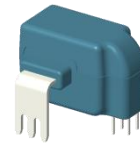


# 霍尔电流传感器 Hall Effect Current Sensor

## KPLS-XXA/2.5V±0.8V



本产品是一种电流传感器，采用电磁感应原理研制而成的开环电流传感器。传感器内置温漂补偿电路，在原副边电气隔离的情况下，可以精确测量直流、交流和脉冲等形式的电流信号。功耗低，体积小，具备出色的频响特性。

This product is a current sensor. It is an open-loop current sensor developed by the principle of electromagnetic induction. The built-in temperature drift compensation circuit of the sensor can accurately measure the current signals in the form of DC, AC and pulse when the primary secondary side is electrically isolated. Low power consumption, small size, with excellent frequency response characteristics.

| 产品特点 Product characteristics                                                                                                                                                                                                                                                                                                             | 应用 Application                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>集成霍尔技术</li> <li>Integrated Hall technology</li> <li>频带宽，高速响应 (&gt;150kHz)</li> <li>Wide frequency band, high speed response (&gt;150kHz)</li> <li>绝缘耐压 4KV/AC</li> <li>Insulation voltage 4KV/AC</li> <li>单电源供电</li> <li>Single power supply</li> <li>PCB 安装</li> <li>PCB installation</li> </ul> | <ul style="list-style-type: none"> <li>光伏逆变器</li> <li>Photovoltaic inverter</li> <li>开关电源</li> <li>Switching power supply</li> <li>变频调速系统</li> <li>Frequency conversion speed control system</li> <li>直流电机驱动</li> <li>DC motor drive</li> <li>电焊机电源</li> <li>Power supply for welding machine</li> </ul> |
| 优势 Advantages                                                                                                                                                                                                                                                                                                                            | 标准 Standard                                                                                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>高精度</li> <li>High precision</li> <li>低温漂</li> <li>Low temperature bleaching</li> <li>低磁滞</li> <li>Low hysteresis</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>EN50178</li> <li>IEC61326-1:2012</li> </ul>                                                                                                                                                                                                                       |
| 应用领域 Application area                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>工业 Industry</li> </ul>                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                          |

产品选型表 Product selection table

| 型号<br>Type         | 额定测量电流 (A)<br>Nominal Measuring Current (A) | 测量电流范围 (A)<br>Measuring current range (A) |
|--------------------|---------------------------------------------|-------------------------------------------|
| KPLS-10A/2.5V±0.8V | 10                                          | ±25                                       |
| KPLS-16A/2.5V±0.8V | 16                                          | ±40                                       |
| KPLS-20A/2.5V±0.8V | 20                                          | ±50                                       |
| KPLS-25A/2.5V±0.8V | 25                                          | ±62.5                                     |
| KPLS-32A/2.5V±0.8V | 32                                          | ±80                                       |

|                    |    |      |
|--------------------|----|------|
| KPLS-40A/2.5V±0.8V | 40 | ±100 |
| KPLS-50A/2.5V±0.8V | 50 | ±125 |

**绝对最大额定值** Absolute maximum ratings

| 参数<br>Parameter | 符号<br>Symbol   | 单位<br>Unit | 值<br>Value | 备注<br>Remark |
|-----------------|----------------|------------|------------|--------------|
| 电压<br>Voltage   | V <sub>c</sub> | V          | 6.5        |              |

**隔离参数** Isolation parameters

| 参数<br>Parameter            | 符号<br>Symbol   | 单位<br>Unit | 值<br>Value           | 备注<br>Remark              |
|----------------------------|----------------|------------|----------------------|---------------------------|
| 绝缘电压<br>Insulation voltage | V <sub>d</sub> | kV         | 4                    | @50HZ, AC, RMS, 2mA, 1min |
| 外壳材料<br>Shell material     |                |            | V0 according to UL94 |                           |

**环境和机械特性** Environmental and mechanical characteristics

| 参数<br>Parameter             | 标志<br>Symbol               | 单位<br>Unit | 最小值<br>Minimum value | 典型值<br>Typical value | 最大值<br>Maximum value | 备注<br>Remark |
|-----------------------------|----------------------------|------------|----------------------|----------------------|----------------------|--------------|
| 工作温度<br>Working temperature | T <sub>A</sub>             | °C         | -40                  |                      | 105                  |              |
| 存储温度<br>Storage temperature | T <sub>S</sub>             | °C         | -40                  |                      | 105                  |              |
| 质量<br>Quality               | m                          | g          |                      | 6.5                  |                      |              |
| 标准<br>Standard              | EN50178, IEC61010-1, UL508 |            |                      |                      |                      |              |

KPLS-10A/2. 5V±0. 8V 性能参数 Performance parameter

除特殊说明外 TA=25° C, VCC=5V, RL=10k Ω

| 参数<br>Parameter                             | 符号<br>Symbol     | 条件<br>Condition                    | 数值<br>Value          |                                                           |                      | 单位<br>Unit |
|---------------------------------------------|------------------|------------------------------------|----------------------|-----------------------------------------------------------|----------------------|------------|
|                                             |                  |                                    | 最小值<br>Minimum value | 典型值<br>Typical value                                      | 最大值<br>Maximum value |            |
| 常规指标<br>Conventional index                  |                  |                                    |                      |                                                           |                      |            |
| 额定测量电流<br>Nominal measuring current         | I <sub>PN</sub>  |                                    | -                    | ±10                                                       | -                    | A          |
| 测量电流范围<br>Measuring current range           | I <sub>PM</sub>  |                                    | -25                  | -                                                         | 25                   | A          |
| 灵敏度<br>sensitivity                          | S                |                                    | -                    | 80                                                        | -                    | mV/A       |
| 零点偏置电压<br>Zero bias voltage                 | V <sub>OFF</sub> | I <sub>P</sub> =0                  | -                    | 2.5                                                       | -                    | V          |
| 输出电压<br>Output voltage                      | V <sub>OUT</sub> | I <sub>P</sub> =0~±I <sub>PN</sub> | -                    | V <sub>REF</sub> ±0.8×<br>I <sub>P</sub> /I <sub>PN</sub> | -                    | V          |
| 供电电压<br>Supply voltage                      | V <sub>CC</sub>  |                                    | 4.75                 | 5                                                         | 5.25                 | V          |
| 电流消耗<br>Current consumption                 | I <sub>C</sub>   | I <sub>P</sub> =0                  | -                    | 10                                                        | 15                   | mA         |
| 原边导体电阻<br>Primary side conductor resistance | R <sub>IN</sub>  | T <sub>A</sub> =25℃                | -                    | 0.1                                                       | -                    | mΩ         |
| 输出内阻<br>Output internal resistance          | R <sub>OUT</sub> | -                                  | -                    | 2                                                         | 5                    | Ω          |
| 电阻负载<br>Resistive load                      | R <sub>L</sub>   | I <sub>P</sub> =0~±I <sub>PN</sub> | 5                    | 10                                                        | -                    | kΩ         |
| 静态指标<br>Static index                        |                  |                                    |                      |                                                           |                      |            |

|                                    |              |                                                                                              |      |          |      |               |
|------------------------------------|--------------|----------------------------------------------------------------------------------------------|------|----------|------|---------------|
| 综合误差<br>Combined error             | $X_G$        | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                                                | -    | $\pm 1$  | -    | % $I_{PN}$    |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                       | -3   | $\pm 2$  | 3    |               |
| 线性度误差<br>Linearity error           | $\epsilon_L$ | $I_P=0\sim\pm I_{PN}$                                                                        | -    | 0.5      | 1    | % $I_{PN}$    |
|                                    |              | $I_P=0\sim\pm I_{PM}$                                                                        | -    | 1        | 1.5  | % $I_{PM}$    |
| 灵敏度误差<br>Sensitivity error         | $\epsilon_S$ | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                                                | -1   | -        | 1    | %             |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                       | -1.5 | -        | 1.5  |               |
| 参考输出电压<br>Reference output voltage | $V_{REF}$    | $T_A=25^{\circ}\text{C}$                                                                     | 2.49 | 2.5      | 2.51 | V             |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$                                            | 2.48 | 2.5      | 2.52 |               |
| 零点失调电压<br>Zero offset voltage      | $V_{OE}$     | $T_A=25^{\circ}\text{C}, I_P=0$                                                              | -10  | -        | 10   | mV            |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0$                                     | -20  | $\pm 10$ | 20   |               |
| 磁滞<br>Hysteresis                   | $V_{OH}$     | $I_P=\pm I_{PM}\rightarrow 0$                                                                | -    | $\pm 5$  | -    | mV            |
| 动态指标<br>Dynamic index              |              |                                                                                              |      |          |      |               |
| 阶跃响应时间<br>Step response time       | $t_R$        | $di/dt>100\text{A}/\mu\text{s}, 90\%\text{ of } I_{PN} \text{ to } 90\% \text{ of } V_{OUT}$ | -    | 3        | -    | $\mu\text{s}$ |
| 带宽<br>Bandwidth                    | BW           | -3dB                                                                                         | -    | 150      | -    | kHz           |

KPLS-16A/2.5V $\pm$ 0.8V 性能参数 Performance parameter

除特殊说明外  $T_A=25^{\circ}\text{C}$ ,  $V_{CC}=5\text{V}$ ,  $R_L=10\text{k}\Omega$

| 参数<br>Parameter                     | 符号<br>Symbol    | 条件<br>Condition | 数值<br>Value          |                      |                      | 单位<br>Unit |
|-------------------------------------|-----------------|-----------------|----------------------|----------------------|----------------------|------------|
|                                     |                 |                 | 最小值<br>Minimum value | 典型值<br>Typical value | 最大值<br>Maximum value |            |
| 常规指标<br>Conventional index          |                 |                 |                      |                      |                      |            |
| 额定测量电流<br>Nominal measuring current | I <sub>PN</sub> |                 | -                    | ±16                  | -                    | A          |

|                                             |              |                                                        |      |                                   |      |            |
|---------------------------------------------|--------------|--------------------------------------------------------|------|-----------------------------------|------|------------|
| 测量电流范围<br>Measuring current range           | $I_{PM}$     |                                                        | -40  | -                                 | 40   | A          |
| 灵敏度<br>sensitivity                          | S            |                                                        | -    | 50                                | -    | mV/A       |
| 零点偏置电压<br>Zero bias voltage                 | $V_{OFF}$    | $I_P=0$                                                | -    | 2.5                               | -    | V          |
| 输出电压<br>Output voltage                      | $V_{OUT}$    | $I_P=0\sim\pm I_{PN}$                                  | -    | $V_{REF}\pm 0.8\times I_P/I_{PN}$ | -    | V          |
| 供电电压<br>Supply voltage                      | $V_{CC}$     |                                                        | 4.75 | 5                                 | 5.25 | V          |
| 电流消耗<br>Current consumption                 | $I_C$        | $I_P=0$                                                | -    | 10                                | 15   | mA         |
| 原边导体电阻<br>Primary side conductor resistance | $R_{IN}$     | $T_A=25^\circ C$                                       | -    | 0.1                               | -    | m $\Omega$ |
| 输出内阻<br>Output internal resistance          | $R_{OUT}$    | -                                                      | -    | 2                                 | 5    | $\Omega$   |
| 电阻负载<br>Resistive load                      | $R_L$        | $I_P=0\sim\pm I_{PN}$                                  | 5    | 10                                | -    | k $\Omega$ |
| 静态指标<br>Static index                        |              |                                                        |      |                                   |      |            |
| 综合误差<br>Combined error                      | $X_G$        | $T_A=25^\circ C, I_P=0\sim\pm I_{PN}$                  | -    | $\pm 1$                           | -    | % $I_{PN}$ |
|                                             |              | $T_A=-40^\circ C\sim+105^\circ C, I_P=0\sim\pm I_{PN}$ | -3   | $\pm 2$                           | 3    |            |
| 线性度误差<br>Linearity error                    | $\epsilon_L$ | $I_P=0\sim\pm I_{PN}$                                  | -    | 0.5                               | 1    | % $I_{PN}$ |
|                                             |              | $I_P=0\sim\pm I_{PM}$                                  | -    | 1                                 | 1.5  | % $I_{PM}$ |
| 灵敏度误差<br>Sensitivity error                  | $\epsilon_S$ | $T_A=25^\circ C, I_P=0\sim\pm I_{PN}$                  | -1   | -                                 | 1    | %          |
|                                             |              | $T_A=-40^\circ C\sim+105^\circ C, I_P=0\sim\pm I_{PN}$ | -1.5 | -                                 | 1.5  |            |
| 参考输出电压<br>Reference output voltage          | $V_{REF}$    | $T_A=25^\circ C$                                       | 2.49 | 2.5                               | 2.51 | V          |
|                                             |              | $T_A=-40^\circ C\sim+105^\circ C$                      | 2.48 | 2.5                               | 2.52 |            |
| 零点失调电压                                      | $V_{OE}$     | $T_A=25^\circ C, I_P=0$                                | -10  | -                                 | 10   | mV         |

|                              |          |                                                                         |     |          |    |               |
|------------------------------|----------|-------------------------------------------------------------------------|-----|----------|----|---------------|
| Zero offset voltage          |          | $T_A = -40^{\circ}\text{C} \sim +105^{\circ}\text{C}, I_P = 0$          | -20 | $\pm 10$ | 20 |               |
| 磁滞<br>Hysteresis             | $V_{OH}$ | $I_P = \pm I_{PM} \rightarrow 0$                                        | -   | $\pm 5$  | -  | mV            |
| 动态指标<br>Dynamic index        |          |                                                                         |     |          |    |               |
| 阶跃响应时间<br>Step response time | $t_R$    | $di/dt > 100\text{A}/\mu\text{s}$ , 90% of $I_{PN}$ to 90% of $V_{OUT}$ | -   | 3        | -  | $\mu\text{s}$ |
| 带宽<br>Bandwidth              | BW       | -3dB                                                                    | -   | 150      | -  | kHz           |

KPLS-20A/2.5V $\pm$ 0.8V 性能参数 Performance parameter

除特殊说明外  $T_A = 25^{\circ}\text{C}$ ,  $V_{CC} = 5\text{V}$ ,  $R_L = 10\text{k}\Omega$

| 参数<br>Parameter                     | 符号<br>Symbol     | 条件<br>Condition                    | 数值<br>Value          |                                                           |                      | 单位<br>Unit |
|-------------------------------------|------------------|------------------------------------|----------------------|-----------------------------------------------------------|----------------------|------------|
|                                     |                  |                                    | 最小值<br>Minimum value | 典型值<br>Typical value                                      | 最大值<br>Maximum value |            |
| 常规指标<br>Conventional index          |                  |                                    |                      |                                                           |                      |            |
| 额定测量电流<br>Nominal measuring current | I <sub>PN</sub>  |                                    | -                    | ±20                                                       | -                    | A          |
| 测量电流范围<br>Measuring current range   | I <sub>PM</sub>  |                                    | -50                  | -                                                         | 50                   | A          |
| 灵敏度<br>sensitivity                  | S                |                                    | -                    | 40                                                        | -                    | mV/A       |
| 零点偏置电压<br>Zero bias voltage         | V <sub>OFF</sub> | I <sub>P</sub> =0                  | -                    | 2.5                                                       | -                    | V          |
| 输出电压<br>Output voltage              | V <sub>OUT</sub> | I <sub>P</sub> =0~±I <sub>PN</sub> | -                    | V <sub>REF</sub> ±0.8×<br>I <sub>P</sub> /I <sub>PN</sub> | -                    | V          |
| 供电电压<br>Supply voltage              | V <sub>CC</sub>  |                                    | 4.75                 | 5                                                         | 5.25                 | V          |

|                                             |              |                                                                         |      |          |      |               |
|---------------------------------------------|--------------|-------------------------------------------------------------------------|------|----------|------|---------------|
| 电流消耗<br>Current consumption                 | $I_C$        | $I_P=0$                                                                 | -    | 10       | 15   | mA            |
| 原边导体电阻<br>Primary side conductor resistance | $R_{IN}$     | $T_A=25^{\circ}\text{C}$                                                | -    | 0.1      | -    | m $\Omega$    |
| 输出内阻<br>Output internal resistance          | $R_{OUT}$    | -                                                                       | -    | 2        | 5    | $\Omega$      |
| 电阻负载<br>Resistive load                      | $R_L$        | $I_P=0\sim\pm I_{PN}$                                                   | 5    | 10       | -    | k $\Omega$    |
| 静态指标<br>Static index                        |              |                                                                         |      |          |      |               |
| 综合误差<br>Combined error                      | $X_G$        | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                           | -    | $\pm 1$  | -    | % $I_{PN}$    |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$  | -3   | $\pm 2$  | 3    |               |
| 线性度误差<br>Linearity error                    | $\epsilon_L$ | $I_P=0\sim\pm I_{PN}$                                                   | -    | 0.5      | 1    | % $I_{PN}$    |
|                                             |              | $I_P=0\sim\pm I_{PM}$                                                   | -    | 1        | 1.5  | % $I_{PM}$    |
| 灵敏度误差<br>Sensitivity error                  | $\epsilon_S$ | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                           | -1   | -        | 1    | %             |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$  | -1.5 | -        | 1.5  |               |
| 参考输出电压<br>Reference output voltage          | $V_{REF}$    | $T_A=25^{\circ}\text{C}$                                                | 2.49 | 2.5      | 2.51 | V             |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$                       | 2.48 | 2.5      | 2.52 |               |
| 零点失调电压<br>Zero offset voltage               | $V_{OE}$     | $T_A=25^{\circ}\text{C}, I_P=0$                                         | -10  | -        | 10   | mV            |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0$                | -20  | $\pm 10$ | 20   |               |
| 磁滞<br>Hysteresis                            | $V_{OH}$     | $I_P=\pm I_{PM}\rightarrow 0$                                           | -    | $\pm 5$  | -    | mV            |
| 动态指标<br>Dynamic index                       |              |                                                                         |      |          |      |               |
| 阶跃响应时间<br>Step response time                | $t_R$        | $di/dt > 100\text{A}/\mu\text{s}$ , 90% of $I_{PN}$ to 90% of $V_{OUT}$ | -    | 3        | -    | $\mu\text{s}$ |
| 带宽<br>Bandwidth                             | BW           | -3dB                                                                    | -    | 150      | -    | kHz           |

KPLS-25A/2. 5V±0. 8V 性能参数 Performance parameter

除特殊说明外 TA=25° C, VCC=5V, RL=10k Ω

| 参数<br>Parameter                             | 符号<br>Symbol | 条件<br>Condition       | 数值<br>Value          |                                   |                      | 单位<br>Unit |
|---------------------------------------------|--------------|-----------------------|----------------------|-----------------------------------|----------------------|------------|
|                                             |              |                       | 最小值<br>Minimum value | 典型值<br>Typical value              | 最大值<br>Maximum value |            |
| 常规指标<br>Conventional index                  |              |                       |                      |                                   |                      |            |
| 额定测量电流<br>Nominal measuring current         | $I_{PN}$     |                       | -                    | $\pm 25$                          | -                    | A          |
| 测量电流范围<br>Measuring current range           | $I_{PM}$     |                       | -62.5                | -                                 | 62.5                 | A          |
| 灵敏度<br>sensitivity                          | S            |                       | -                    | 32                                | -                    | mV/A       |
| 零点偏置电压<br>Zero bias voltage                 | $V_{OFF}$    | $I_P=0$               | -                    | 2.5                               | -                    | V          |
| 输出电压<br>Output voltage                      | $V_{OUT}$    | $I_P=0\sim\pm I_{PN}$ | -                    | $V_{REF}\pm 0.8\times I_P/I_{PN}$ | -                    | V          |
| 供电电压<br>Supply voltage                      | $V_{CC}$     |                       | 4.75                 | 5                                 | 5.25                 | V          |
| 电流消耗<br>Current consumption                 | $I_C$        | $I_P=0$               | -                    | 10                                | 15                   | mA         |
| 原边导体电阻<br>Primary side conductor resistance | $R_{IN}$     | $T_A=25^{\circ}C$     | -                    | 0.1                               | -                    | mΩ         |
| 输出内阻<br>Output internal resistance          | $R_{OUT}$    | -                     | -                    | 2                                 | 5                    | Ω          |
| 电阻负载<br>Resistive load                      | $R_L$        | $I_P=0\sim\pm I_{PN}$ | 5                    | 10                                | -                    | kΩ         |
| 静态指标<br>Static index                        |              |                       |                      |                                   |                      |            |



|                                    |              |                                                                                              |      |          |      |               |
|------------------------------------|--------------|----------------------------------------------------------------------------------------------|------|----------|------|---------------|
| 综合误差<br>Combined error             | $X_G$        | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                                                | -    | $\pm 1$  | -    | % $I_{PN}$    |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                       | -3   | $\pm 2$  | 3    |               |
| 线性度误差<br>Linearity error           | $\epsilon_L$ | $I_P=0\sim\pm I_{PN}$                                                                        | -    | 0.5      | 1    | % $I_{PN}$    |
|                                    |              | $I_P=0\sim\pm I_{PM}$                                                                        | -    | 1        | 1.5  | % $I_{PM}$    |
| 灵敏度误差<br>Sensitivity error         | $\epsilon_S$ | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                                                | -1   | -        | 1    | %             |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                       | -1.5 | -        | 1.5  |               |
| 参考输出电压<br>Reference output voltage | $V_{REF}$    | $T_A=25^{\circ}\text{C}$                                                                     | 2.49 | 2.5      | 2.51 | V             |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$                                            | 2.48 | 2.5      | 2.52 |               |
| 零点失调电压<br>Zero offset voltage      | $V_{OE}$     | $T_A=25^{\circ}\text{C}, I_P=0$                                                              | -10  | -        | 10   | mV            |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0$                                     | -20  | $\pm 10$ | 20   |               |
| 磁滞<br>Hysteresis                   | $V_{OH}$     | $I_P=\pm I_{PM}\rightarrow 0$                                                                | -    | $\pm 5$  | -    | mV            |
| 动态指标<br>Dynamic index              |              |                                                                                              |      |          |      |               |
| 阶跃响应时间<br>Step response time       | $t_R$        | $di/dt>100\text{A}/\mu\text{s}, 90\%\text{ of } I_{PN} \text{ to } 90\% \text{ of } V_{OUT}$ | -    | 3        | -    | $\mu\text{s}$ |
| 带宽<br>Bandwidth                    | BW           | -3dB                                                                                         | -    | 150      | -    | kHz           |

KPLS-32A/2.5V $\pm$ 0.8V 性能参数 Performance parameter

除特殊说明外  $T_A=25^{\circ}\text{C}$ ,  $V_{CC}=5\text{V}$ ,  $R_L=10\text{k}\Omega$

| 参数<br>Parameter                     | 符号<br>Symbol    | 条件<br>Condition | 数值<br>Value          |                      |                      | 单位<br>Unit |
|-------------------------------------|-----------------|-----------------|----------------------|----------------------|----------------------|------------|
|                                     |                 |                 | 最小值<br>Minimum value | 典型值<br>Typical value | 最大值<br>Maximum value |            |
| 常规指标<br>Conventional index          |                 |                 |                      |                      |                      |            |
| 额定测量电流<br>Nominal measuring current | I <sub>PN</sub> |                 | -                    | ±32                  | -                    | A          |

|                                             |              |                                                                    |      |                                   |      |            |
|---------------------------------------------|--------------|--------------------------------------------------------------------|------|-----------------------------------|------|------------|
| 测量电流范围<br>Measuring current range           | $I_{PM}$     |                                                                    | -80  | -                                 | 80   | A          |
| 灵敏度<br>sensitivity                          | S            |                                                                    | -    | 25                                | -    | mV/A       |
| 零点偏置电压<br>Zero bias voltage                 | $V_{OFF}$    | $I_P=0$                                                            | -    | 2.5                               | -    | V          |
| 输出电压<br>Output voltage                      | $V_{OUT}$    | $I_P=0\sim\pm I_{PN}$                                              | -    | $V_{REF}\pm 0.8\times I_P/I_{PN}$ | -    | V          |
| 供电电压<br>Supply voltage                      | $V_{CC}$     |                                                                    | 4.75 | 5                                 | 5.25 | V          |
| 电流消耗<br>Current consumption                 | $I_C$        | $I_P=0$                                                            | -    | 10                                | 15   | mA         |
| 原边导体电阻<br>Primary side conductor resistance | $R_{IN}$     | $T_A=25^\circ\text{C}$                                             | -    | 0.1                               | -    | m $\Omega$ |
| 输出内阻<br>Output internal resistance          | $R_{OUT}$    | -                                                                  | -    | 2                                 | 5    | $\Omega$   |
| 电阻负载<br>Resistive load                      | $R_L$        | $I_P=0\sim\pm I_{PN}$                                              | 5    | 10                                | -    | k $\Omega$ |
| 静态指标<br>Static index                        |              |                                                                    |      |                                   |      |            |
| 综合误差<br>Combined error                      | $X_G$        | $T_A=25^\circ\text{C}, I_P=0\sim\pm I_{PN}$                        | -    | $\pm 1$                           | -    | % $I_{PN}$ |
|                                             |              | $T_A=-40^\circ\text{C}\sim+105^\circ\text{C}, I_P=0\sim\pm I_{PN}$ | -3   | $\pm 2$                           | 3    |            |
| 线性度误差<br>Linearity error                    | $\epsilon_L$ | $I_P=0\sim\pm I_{PN}$                                              | -    | 0.5                               | 1    | % $I_{PN}$ |
|                                             |              | $I_P=0\sim\pm I_{PM}$                                              | -    | 1                                 | 1.5  | % $I_{PM}$ |
| 灵敏度误差<br>Sensitivity error                  | $\epsilon_S$ | $T_A=25^\circ\text{C}, I_P=0\sim\pm I_{PN}$                        | -1   | -                                 | 1    | %          |
|                                             |              | $T_A=-40^\circ\text{C}\sim+105^\circ\text{C}, I_P=0\sim\pm I_{PN}$ | -1.5 | -                                 | 1.5  |            |
| 参考输出电压<br>Reference output                  | $V_{REF}$    | $T_A=25^\circ\text{C}$                                             | 2.49 | 2.5                               | 2.51 | V          |
|                                             |              | $T_A=-40^\circ\text{C}\sim+105^\circ\text{C}$                      | 2.48 | 2.5                               | 2.52 |            |

|                                  |          |                                                                          |     |          |    |               |
|----------------------------------|----------|--------------------------------------------------------------------------|-----|----------|----|---------------|
| voltage                          |          |                                                                          |     |          |    |               |
| 零点失调电压<br>Zero offset<br>voltage | $V_{OE}$ | $T_A=25^{\circ}\text{C}, I_P=0$                                          | -10 | -        | 10 | mV            |
|                                  |          | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0$                 | -20 | $\pm 10$ | 20 |               |
| 磁滞<br>Hysteresis                 | $V_{OH}$ | $I_P=\pm I_{PM}\rightarrow 0$                                            | -   | $\pm 5$  | -  | mV            |
| 动态指标<br>Dynamic index            |          |                                                                          |     |          |    |               |
| 阶跃响应时间<br>Step response<br>time  | $t_R$    | $di/dt>100\text{A}/\mu\text{s}$ , 90% of $I_{PN}$ to<br>90% of $V_{OUT}$ | -   | 3        | -  | $\mu\text{s}$ |
| 带宽<br>Bandwidth                  | BW       | -3dB                                                                     | -   | 150      | -  | kHz           |

KPLS-40A/2. 5V $\pm$ 0. 8V 性能参数 Performance parameter

除特殊说明外  $T_A=25^{\circ}\text{C}$ ,  $V_{CC}=5\text{V}$ ,  $R_L=10\text{k}\Omega$

| 参数<br>Parameter                     | 符号<br>Symbol     | 条件<br>Condition                    | 数值<br>Value          |                                                           |                      | 单位<br>Unit |
|-------------------------------------|------------------|------------------------------------|----------------------|-----------------------------------------------------------|----------------------|------------|
|                                     |                  |                                    | 最小值<br>Minimum value | 典型值<br>Typical value                                      | 最大值<br>Maximum value |            |
| 常规指标<br>Conventional index          |                  |                                    |                      |                                                           |                      |            |
| 额定测量电流<br>Nominal measuring current | I <sub>PN</sub>  |                                    | -                    | ±40                                                       | -                    | A          |
| 测量电流范围<br>Measuring current range   | I <sub>PM</sub>  |                                    | -100                 | -                                                         | 100                  | A          |
| 灵敏度<br>sensitivity                  | S                |                                    | -                    | 20                                                        | -                    | mV/A       |
| 零点偏置电压<br>Zero bias voltage         | V <sub>OFF</sub> | I <sub>p</sub> =0                  | -                    | 2.5                                                       | -                    | V          |
| 输出电压<br>Output                      | V <sub>OUT</sub> | I <sub>p</sub> =0~±I <sub>PN</sub> | -                    | V <sub>REF</sub> ±0.8×<br>I <sub>p</sub> /I <sub>PN</sub> | -                    | V          |

|                                             |              |                                                                         |      |          |      |            |
|---------------------------------------------|--------------|-------------------------------------------------------------------------|------|----------|------|------------|
| voltage                                     |              |                                                                         |      |          |      |            |
| 供电电压<br>Supply voltage                      | $V_{CC}$     |                                                                         | 4.75 | 5        | 5.25 | V          |
| 电流消耗<br>Current consumption                 | $I_C$        | $I_p=0$                                                                 | -    | 10       | 15   | mA         |
| 原边导体电阻<br>Primary side conductor resistance | $R_{IN}$     | $T_A=25^{\circ}\text{C}$                                                | -    | 0.1      | -    | mΩ         |
| 输出内阻<br>Output internal resistance          | $R_{OUT}$    | -                                                                       | -    | 2        | 5    | Ω          |
| 电阻负载<br>Resistive load                      | $R_L$        | $I_p=0\sim\pm I_{PN}$                                                   | 5    | 10       | -    | kΩ         |
| 静态指标<br>Static index                        |              |                                                                         |      |          |      |            |
| 综合误差<br>Combined error                      | $X_G$        | $T_A=25^{\circ}\text{C}, I_p=0\sim\pm I_{PN}$                           | -    | $\pm 1$  | -    | % $I_{PN}$ |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_p=0\sim\pm I_{PN}$  | -3   | $\pm 2$  | 3    |            |
| 线性度误差<br>Linearity error                    | $\epsilon_L$ | $I_p=0\sim\pm I_{PN}$                                                   | -    | 0.5      | 1    | % $I_{PN}$ |
|                                             |              | $I_p=0\sim\pm I_{PM}$                                                   | -    | 1        | 1.5  | % $I_{PM}$ |
| 灵敏度误差<br>Sensitivity error                  | $\epsilon_S$ | $T_A=25^{\circ}\text{C}, I_p=0\sim\pm I_{PN}$                           | -1   | -        | 1    | %          |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_p=0\sim\pm I_{PN}$  | -1.5 | -        | 1.5  |            |
| 参考输出电压<br>Reference output voltage          | $V_{REF}$    | $T_A=25^{\circ}\text{C}$                                                | 2.49 | 2.5      | 2.51 | V          |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$                       | 2.48 | 2.5      | 2.52 |            |
| 零点失调电压<br>Zero offset voltage               | $V_{OE}$     | $T_A=25^{\circ}\text{C}, I_p=0$                                         | -10  | -        | 10   | mV         |
|                                             |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_p=0$                | -20  | $\pm 10$ | 20   |            |
| 磁滞<br>Hysteresis                            | $V_{OH}$     | $I_p=\pm I_{PM}\rightarrow 0$                                           | -    | $\pm 5$  | -    | mV         |
| 动态指标<br>Dynamic index                       |              |                                                                         |      |          |      |            |
| 阶跃响应时间                                      | $t_R$        | $di/dt > 100\text{A}/\mu\text{s}$ , 90% of $I_{PN}$ to 90% of $V_{OUT}$ | -    | 3        | -    | μs         |
| 带宽                                          | BW           | -3dB                                                                    | -    | 150      | -    | kHz        |

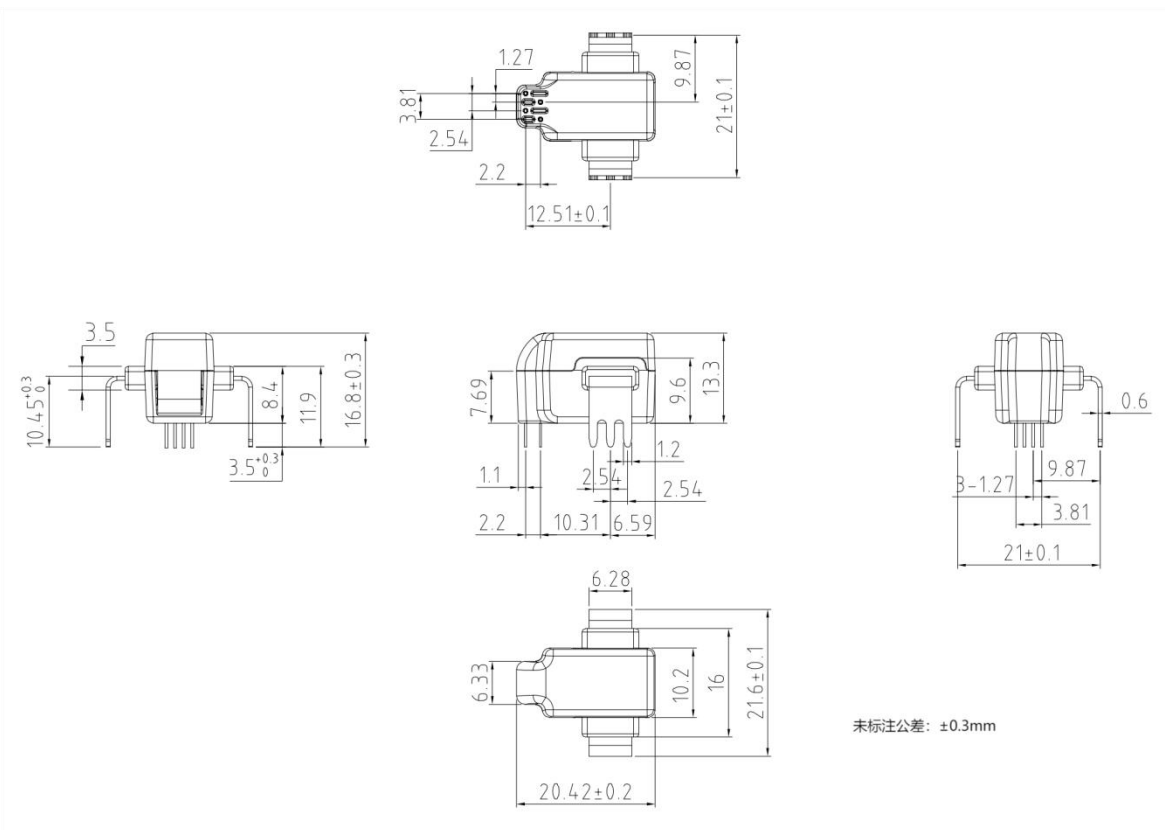
KPLS-50A/2. 5V±0. 8V 性能参数 Performance parameter

除特殊说明外 TA=25° C, VCC=5V, RL=10k Ω

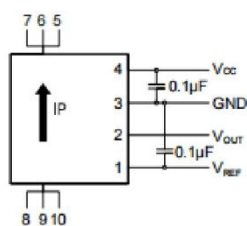
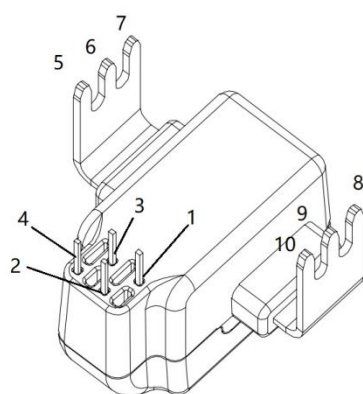
| 参数<br>Parameter                             | 符号<br>Symbol     | 条件<br>Condition                    | 数值<br>Value          |                                                           |                      | 单位<br>Unit |
|---------------------------------------------|------------------|------------------------------------|----------------------|-----------------------------------------------------------|----------------------|------------|
|                                             |                  |                                    | 最小值<br>Minimum value | 典型值<br>Typical value                                      | 最大值<br>Maximum value |            |
| 常规指标<br>Conventional index                  |                  |                                    |                      |                                                           |                      |            |
| 额定测量电流<br>Nominal measuring current         | I <sub>PN</sub>  |                                    | -                    | ±50                                                       | -                    | A          |
| 测量电流范围<br>Measuring current range           | I <sub>PM</sub>  |                                    | -125                 | -                                                         | 125                  | A          |
| 灵敏度<br>sensitivity                          | S                |                                    | -                    | 16                                                        | -                    | mV/A       |
| 零点偏置电压<br>Zero bias voltage                 | V <sub>OFF</sub> | I <sub>P</sub> =0                  | -                    | 2.5                                                       | -                    | V          |
| 输出电压<br>Output voltage                      | V <sub>OUT</sub> | I <sub>P</sub> =0~±I <sub>PN</sub> | -                    | V <sub>REF</sub> ±0.8×<br>I <sub>P</sub> /I <sub>PN</sub> | -                    | V          |
| 供电电压<br>Supply voltage                      | V <sub>CC</sub>  |                                    | 4.75                 | 5                                                         | 5.25                 | V          |
| 电流消耗<br>Current consumption                 | I <sub>C</sub>   | I <sub>P</sub> =0                  | -                    | 10                                                        | 15                   | mA         |
| 原边导体电阻<br>Primary side conductor resistance | R <sub>IN</sub>  | T <sub>A</sub> =25℃                | -                    | 0.1                                                       | -                    | mΩ         |
| 输出内阻<br>Output internal resistance          | R <sub>OUT</sub> | -                                  | -                    | 2                                                         | 5                    | Ω          |
| 电阻负载<br>Resistive load                      | R <sub>L</sub>   | I <sub>P</sub> =0~±I <sub>PN</sub> | 5                    | 10                                                        | -                    | kΩ         |
| 静态指标<br>Static index                        |                  |                                    |                      |                                                           |                      |            |

|                                    |              |                                                                                              |      |          |      |               |
|------------------------------------|--------------|----------------------------------------------------------------------------------------------|------|----------|------|---------------|
| 综合误差<br>Combined error             | $X_G$        | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                                                | -    | $\pm 1$  | -    | % $I_{PN}$    |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                       | -3   | $\pm 2$  | 3    |               |
| 线性度误差<br>Linearity error           | $\epsilon_L$ | $I_P=0\sim\pm I_{PN}$                                                                        | -    | 0.5      | 1    | % $I_{PN}$    |
|                                    |              | $I_P=0\sim\pm I_{PM}$                                                                        | -    | 1        | 1.5  | % $I_{PM}$    |
| 灵敏度误差<br>Sensitivity error         | $\epsilon_S$ | $T_A=25^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                                                | -1   | -        | 1    | %             |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0\sim\pm I_{PN}$                       | -1.5 | -        | 1.5  |               |
| 参考输出电压<br>Reference output voltage | $V_{REF}$    | $T_A=25^{\circ}\text{C}$                                                                     | 2.49 | 2.5      | 2.51 | V             |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}$                                            | 2.48 | 2.5      | 2.52 |               |
| 零点失调电压<br>Zero offset voltage      | $V_{OE}$     | $T_A=25^{\circ}\text{C}, I_P=0$                                                              | -10  | -        | 10   | mV            |
|                                    |              | $T_A=-40^{\circ}\text{C}\sim+105^{\circ}\text{C}, I_P=0$                                     | -20  | $\pm 10$ | 20   |               |
| 磁滞<br>Hysteresis                   | $V_{OH}$     | $I_P=\pm I_{PM}\rightarrow 0$                                                                | -    | $\pm 5$  | -    | mV            |
| 动态指标<br>Dynamic index              |              |                                                                                              |      |          |      |               |
| 阶跃响应时间<br>Step response time       | $t_R$        | $di/dt>100\text{A}/\mu\text{s}, 90\%\text{ of } I_{PN} \text{ to } 90\% \text{ of } V_{OUT}$ | -    | 3        | -    | $\mu\text{s}$ |
| 带宽<br>Bandwidth                    | BW           | -3dB                                                                                         | -    | 150      | -    | kHz           |

## 结构参数 Dimensions(in mm)

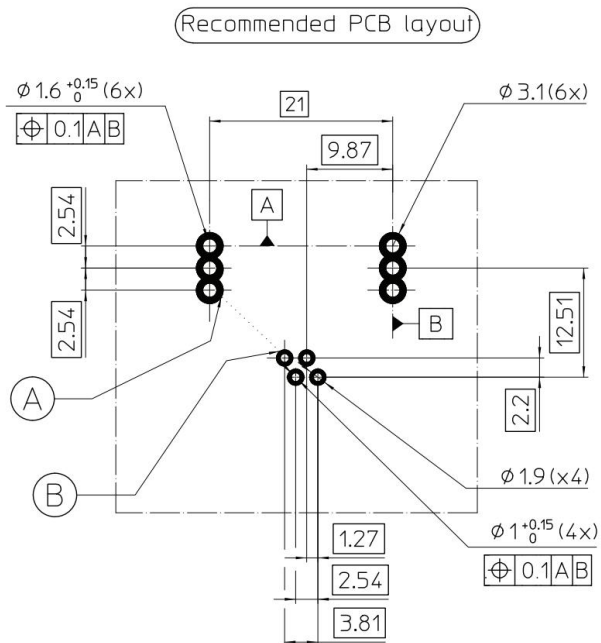


## 引脚定义及接线图 Pin definition and wiring diagram



| 引脚序号 | 引脚名       | 功能        |
|------|-----------|-----------|
| 1    | $V_{REF}$ | 参考电压输出    |
| 2    | $V_{OUT}$ | 电压输出      |
| 3    | GND       | 电源地       |
| 4    | $V_{CC}$  | 电源        |
| 5~7  | $I_p^-$   | 原边电流 (反向) |
| 8~10 | $I_p^+$   | 原边电流 (正向) |

## 参考封装 Assembly on PCB



|     | $d_{cl}$ (mm) | $d_{cp}$ (mm) |
|-----|---------------|---------------|
| A-B | 9.42          | 9.42          |

- 波峰焊: 260°C @ 10 秒
- 推荐 PCB 二次引脚孔径 1.2mm