

## 1、概述

DH492 为小型、通用、线性霍尔效应传感器，其输出信号电平决定于施加在器件敏感面的磁场强度，随磁场强度成比例地变化。当 DH492 处于零磁场条件时，其输出电压是电源电压的一半。TO-92 封装产品 S 磁极出现在 DH492 标记面时，输出电压将随磁场强度增加而线性降低，N 磁极将使输出电压随磁场强度增加而线性升高，SOT23 封装感应极性正好相反。

DH492 具有低噪声输出的特点，不再需要采用外部滤波。工作温度范围为-40℃至 150℃，适用于各种商业和消费电子应用。

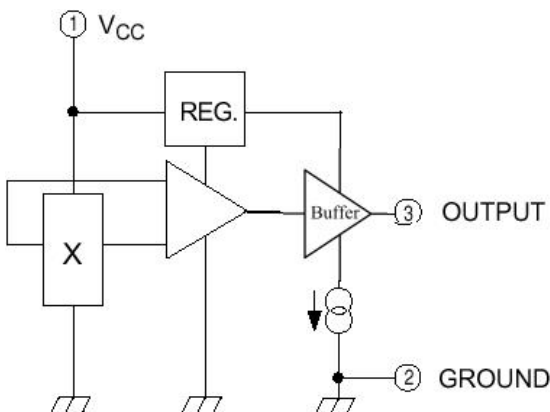
## 2、特点

- ◆ Real to real 输出
- ◆ 稳定性好
- ◆ 灵敏度选择多 VCC=3.3V  
DH492 典型值 8 mV/GS
- ◆ 功耗低 3.3V 下 2mA 以内

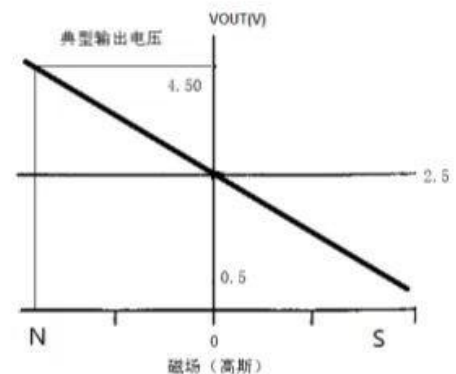
## 3、典型应用

- ◆ 电流检测传感器
- ◆ 接近检测器
- ◆ 运动检测器
- ◆ 旋转编码器
- ◆ 角度传感器

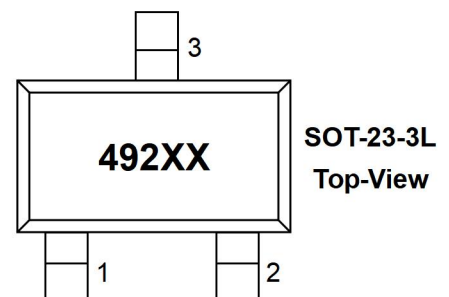
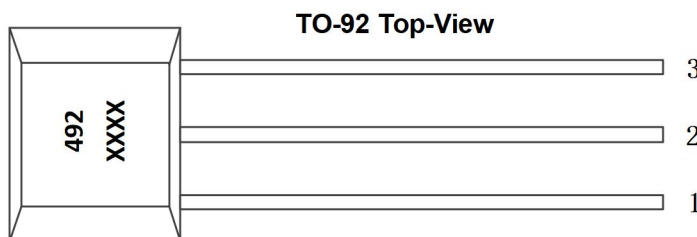
## 4、功能框图



### 4.1、磁电转换波形 (TO-92)



## 5、管脚定义



| 名称              | 管脚    |           | 描述  |
|-----------------|-------|-----------|-----|
|                 | TO-92 | SOT-23-3L |     |
| V <sub>DD</sub> | 1     | 1         | 电源端 |
| GND             | 2     | 3         | 地端  |
| OUT             | 3     | 2         | 输出端 |

## 6、极限参数

| 参数   | 符号               | 参数值       | 单位 |
|------|------------------|-----------|----|
| 供电电压 | V <sub>CC</sub>  | 7.0       | V  |
| 输出电流 | I <sub>OUT</sub> | 0.2       | mA |
| 工作温度 | T <sub>A</sub>   | -40 ~ 150 | °C |
| 存储温度 | T <sub>S</sub>   | -65 ~ 150 | °C |
| 静电能力 | ESD              | 4         | KV |

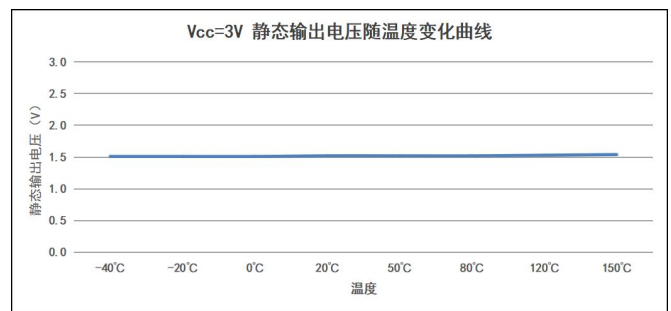
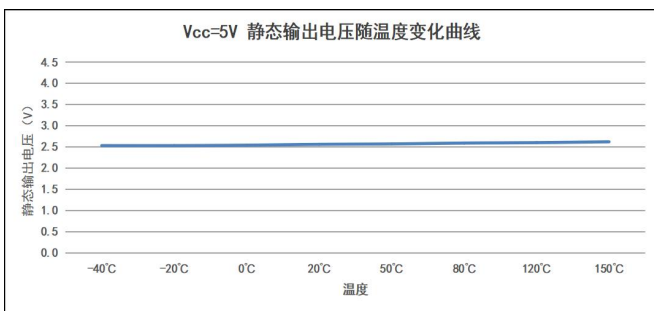
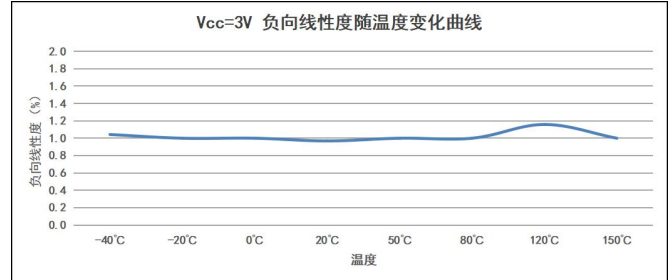
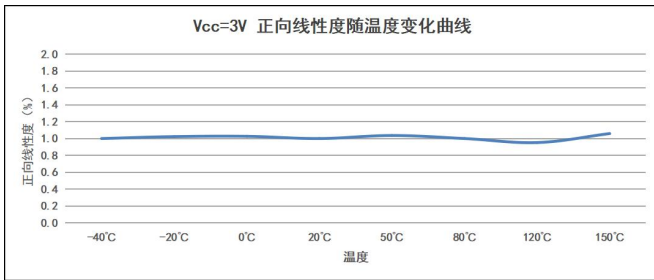
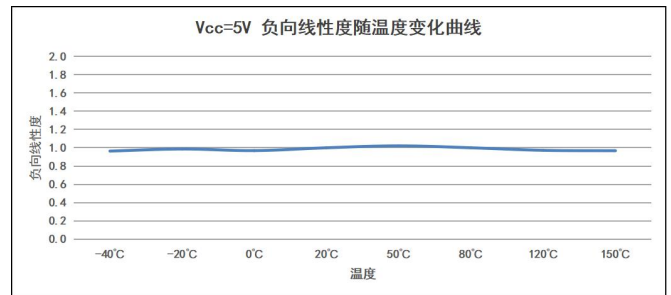
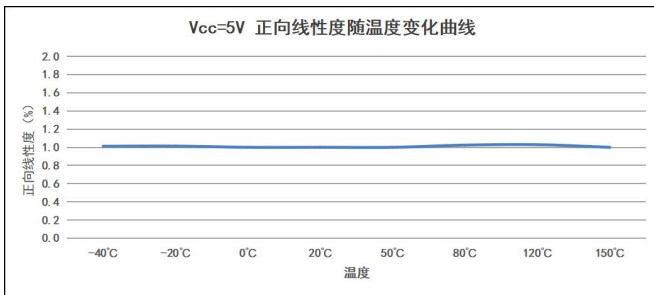
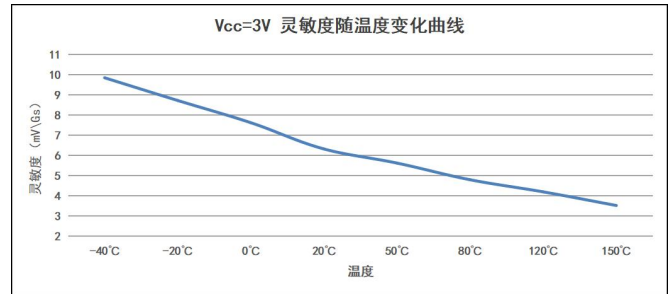
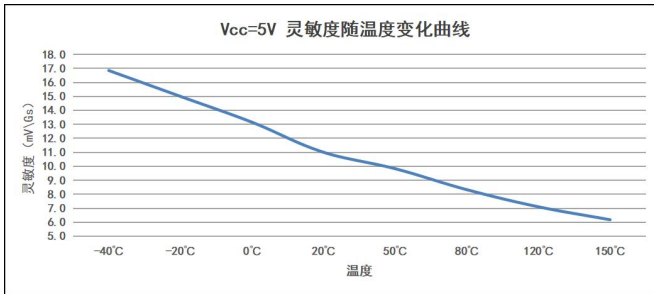
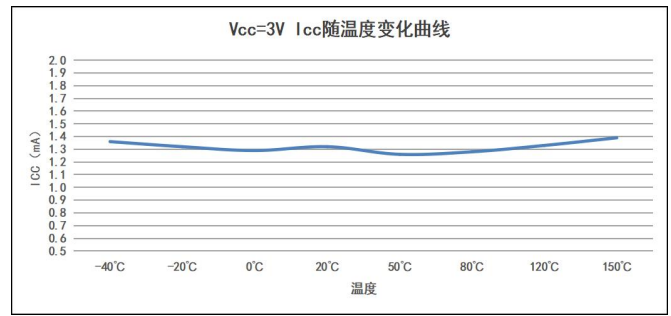
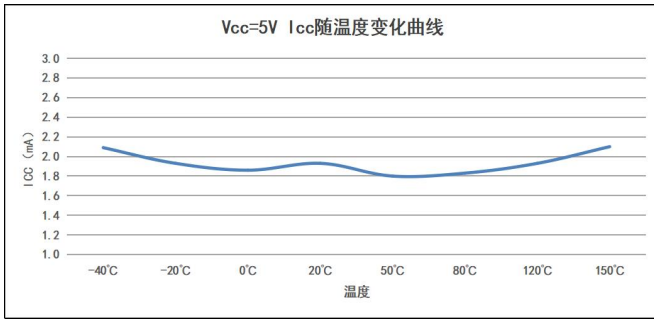
## 7、电学特性 (T<sub>A</sub> = 25°C, V<sub>CC</sub> = 5.0V)

| 参数   | 符号              | 测试条件                                    | 最小值 | 典型值 | 最大值 | 单位                |
|------|-----------------|---|-----|-----|-----|-------------------|
| 工作电压 | V <sub>CC</sub> | Operating                               | 2.5 | 5.0 | 6.5 | V                 |
| 工作电流 | I <sub>CC</sub> | V <sub>CC</sub> = 5.0V B=0Gs Non-Loaded | 1.2 | 1.9 | 2.8 | mA                |
|      |                 | V <sub>CC</sub> = 3.3V B=0Gs Non-Loaded |     | 1.4 | 2.0 | mA                |
| 输出电阻 | R <sub>O</sub>  | For PMOS                                | 50  | 85  | 120 | Ω                 |
| 噪音   | N <sub>F</sub>  | Effective value                         | 5   | 10  | 15  | mV <sub>RMS</sub> |
| 斩波频率 | F <sub>C</sub>  | V <sub>CC</sub> = 3.3V                  |     | 150 |     | KHz               |
| 带宽   | B <sub>W</sub>  | V <sub>CC</sub> = 3.3V                  |     | 6   |     | KHz               |

## 8、磁场特性

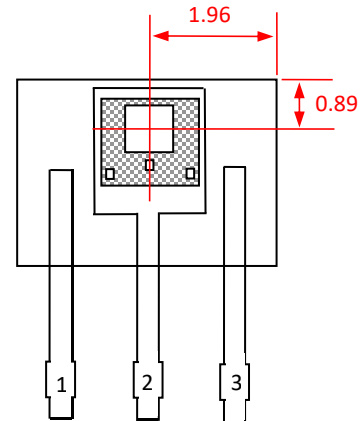
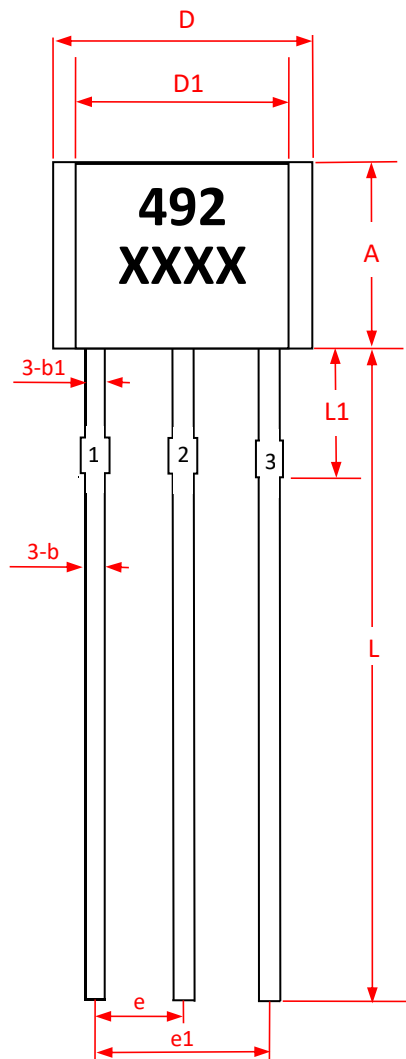
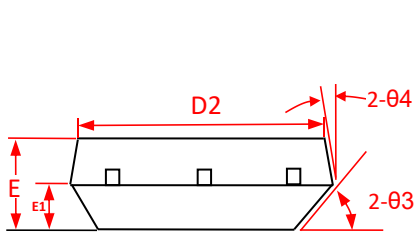
| 参数      | 符号                         | 测试条件   | 最小值                  | 典型值                | 最大值             | 单位     |
|---------|----------------------------|--|----------------------|--------------------|-----------------|--------|
| 静态输出电压  | V <sub>O</sub>             | B = 0Gs T <sub>A</sub> =25°C V <sub>CC</sub> =5.0V | 2.40                 | V <sub>CC</sub> /2 | 2.60            | V      |
|         |                            | B = 0Gs T <sub>A</sub> =25°C V <sub>CC</sub> =3.3V | 1.60                 | V <sub>CC</sub> /2 | 1.70            |        |
| 灵敏度     | V <sub>sen</sub>           | V <sub>CC</sub> =3.3V T <sub>A</sub> =25°C         | 6.0                  | 8.0                | 10              | mV/Gs  |
| 磁性强度范围  |                            | V <sub>CC</sub> =3.3V                              | ±275                 | ±200               | ±165            | Gs     |
| 线性度     | L <sub>IN</sub>            | V <sub>CC</sub> =3.3V T <sub>A</sub> =25°C         | 0                    | 0.85               | 1.3             | %      |
| 最低输出电压  | V <sub>L</sub>             | V <sub>CC</sub> = 3.3V                             | 0                    |                    | 0.2             | V      |
| 最高输出电压  | V <sub>H</sub>             | V <sub>CC</sub> = 3.3V                             | V <sub>CC</sub> -0.2 |                    | V <sub>CC</sub> | V      |
| 灵敏度高温漂移 | ΔSens(T <sub>A max</sub> ) | V <sub>CC</sub> =5V Total temperature              | -10                  | /                  | 5               | ppm/°C |
| 灵敏度低温漂移 | ΔSens(T <sub>A min</sub> ) |  | -3                   | /                  | 15              | ppm/°C |
| 灵敏度温度系数 | T <sub>C sens</sub>        |  | -1.5                 | /                  | 1.5             | %/°C   |

## 9、曲线特性



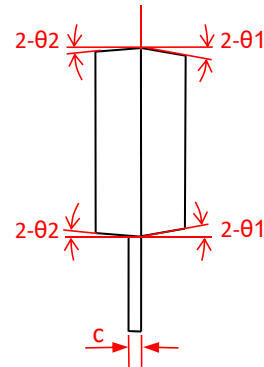
## 10、封装

### 10.1、UA 封装 (T0-92)



Sensor Location

Active Area Depth: 0.84(Nom)



#### Notes:

- 1) . 测量单位: mm;
- 2) . 引脚必须避开 Flash 和电镀针孔;
- 3) . 不要弯曲距离封装接口 1mm 以内的引脚线;
- 4) . 管脚: 脚 1 电源  
脚 2 地  
脚 3 输出

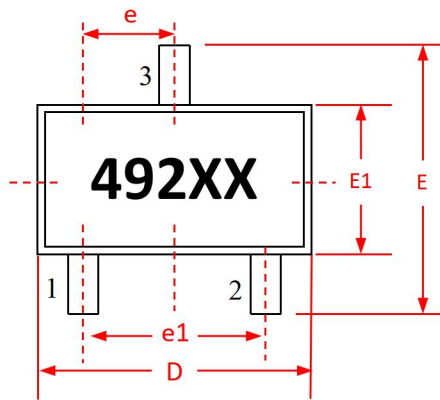
#### Marking:

492 - 器件型号;  
 XXXX - 批号; 年周

| 符号<br>SYMBOL | 机械尺寸/mm Dimensions |             |         |
|--------------|--------------------|-------------|---------|
|              | 最小值 MIN            | 典型值 NOMINAL | 最大值 MAX |
| A            | 2.9                | 3.0         | 3.1     |
| b            | 0.35               | 0.39        | 0.56    |
| b1           |                    | 0.44        |         |
| c            | 0.36               | 0.38        | 0.51    |
| D            | 3.9                | 4.0         | 4.1     |
| D1           |                    | 2.2         |         |
| D2           |                    | 3.5         |         |
| E            | 1.42               | 1.52        | 1.62    |
| E1           |                    | 0.75        |         |
| e            |                    | 1.27        |         |
| e1           |                    | 2.54        |         |
| L            | 13.5               | 14.5        | 15.5    |
| L1           |                    | 1.6         |         |
| ∠1           |                    | 6°          |         |
| ∠2           |                    | 3°          |         |
| ∠3           |                    | 45°         |         |
| ∠4           |                    | 3°          |         |

## 10.2、S0 封装 (SOT-23-3L)

Top View



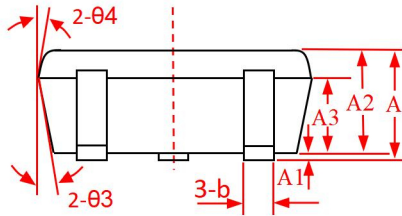
**Notes:**

- 1) . 测量单位: mm;
- 2) . 引脚必须避开 Flash 和电镀针孔;
- 3) . 不要弯曲距离封装接口 1mm 以内的引脚线;
- 4) . 管脚: 脚 1 电源  
脚 2 输出  
脚 3 地

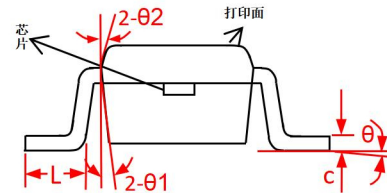
**Marking:**

492 - 器件型号  
 XX---年批;

Side View



End View



| 符号<br>SYMBOL | 机械尺寸/mm Dimensions |             |         |
|--------------|--------------------|-------------|---------|
|              | 最小值 MIN            | 典型值 NOMINAL | 最大值 MAX |
| A            | 1.070              | 1.160       | 1.250   |
| A1           | 0.020              | 0.060       | 0.100   |
| A2           | 1.050              | 1.100       | 1.150   |
| A3           | 0.600              | 0.650       | 0.700   |
| b            | 0.300              | 0.400       | 0.500   |
| c            | 0.100              | 0.152       | 0.200   |
| D            | 2.820              | 2.920       | 3.020   |
| E            | 2.650              | 2.800       | 2.950   |
| E1           | 1.500              | 1.600       | 1.700   |
| e            | 0.950BSC           |             |         |
| e1           | 1.800              | 1.900       | 2.000   |
| L            | 0.300              | 0.400       | 0.500   |
| θ            | 0°                 | 2°          | 4°      |
| θ1           |                    | 10°         |         |
| θ2           |                    | 9°          |         |
| θ3           |                    | 10°         |         |
| θ4           |                    | 9°          |         |