HEX-0714

Halogen Free

GaAs Hall Sensnor

电话:0755-83554556 网站： www.haierxikj.com E-mail: sarachen@haierxikj.com

1. Description

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

2. Electrical specifications

2.1 Absolute maximum ratings [Ta=25℃]

Parameter	Symbol	Rating	Unit
Maximum Input Voltage	Vc	8	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	78	102	mV
Input Resistance	Rin	Ic＝0.1㎃	1,600	2,400	Ω
Output Resistance	Rout	Ic＝0.1㎃	3,200	4,800	Ω
Offset Voltage	Vo	Vin＝6V, B＝0mT	－8	＋8	mV

※ Vh＝Vhm－Vo (Vhm : 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㎃	-	－0.07	%/℃
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	%

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

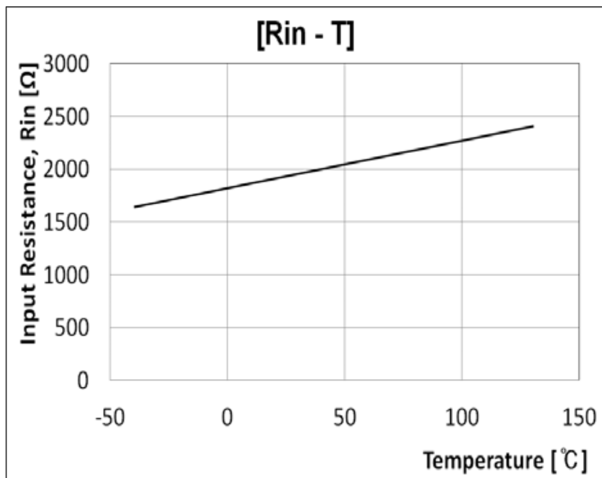
※ $\Delta K : \frac{K[B1] - K[B2]1}{[K(B1) + K(B2)]/2} \times 100$

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

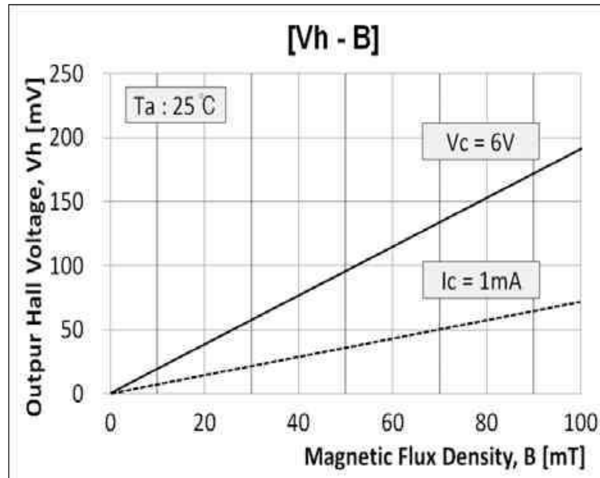
T1 = 25℃, T2 = 125℃
K = Vh / (Ic*B)
B1 = 0.5T, B2 = 0.1T

2.4 Characteristics graphs

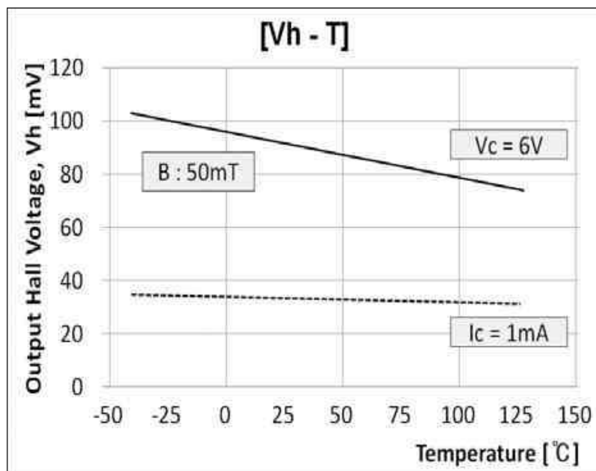
■ Rin-T



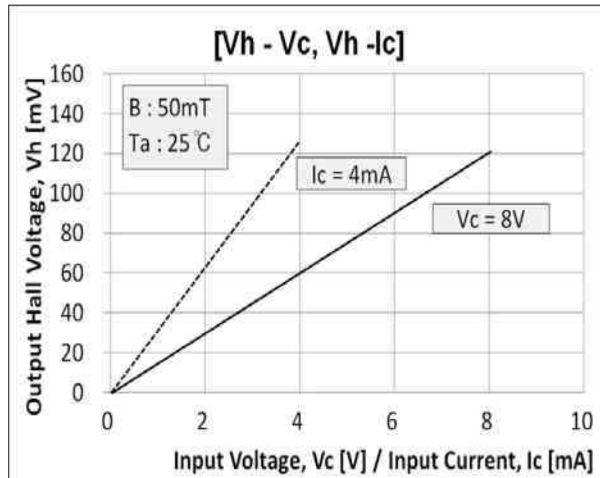
■ Vh-B



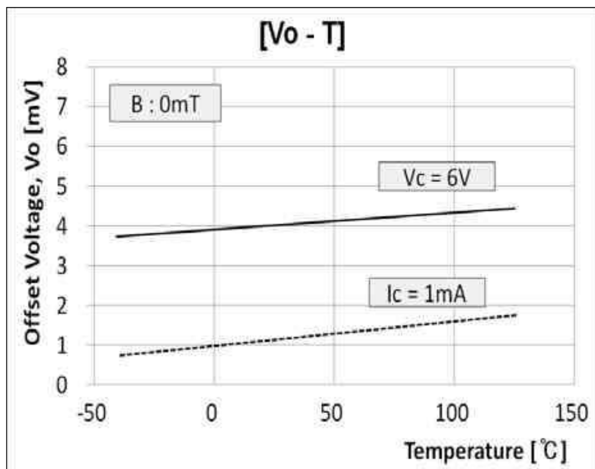
■ Vh-T



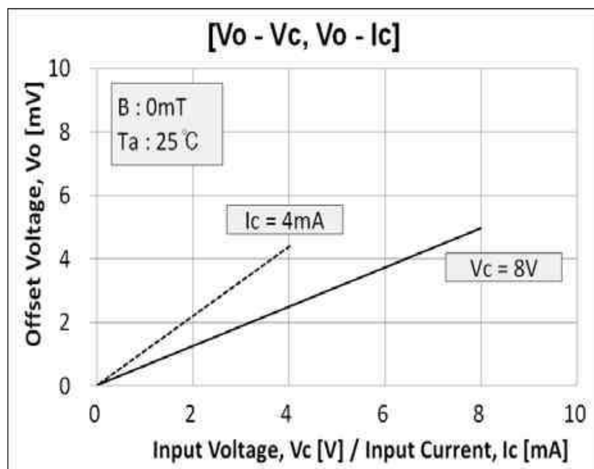
■ Vh-Vc, Vh-Ic



■ Vo-T [For reference only]



■ Vo-Vc [For reference only]



※Voltage constant operation

※Vo-T and Vo-Vc sample : Rin = 2036[Ω], Vo = 4.19[mV]

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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

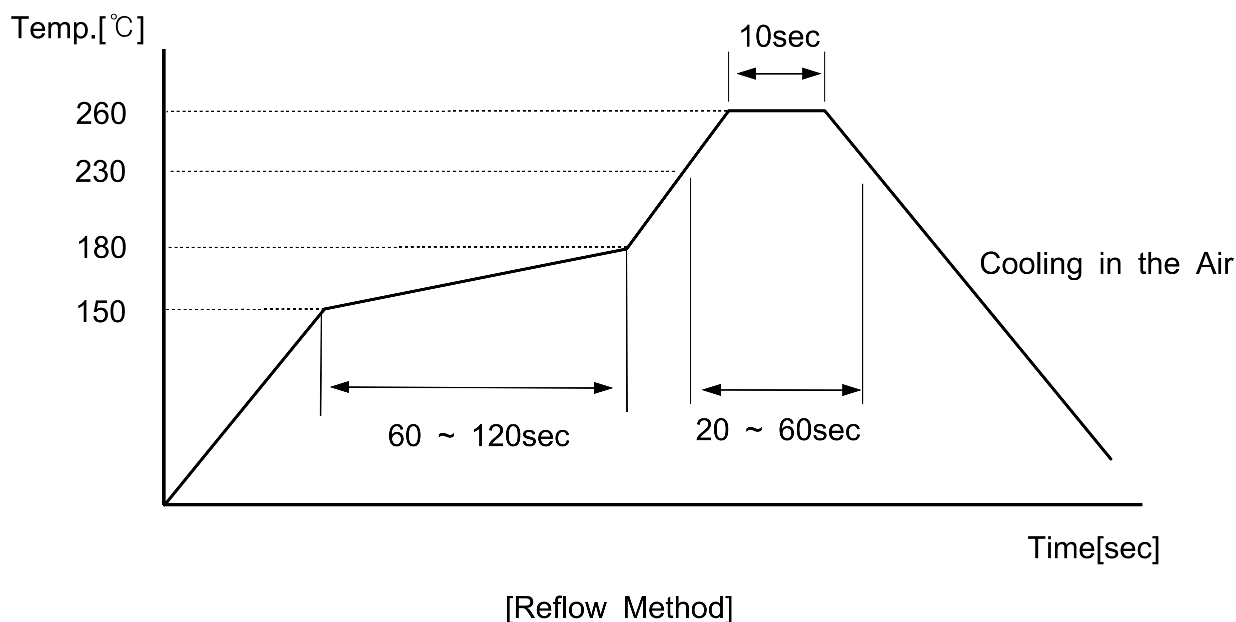
1) No rapid heating and cooling is desired.

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



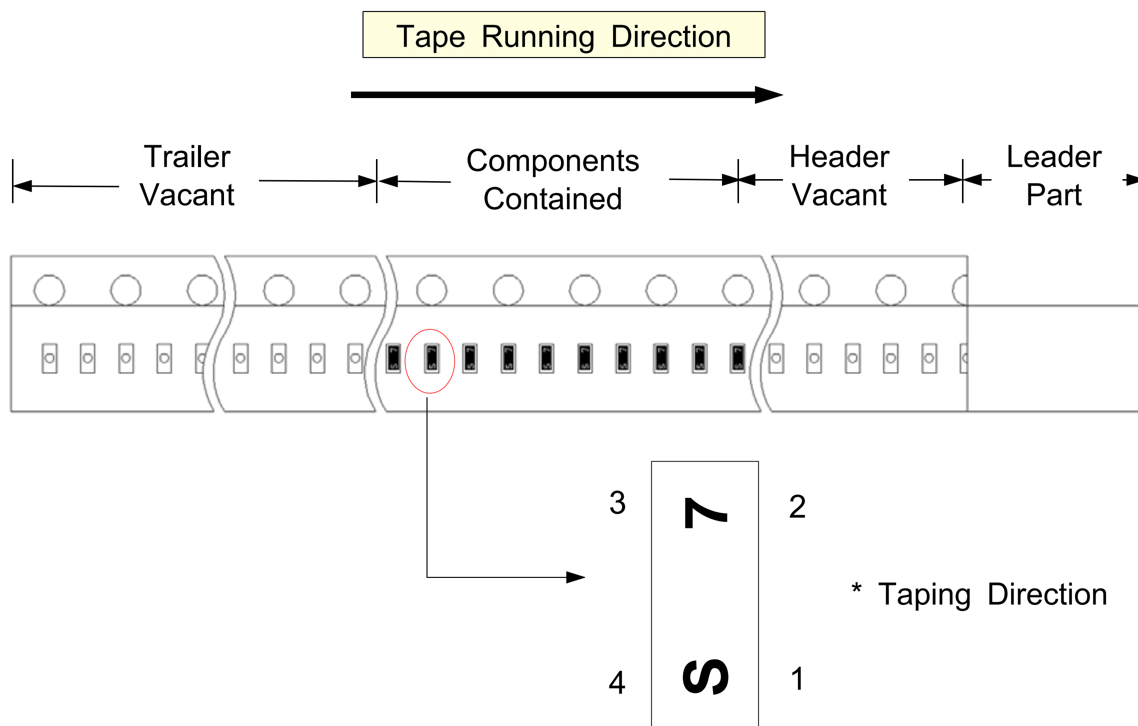
[Reflow Method]

4. Packaging

4.1 Taping

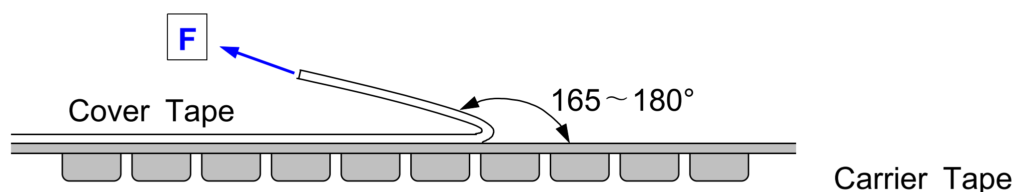
1) HEX-0714should be packed and marking is possible to see through cover tape.

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.