

## 典型性能 Features

- ◆ 30 瓦功率输出 (30 Watts of Output Power)
- ◆ 超宽电压输入 (4:1 Wide Range Input)
- ◆ 长期短路保护, 自恢复 (Short Circuit Protection, Automatic Recovery)
- ◆ 小型化封装 (Small Package)



## 电气特性 Electrical Specifications

| 输入特性 Input                    | Min                                       | Type     | Max                                      | Notes                                                                      |
|-------------------------------|-------------------------------------------|----------|------------------------------------------|----------------------------------------------------------------------------|
| 输入电压范围                        | 9V                                        | 24V      | 36V                                      |                                                                            |
| Input Voltage Range           | 18V                                       | 48V      | 72V                                      |                                                                            |
| 启动延时时间<br>Start-up Delay Time |                                           | 10mS     |                                          |                                                                            |
| 控制功能                          |                                           | ON       |                                          | CNT 悬空或接TTL高电平<br>CNT pin left open or CNT pin connected to TTL logic high |
| ON/OFF Control                |                                           | OFF      |                                          | CNT 与-Vin 相连<br>CNT pin is at a logic low                                  |
| 逻辑低 Logic Low                 |                                           |          | 1.2 V                                    |                                                                            |
| 输入欠压保护                        | 6V                                        |          | 9V                                       | 24V输入                                                                      |
| Input. Under-voltage Lockout  | 13V                                       |          | 18V                                      | 48V输入                                                                      |
| 输出特性 Output                   | Min                                       | Type     | Max                                      | Notes                                                                      |
| 输出电压精度                        |                                           | ±1%      | ±3%                                      | 一路                                                                         |
| Set point Accuracy            |                                           | ±3%      | ±5%                                      | 二路                                                                         |
| 负载效应                          |                                           | ±0.5%    | ±1%                                      | 一路                                                                         |
| Load Regulation               |                                           |          |                                          |                                                                            |
| 源效应                           |                                           | ±0.2%    | ±1%                                      | 一路                                                                         |
| Line Regulation               |                                           |          |                                          |                                                                            |
| 输出电压调节<br>TRIM Range          |                                           |          | ±10%                                     |                                                                            |
| 动态响应                          |                                           |          | 4%Vo Pk deviation<br>400μS settling time | 50~75% load 50~25% load                                                    |
| Dynamic Response              |                                           |          |                                          |                                                                            |
| 温度系数                          |                                           | ±0.2%/°C |                                          |                                                                            |
| Temperature Regulation        |                                           |          |                                          |                                                                            |
| 输出过流保护                        | 110%                                      |          | 160%                                     |                                                                            |
| Current Limit Threshold       |                                           |          |                                          |                                                                            |
| 输出过压保护                        | 110%                                      |          | 140%                                     |                                                                            |
| Over-voltage Protection       |                                           |          |                                          |                                                                            |
| 短路保护                          | 长期短路自恢复<br>Continuous, Automatic Recovery |          |                                          |                                                                            |
| Short-Circuit Protection      |                                           |          |                                          |                                                                            |
| 综合特性 General                  | Min                                       | Type     | Max                                      | Notes                                                                      |
| 隔离电压                          | 1500Vdc                                   |          |                                          | INPUT TO OUT                                                               |
| Isolation Voltage             |                                           |          |                                          |                                                                            |
| 开关频率                          |                                           | 300KHz   |                                          |                                                                            |
| Switching Frequency           |                                           |          |                                          |                                                                            |

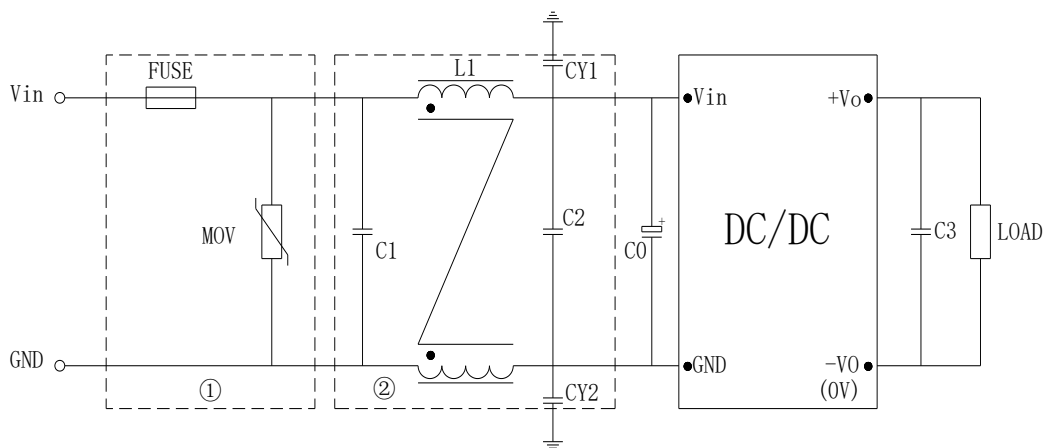
|                                     |                                                            |      |                       |       |                       |
|-------------------------------------|------------------------------------------------------------|------|-----------------------|-------|-----------------------|
| 平均故障间隔时间<br>MTBF                    |                                                            |      | 2×10 <sup>6</sup> Hrs |       | Mil HDBK 217F Tc=25℃  |
| 工作壳温<br>Case Temperature            | 工业级                                                        | -40℃ |                       | +100℃ |                       |
|                                     | AD、AG 级                                                    | -40℃ |                       | +105℃ | 需散热器                  |
|                                     | AHIII 级                                                    | -55℃ |                       | +105℃ | 需散热器                  |
| 储存温度<br>Storage Temperature         |                                                            | -55℃ |                       | +125℃ |                       |
| 相对湿度<br>Relative Humidity           |                                                            | 10%  |                       | 90%   |                       |
| 管脚焊接温度<br>Pin Solder Temperature    |                                                            |      |                       | 250℃  | Wave Solder <10S      |
| 手工焊接时间<br>Hand Soldering Time       |                                                            |      |                       | 5S    | Iron Temperature 425℃ |
| 传导<br>Conducted Emission            | GB9254/CISPR22/EN55022 Class B (推荐电路见图)                    |      |                       |       |                       |
| 静电放电<br>Electrostatic Discharge     | GB17626/EN61000-4-2 Contact ±6KV air ±8KV perf. Criteria A |      |                       |       |                       |
| 浪涌抗扰度<br>Surge Immunity             | GB17626/EN61000-4-5 ±2KV (推荐电路见图) perf. Criteria A         |      |                       |       |                       |
| 脉冲群抗扰度<br>Electrical Fast Transient | GB17626/EN61000-4-4 ±2KV (推荐电路见图) perf. CriteriaA          |      |                       |       |                       |

| 型号<br>Models | 输入电压范围<br>Input Voltage Range | 输出电压 (Vdc)<br>Output Voltage | 输出电流 (A)<br>Output current | 纹波噪声(mv)<br>Ripple and noise | 典型效率<br>Efficiency | 容性负载(μF)<br>Max.Capacitor Load |
|--------------|-------------------------------|------------------------------|----------------------------|------------------------------|--------------------|--------------------------------|
| WSD30-24S3V3 | 9-36V                         | 3.3                          | 6.0                        | 50                           | 86%                | 6800                           |
| WSD30-24S5   | 9-36V                         | 5.05                         | 6.0                        | 80                           | 86%                | 6800                           |
| WSD30-24S9   | 9-36V                         | 9                            | 3.33                       | 100                          | 85%                | 680                            |
| WSD30-24S12  | 9-36V                         | 12                           | 2.5                        | 120                          | 87%                | 680                            |
| WSD30-24S15  | 9-36V                         | 15                           | 2.0                        | 150                          | 87%                | 680                            |
| WSD30-24S24  | 9-36V                         | 24                           | 1.25                       | 240                          | 88%                | 470                            |
| WSD30-24S28  | 9-36V                         | 28                           | 1.07                       | 280                          | 88%                | 470                            |
| WSD30-24S48  | 9-36V                         | 48                           | 0.625                      | 480                          | 88%                | 220                            |
| WSD20-48S3V3 | 18-72V                        | 3.3                          | 6.0                        | 50                           | 88%                | 6800                           |
| WSD30-48S5   | 18-72V                        | 5.05                         | 6.0                        | 80                           | 88%                | 6800                           |
| WSD30-48S9   | 18-72V                        | 9                            | 3.33                       | 100                          | 89%                | 680                            |
| WSD30-48S12  | 18-72V                        | 12                           | 2.5                        | 120                          | 89%                | 680                            |

|             |        |       |       |     |     |      |
|-------------|--------|-------|-------|-----|-----|------|
| WSD30-48S15 | 18-72V | 15    | 2.0   | 150 | 89% | 680  |
| WSD30-48S24 | 18-72V | 24    | 1.25  | 240 | 88% | 470  |
| WSD30-48S28 | 18-72V | 28    | 1.07  | 280 | 88% | 470  |
| WSD30-48S48 | 18-72V | 48    | 0.625 | 480 | 88% | 220  |
| WSD30-24D5  | 9-36V  | ±5.05 | ±3.0  | 80  | 86% | 2200 |
| WSD30-24D12 | 9-36V  | ±12.0 | ±1.25 | 120 | 88% | 1000 |
| WSD30-24D15 | 9-36V  | ±15.0 | ±1.0  | 150 | 88% | 680  |
| WSD30-48D5  | 18-72V | ±5.05 | ±3.0  | 80  | 86% | 2200 |
| WSD30-48D12 | 18-72V | ±12.0 | ±1.25 | 120 | 88% | 1000 |
| WSD30-48D15 | 18-72V | ±15.0 | ±1.0  | 150 | 88% | 680  |

■说明：仅列出典型型号，其它型号，请确定功率，输入电压及输出电压，致电我公司。

## 磁兼容应用（EMC）



**FUSE:**推荐采用慢熔型的产品，FUSE 电流选择要考虑高温降额和冲击电流的影响。

**MOV:**压敏电阻，MOV 可以和保险丝串联应用，防止 MOV 失效。也可以两只 MOV 串联，增加可靠性。

**C0 C3:**高频电解电容

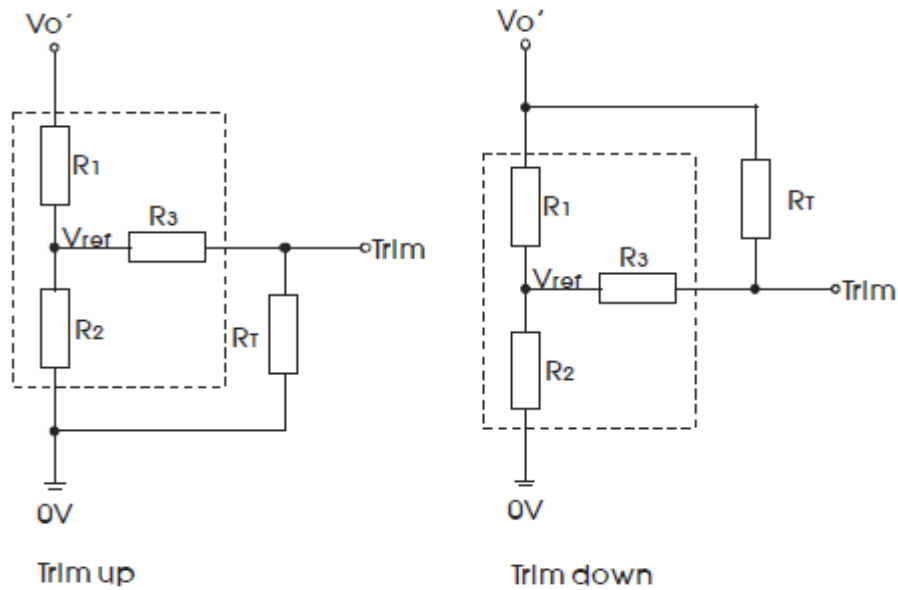
**C1 C2:**高频独石电容或者薄膜电容。

**LCM:**共模电感。具体型号请咨询销售人员。

**CY1 CY2:**安规 Y2 电容

| 型号      | Vin: 24V      | Vin: 48V   |
|---------|---------------|------------|
| FUSE    | 6A 慢熔         | 4A 慢熔      |
| MOV     | 14D101K       | 14D101K    |
| C0      | 220μF/50V     | 100μF/100V |
| C1、C2   | 4.7μF/50V     | 2.2μF/100V |
| C3      | 100μF         |            |
| LCM     | 3mH           |            |
| CY1、CY2 | 4.7nF Y2 安规电容 |            |

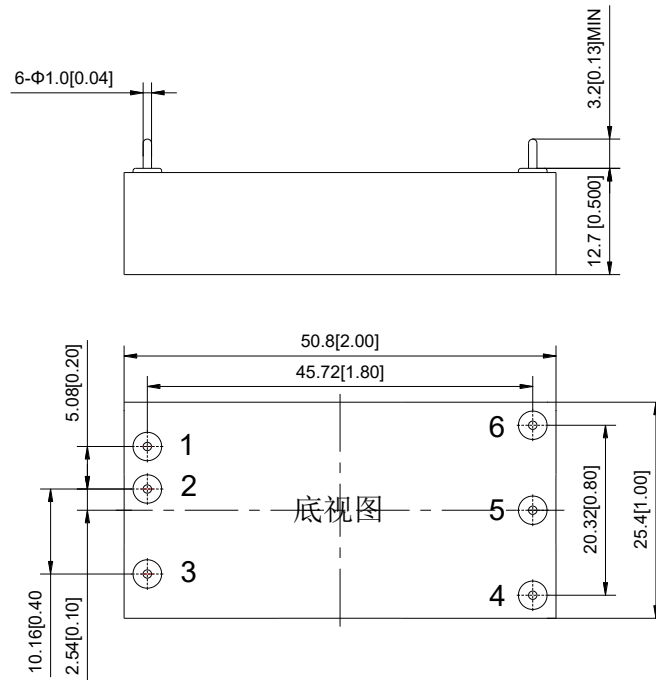
## 输出调节应用 (TRIM Function)



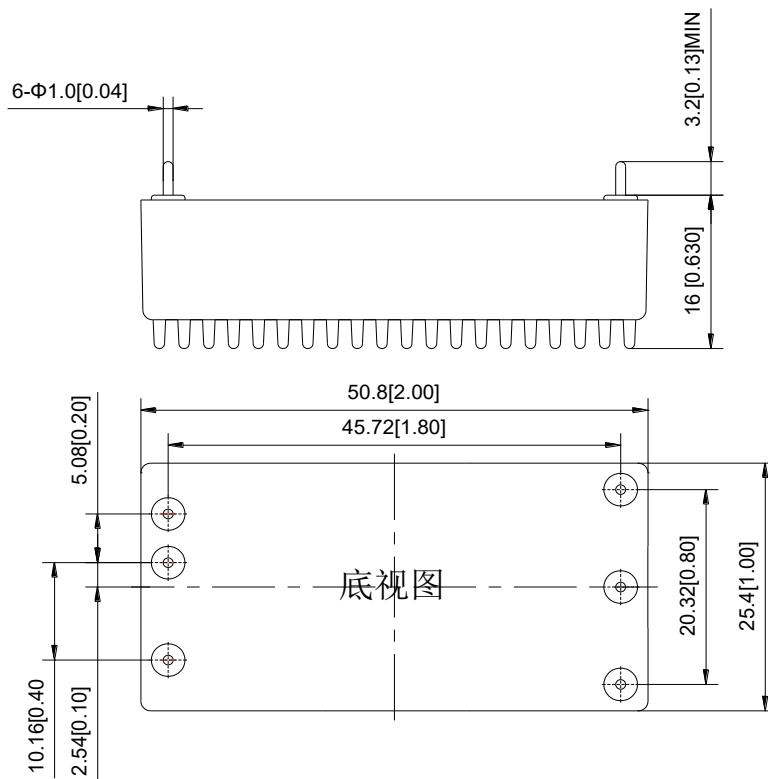
$$\begin{aligned}
 \text{up: } R_T &= \frac{TR_2}{R_2 - T} - R_3 & T &= \frac{V_{ref}}{V_{o'} - V_{ref}} \cdot R_1 \text{ (调高电压)} \\
 \text{down: } R_T &= \frac{TR_1}{R_1 - T} - R_3 & T &= \frac{V_{o'} - V_{ref}}{V_{ref}} \cdot R_2 \text{ (调低电压)}
 \end{aligned}$$

| Vout (V) | R1(KΩ) | R2(KΩ) | R3(KΩ) | Vref(V) |
|----------|--------|--------|--------|---------|
| 3.3      | 3.32   | 2.0    | 8.2    | 1.24    |
| 5        | 2.55   | 2.49   | 8.2    | 2.5     |
| 9        | 6.49   | 2.49   | 10     | 2.5     |
| 12       | 9.53   | 2.49   | 12     | 2.5     |
| 15       | 12.5   | 2.49   | 15     | 2.5     |
| 24       | 21.5   | 2.49   | 20     | 2.5     |
| 28       | 25.5   | 2.49   | 20     | 2.5     |
| 48       | 45.3   | 2.49   | 22     | 2.5     |

## 机械图及管脚说明 (Mechanical Chart、Pins) (Unit: mm/inch)



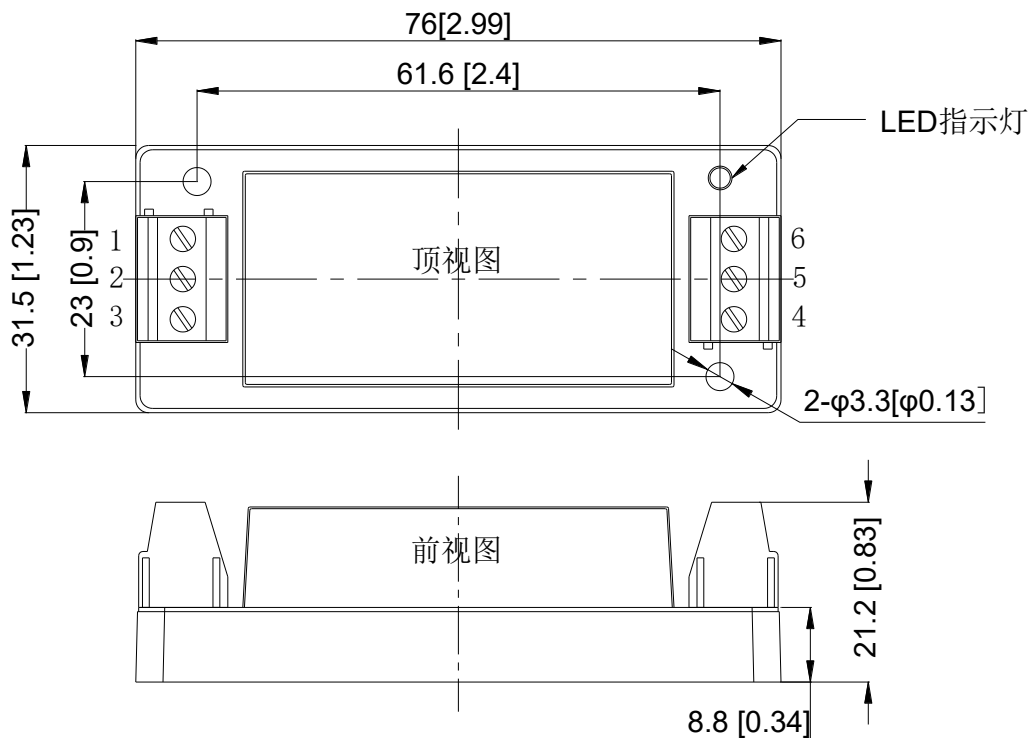
带散热器型



| 管脚 | 1    | 2    | 3   | 4    | 5   | 6   |
|----|------|------|-----|------|-----|-----|
| 单路 | +Vin | -Vin | CNT | TRIM | -Vo | +Vo |
| 双路 | +Vin | -Vin | CNT | -Vo  | COM | +Vo |

注:安装定位尺寸公差按 GB/T1804-2000 F 级标准、外型尺寸公差按 GB/T1804-2000 C 级标准

尾缀为 D1 的机械图

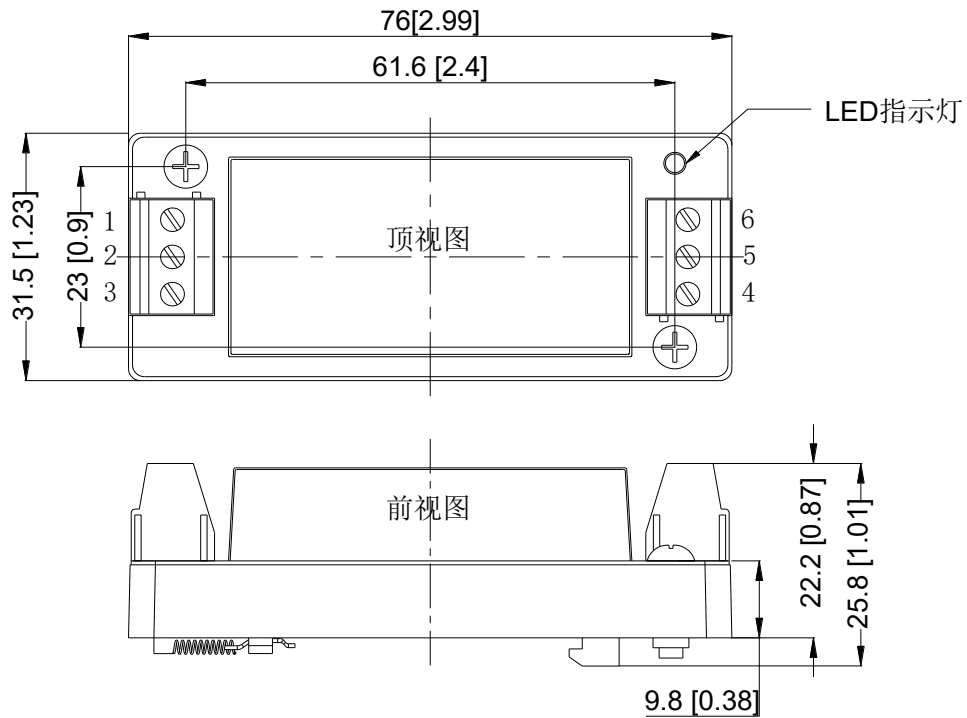


接线线径: 24-12AWG

紧固力矩: Max 0.4N.m

| 管脚 | 1   | 2    | 3    | 4   | 5   | 6    |
|----|-----|------|------|-----|-----|------|
| 单路 | CNT | -Vin | +Vin | +Vo | -Vo | TRIM |
| 双路 | CNT | -Vin | +Vin | +Vo | COM | -Vo  |

尾缀为 D2 的机械图



接线线径: 24-12AWG

紧固力矩: Max 0.4N.m

| 管脚 | 1   | 2    | 3    | 4   | 5   | 6    |
|----|-----|------|------|-----|-----|------|
| 单路 | CNT | -Vin | +Vin | +Vo | -Vo | TRIM |
| 双路 | CNT | -Vin | +Vin | +Vo | COM | -Vo  |

注:安装定位尺寸公差按 GB/T1804-2000 F 级标准、外型尺寸公差按 GB/T1804-2000 C 级标准。