-Vc, Vo-Ic **[For reference only]**



※Magnetic Flux Density 1[mT] = 10 [G]

3. Method for mounting

3.1 Lead frame

1) The material of lead frame is phosphor bronze alloy and the wire bonded surface is plated by silver. The minimum thickness of silver plating is 2.0㎛.

2) Lead frame is plated by pure Sn and the thickness is controlled by 4~12㎛.

3.2 Soldering conditions on PCB

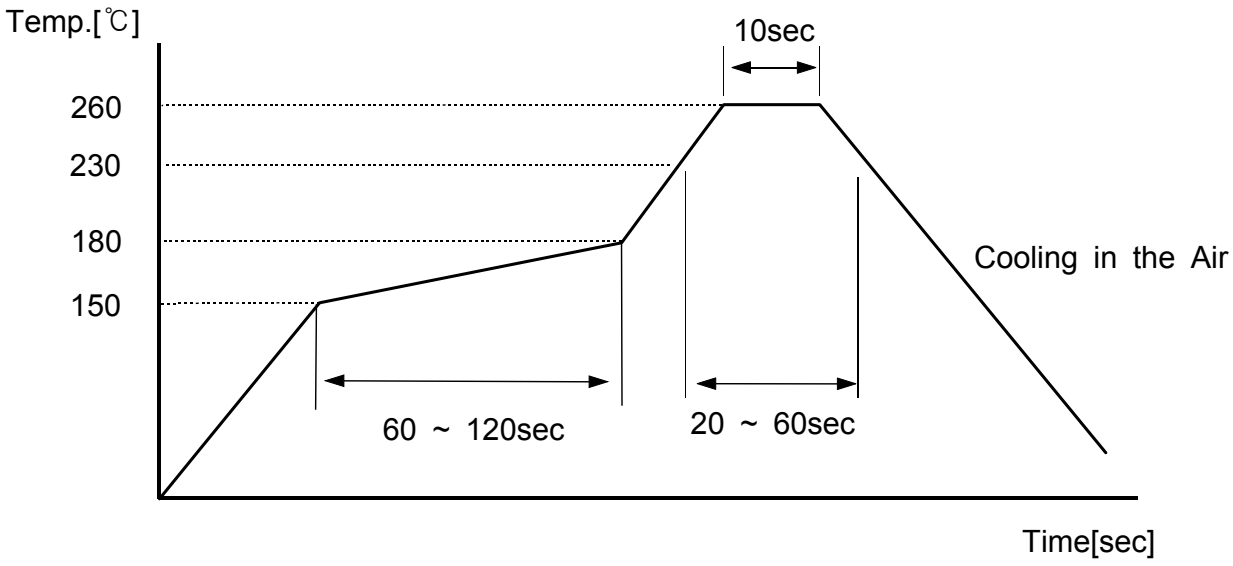
1) No rapid heating and cooling is desired.

2) Preheating is recommended for 60 ~ 120secs at 150～180℃.

3) Reflowing is recommended for 10seconds at 260℃.

3.3 Soldering method and temperature

Items	Method	Temperature
Reflow	Soldering by passing the heated zone	Max 260℃ in 10sec
Solder Iron	Soldering by solder-iron	Max 350℃ in 3sec



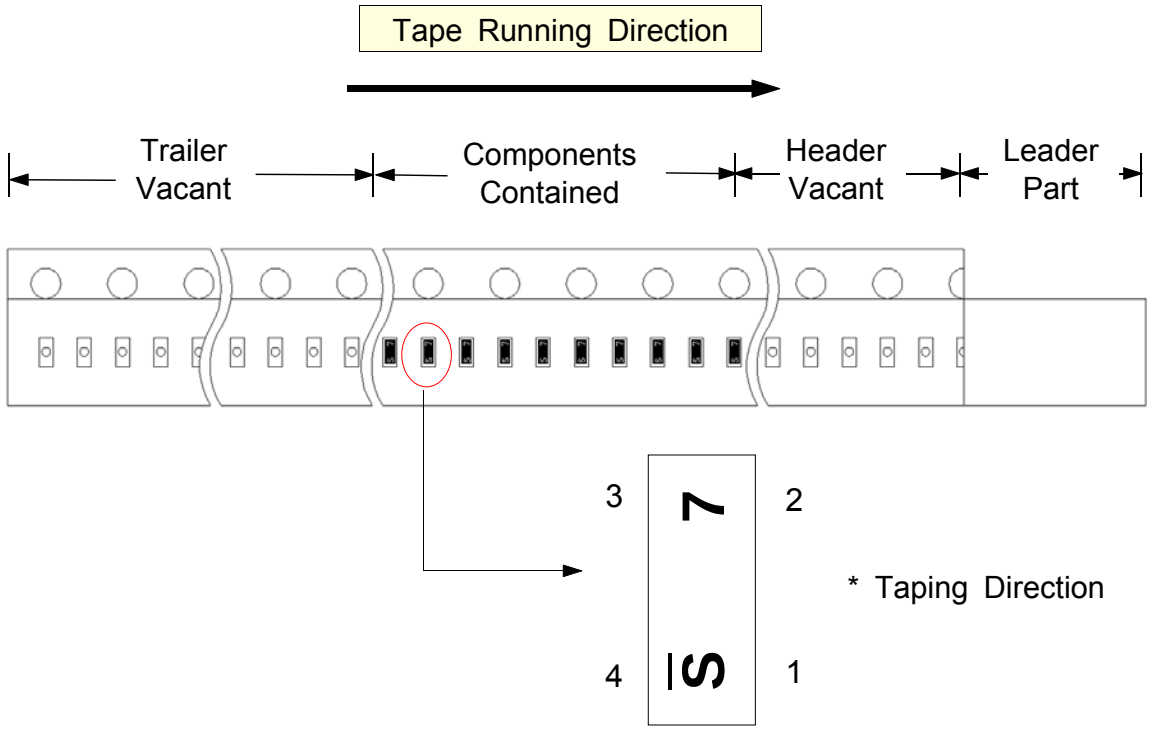
[Reflow Method]

4. Packaging

4.1 Taping

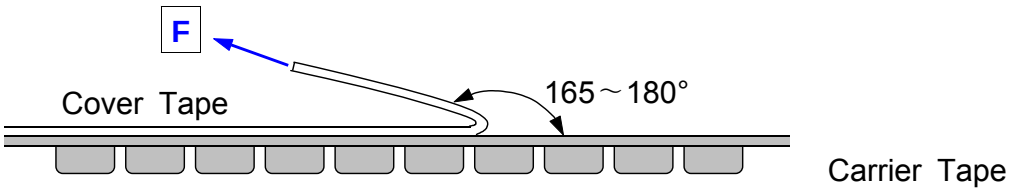
1) SH-62D should be packed and marking is possible to see through cover tape.

2) At least, 100mm vacant parts are made both front and rear side of tape.



4.2 Taping specifications

1) Pull Strength(F) = 20～70g



2) Devices should not run out of a pocket when tape is bent down 15mm curvature.

3) Devices should not stick to cover tape.

4) Devices should be kept below 40℃ and below RH80% in the shade.

5) Tape has no joint.

4.3 Packing unit

1) 10,000pcs of devices are packed in one reel.

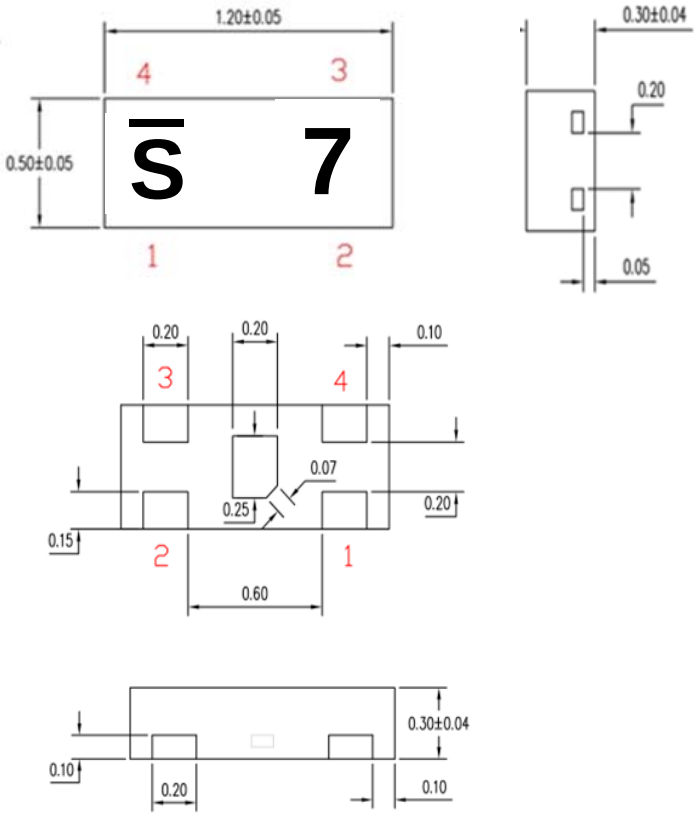
2) Five reels are packed in one inner box.

3) Four inner boxes, 200,000pcs of devices, are packed in one outer box.

4) Dummy could be packed for safe dealing.

5. External dimensions and appearance

5.1 External dimensions [Unit :mm]

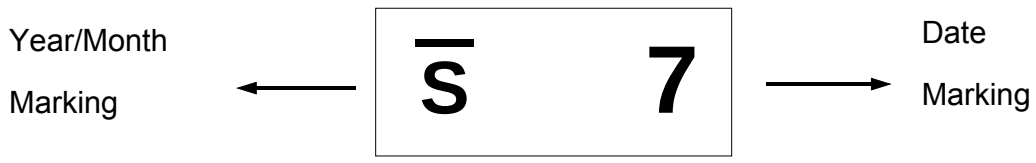


Pin No.	Description
1	Input +
2	Output +
3	Input -
4	Output -

※ No.3 and center pad are electrically connected.

5.2 Marking method

Devices should be marked by LASER beam in the form of 「Y/M + Date」.



5.2.1 Year and Month marking table

Y/M	14/1	14/2	14/3	14/4	14/5	14/6	14/7	14/8
Mark	$\overline{1}$	$\overline{2}$	$\overline{3}$	$\overline{4}$	$\overline{5}$	$\overline{6}$	$\overline{7}$	$\overline{8}$
Y/M	14/9	14/10	14/11	14/12	15/1	15/2	15/3	15/4
Mark	$\overline{9}$	$\overline{A}$	$\overline{B}$	$\overline{C}$	$\overline{D}$	$\overline{E}$	$\overline{F}$	$\overline{G}$
Y/M	15/5	15/6	15/7	15/8	15/9	15/10	15/11	15/12
Mark	$\overline{J}$	$\overline{K}$	$\overline{L}$	$\overline{M}$	$\overline{N}$	$\overline{P}$	$\overline{R}$	$\overline{S}$
Y/M	16/1	16/2	16/3	16/4	16/5	16/6	16/7	16/8
Mark	$\overline{1}$▪	$\overline{2}$▪	$\overline{3}$▪	$\overline{4}$▪	$\overline{5}$▪	$\overline{6}$▪	$\overline{7}$▪	$\overline{8}$▪
Y/M	16/9	16/10	16/11	16/12	17/1	17/2	17/3	17/4
Mark	$\overline{9}$▪	$\overline{A}$▪	$\overline{B}$▪	$\overline{C}$▪	$\overline{D}$▪	$\overline{E}$▪	$\overline{F}$▪	$\overline{G}$▪
Y/M	17/5	17/6	17/7	17/8	17/9	17/10	17/11	17/12
Mark	$\overline{J}$▪	$\overline{K}$▪	$\overline{L}$▪	$\overline{M}$▪	$\overline{N}$▪	$\overline{P}$▪	$\overline{R}$▪	$\overline{S}$▪

5.2.2 Date marking table

Date	1	2	3	4	5	6	7	8
Mark	1	2	3	4	5	6	7	8
Date	9	10	11	12	13	14	15	16
Mark	9	A	B	C	D	E	F	G
Date	17	18	19	20	21	22	23	24
Mark	J	K	L	M	N	P	R	S
Date	25	26	27	28	29	30	31	
Mark	T	U	V	W	X	Y	Z	

6. Reliability test specifications

6.1 Test item and condition

No	Test item	Test condition	Quantity	Time
1	High Temp. High Humidity	Ta=85±5℃, Relative Humidity=85±5%RH	22pcs	1,000HR
2	High Temp. Operating	Ta=125±5℃, Vc=6.0V±10%	22pcs	1,000HR
3	Preconditioning	Preconditioning : Ta=150±5℃, 24HR Moisture Absorption : Ta=85±5℃, 85±5%RH, 168HR Reflow : Ta=260±5℃, 10sec	22pcs	2Cycle
4	High Temp. Storage	Ta=150±5℃	22pcs	1,000HR
5	Temp. Cycle	-55±5℃, 30min ↔ 25℃, 5min ↔ 150±5℃, 30min	22pcs	50Cycle

6.2 Criterion for judging

After each reliability test, samples should be store at least 24hrs in room temp. & humidity, and then measure.

Item	Specification
Rin	Change rate[%] : ±20%↓
Rout	
VH	
Vo	Max. ±16㎷