OH12B Hall Effect Element

1. Order Information

Part number	Operation Temperature	Rank	Package
OH12B, Old Part number: SH12B	-40 ~ 120℃	F (266 ~ 320mV) E (228 ~ 274mV)	SOT143, 3000 pcs/reel

2. Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Maximum Input Current	Imax	20 (at 25℃)	mA
Maximum Power Dissipation	Pmax	150 (at 25℃)	mW
Operating Temperature Range	Top	- 40 ~ + 120	℃
Storage Temperature Range	Tst	- 40 ~ + 150	℃

3. Electrical Characteristics (Measured at 25℃)

Parameter	Symbol	Measurement Conditions	Min	Max	Unit
Output Hall Voltage	V_H	Vin = 1V, B = 500G	196	320	mV
Input Resistance	Rin	I = 0.1mA	240	550	Ω
Output Resistance	Rout	I = 0.1mA	240	550	Ω
Offset Voltage	V_O	Vin = 1V, B = 0G	- 7	+ 7	mV
Temp. Coeff. of VH	α	Ta = 0 ~ + 40℃ AVG.	-	- 1.8	% /℃
Temp. Coeff. of Rin, Rout	β	Ta = 0 ~ + 40℃ AVG.	-	- 1.8	% /℃

※ VH = VHM - VO (VHM : The output voltage measured at 500G.)

4. Rank Classification and Mark on Output Hall Voltage

Output Hall Voltage, VH (mV)	Rank	Mark	Measurement Conditions
196 ~ 236	D	•SD	Vin = 1V, B = 500G (Constant Voltage)
228 ~ 274	E	•SE	

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5. Method for Mounting

5.1 Lead Frame

1) The material of lead frame is phosphor bronze alloy and the die bonded surface is plated by copper and silver. The minimum thickness of plating is 3.0㎛.

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

5.2. Soldering Conditions on PCB

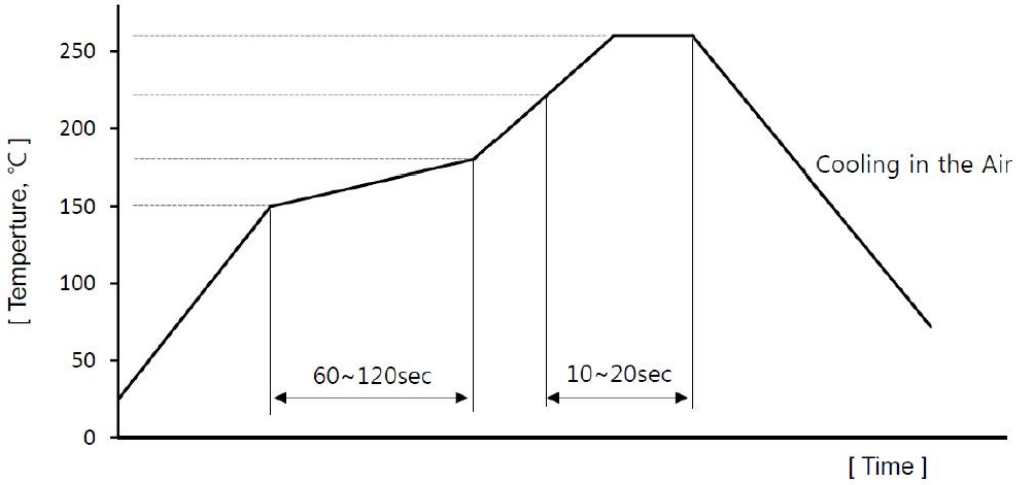
1) No Rapid Heating and Cooling.

2) Recommended Preheating condition is at 150～190℃for 1～2 minutes.

3) Recommended Reflowing condition is at 220～260℃for 10～20 seconds.

5-3. Soldering Method and Temperature

Items	Methods	Temperature
Reflow	Soldering by Passing the Heated Zone	Max 260℃ in 10sec
Solder Iron	Soldering by Soldering Iron	Max 350℃ in 3sec



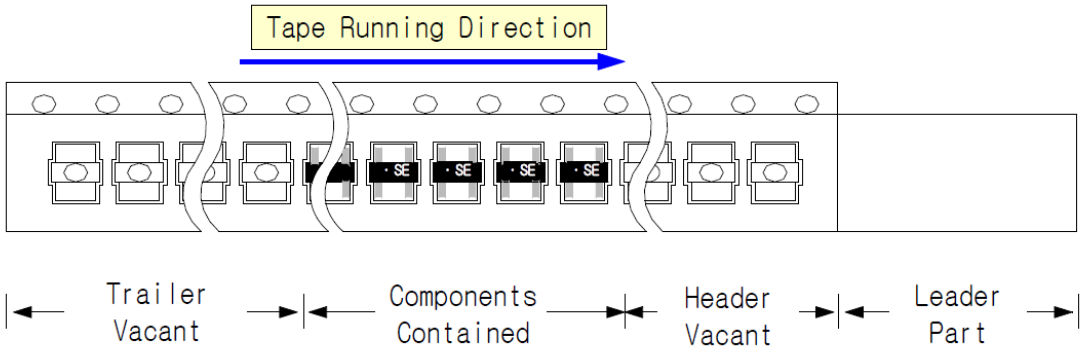
Reflow Method

6. Packing

6.1 Taping

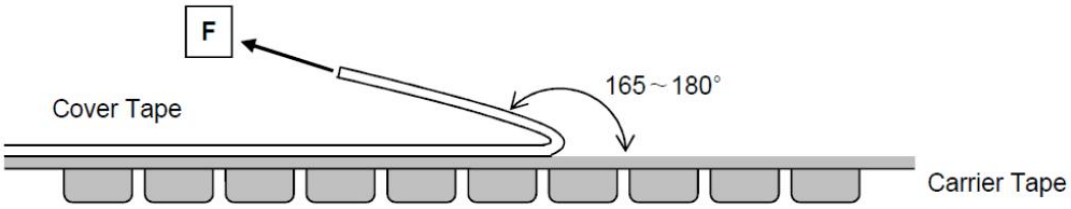
1) OH12B should be packed marking side to cover tape side and put long side to tape running direction. 180° rotation has no effect on the application.

2) At least, 40mm vacant parts are made both front and rear side of tape.



6.2 Handling Methods of Tape

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.

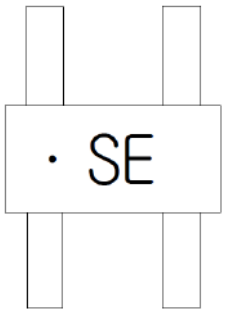
6.3 Packing Unit

1) 3,000 pcs of devices are packed in one reel.

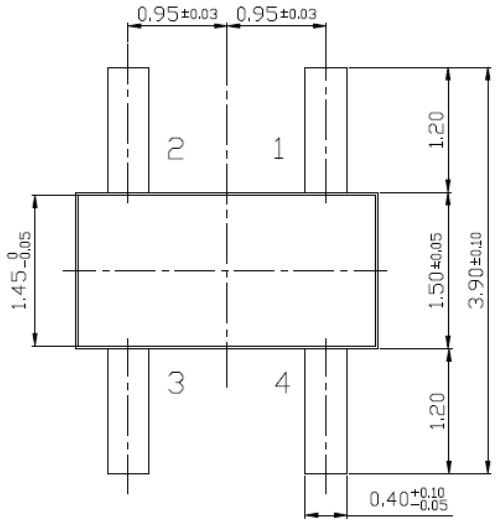
2) Five reels are packed in one inner box.

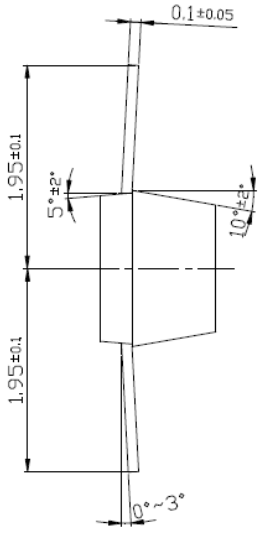
3) Dummy could be packed for safe dealing.

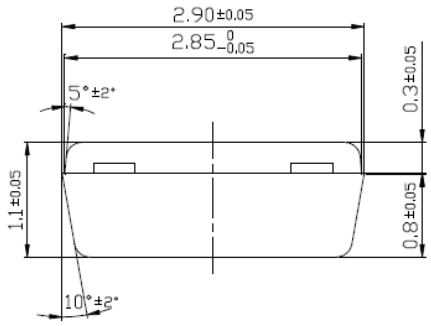
7. Mark method



8. Dimension (Unit:mm)



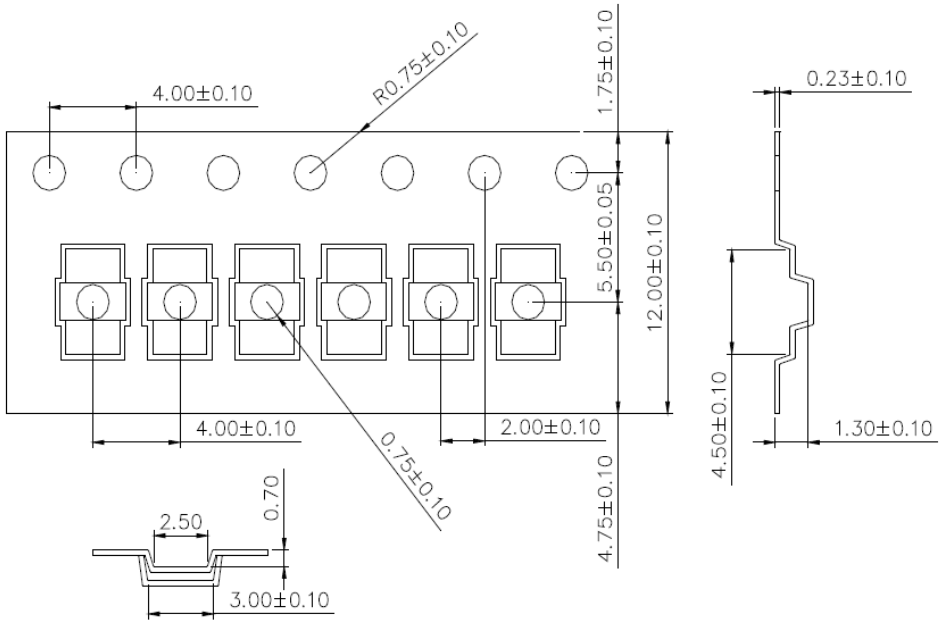




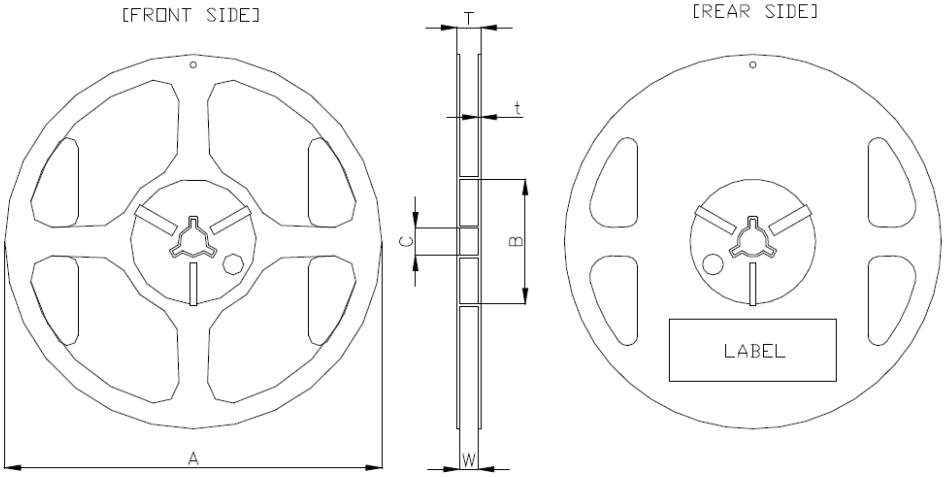
LEAD CONNECTION		
INPUT	1(±)	3(∓)
OUTPUT	2(±)	4(∓)

Four leads of input·output terminals are designed in the diagonally symmetric mode and are equal in dimensions. OH12B/SH12B could be used without considering on the rotation of 180°.

9. External Dimensions of Carrier Tape (Unit:mm)



10. External Dimension of Reels (Unit: mm)



SYMBOL	A	B	C	W	T	t
SPEC.	Ø180+0 −3	Ø60+1 −0	Ø13±0.3	13±0.3	15.4±1.0	2.0 max.

※ The above reel is made of plastic and is recyclable.

11. RELIABILITY

11.1 TEST CONDITION

No.		CONDITION
1	HIGH TEMP. STORAGE	Ta=150℃,t=1000HR
2	LOW TEMP. STORAGE	Ta=-40℃, Iopr=6mA, t=1000HR
3	HIGH TEMP. OPERATION	Ta=120℃,Iopr=10mA,t=1000HR
4	LOW TEMP. OPERATION	Ta=-40℃,Iopr=6mA,t=1000HR
5	HIGH TEMP. HIGH HUMIDITY OPERATION	Ta=85℃,HR=85%,Iopr=9mA,t=1000HR
6	PCT	Ta=121℃,HR=100%,Pv=2atm,t=24HR
7	THERMAL SHOCK	T(L)=-55℃,T(H)=150℃,t=(L,H)=30min,M=30CYCLE
8	SOLDERING HEAT RESISTANCE	solder temp=260℃,t=10sec,REFLOW
9	SOLDABILITY	solder temp=230±5℃,t=5sec,dip
10	ESD (MM)	V=500V,C=200pF,R=0Ω (EIAJ Test Condition)

11.2 CRITERION FOR JUDGING

After each reliability test, samples should be kept for at least 24 hrs at room temp. & humidity, and then measured.

The change rates should be confined within the ranges as follows.

item	OK SPEC	NG/OK
Rin	UNDER ±20%	OK (SPEC SATISFYING)
Rout	UNDER ±20%	
VH	UNDER ±20%	
Vo	Max. ±5%	

Vo change reatio calculation method

Vo change ratio = (Vo-after –Vo-before)/VH-before *100%

12. Caution on treating

Please care for storage conditons as on shipping list.
Furthermore, on surface mounting, please keep the statements written by mounting conditions.
Safekeeping Period is 6 month at room temperature in condition of being packed.

13. The Analysis of RoHS(Restriction of Hazardous Substances)

It is guaranteed that there are no RoHS materials in Hall Sensor by specific analysis results.

References: RoHs 6 Materials
1)Cadmium(Cd)
2)Lead(Pb)
3)Mercury(Hg)
4)Hexavalent Chromium(CrVI)
5)PBBs(Polybrominated Biphenyls)
6)PBDEs(Polybrominated Diphenyl Ethers)

14. Halogen Free

Ouzhuo's Hall sensor guarantees that it contains no Halogenated materials. That is Halogen-Free-product and is confirmed by specific analysis results.

Reference: Halogen materials
1) Fluorine(F)
2) Chlorine(Cl)
3) Bromine(Br)
4) Iodine (I)

For more information:

Ouzhuo Technology service you through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, you could reach us the way you are convenient, thank you for your support!

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NOTICE:
The information presented in this datasheet is for reference only. Specifications may change without notice.