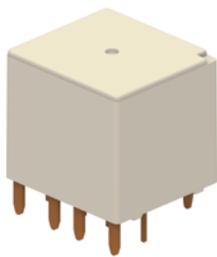


# MAC

## 汽车应用

### Automotive Applications

- 25A 电机负载
- 超小型
- 转换型触点形式
- 单, 双继电器可选
- H 级 (180°C) 线圈绝缘等级
- 25A motor locked load
- Extremely small relay
- Change-over contact version
- Single and Dual-bank relays optional
- Coil wire insulation class H (180°C)



MAC - S - 2 - 12 - C - P

| 产品型号<br>Model | 产品结构<br>Structure | 触点组数<br>Number of Poles                               | 线圈电压<br>Coil Voltage | 触点形式<br>Contact Form    | 线圈功耗<br>Coil Power  |
|---------------|-------------------|---|----------------------|-------------------------|---|
|               | S: 塑封型 Wash tight | 1: 单继电器<br>Single Relay<br>2: 双继电器<br>Dual-bank Relay | 12: 12VDC            | C: 转换 NO/NC<br>A: 常开 NO | P: 低动作电压型<br>Low pick-up voltage<br>无: 标准型<br>Nil: Standard |

### 触点参数 CONTACT PARAMETERS

|                                |   |
|--------------------------------|---|
| 触点形式 Contact Form              | 1a、1c: 单继电器 Single Relay<br>2a、2c: 双继电器 Dual-bank Relay |
| 触点材料 Contact Material          | 银合金 Silver Alloy  |
| 接触压降 Voltage Drop( 初始 Initial) | 典型值 Typ.50mV, 最大值 Max.250mV                             |
| 最大切换电流 Max.Switching Current   | 25A   |
| 电气寿命 Electrical Life           | 见附表 1 See attached list 1                               |
| 机械寿命 Mechanical Life           | 1×10 <sup>6</sup> 次 OPS                                 |

### 性能参数 CHARACTERISTICS

|                            |   |
|----------------------------|---|
| 绝缘电阻 Insulation Resistance | 100MΩ(500VDC)   |
| 介质耐压 Dielectric Strength   | 触点与线圈间 Between Coil , Contacts: 500VAC 1min<br>断开触点间 Between Open Contacts: 500VAC 1min |
| 动作时间 Operate Time          | ≤ 10ms  |
| 释放时间 Release Time          | ≤ 10ms  |
| 环境温度 Ambient Temperature   | -40°C ~+125°C   |
| 振动 Vibration               | 10Hz~500Hz 49m/s <sup>2</sup>   |
| 冲击 Shock                   | 98m/s <sup>2</sup>  |
| 引出端形式 Termination          | 印刷电路板引出端 PCB  |
| 封装形式 Construction          | 塑封型 Wash tight  |
| 重量 Unit Weight             | 1A、1C: 约 Approx 4g<br>2A、2C: 约 Approx 8g  |

## 线圈规格表 COIL DATA(23°C)

| 类型 Type                       | 额定电压<br>Rated Voltage<br>VDC | 动作电压<br>Operate Voltage<br>VDC | 释放电压<br>Release Voltage<br>VDC | 线圈电阻<br>Coil Resistance<br>$\Omega \pm 10\%$ | 线圈功率<br>Coil Power<br>W | 允许最大线圈电压 (1)<br>Max.Allowable Overdrive Voltage<br>VDC |      |
|-------------------------------|------------------------------|--------------------------------|--------------------------------|--|-------------------------|--|------|
|                               |                              |                                |                                |  |                         | 20°C   | 85°C |
| 标准型<br>Standard               | 12                           | $\leq 7.2$                     | $\geq 1$                       | 225  | 约 Approx.0.64           | 20   | 16   |
| 低动作电压型<br>Low pick-up voltage | 12                           | $\leq 6.5$                     | $\geq 1$                       | 180  | 约 Approx.0.8            | 18   | 14   |

注意：(1) 触点无负载电流，线圈电阻为最小值情况下，继电器线圈允许施加的最大连续工作电压。

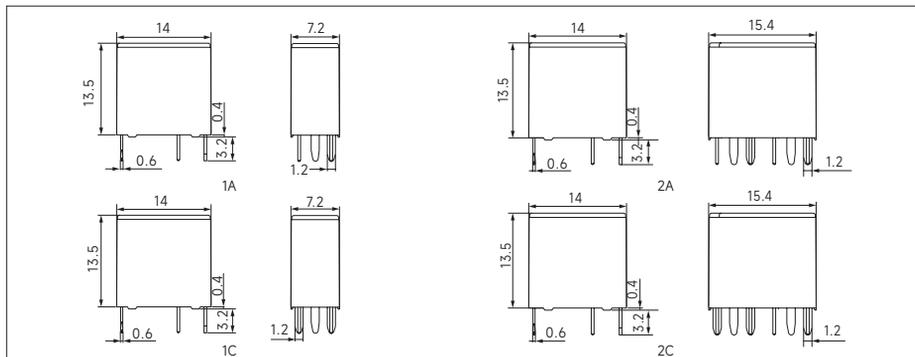
REMARK:(1)Max.Allowable overdrive voltage is stated with no load applied minimum coil resistance.

## 附表 1 ATTACHED LIST 1

| 负载电压<br>Load Voltage | 负载类型<br>Load Type                       | 负载电流 A<br>Load Current |       | 通断比 s<br>On/Off Ratio |        | 电耐久性<br>(次 OPS)<br>Electrical<br>Endurance |                 |
|----------------------|---|------------------------|-------|-----------------------|--------|--|-----------------|
|                      |   | 1C, 2C                 |       | 接通 On                 | 断开 Off |  |                 |
|                      |   | 常开 NO                  | 常闭 NC |                       |        |  |                 |
| 14VDC                | 电机负载<br>Motor                           | 接通<br>Make             | 25    | --                    | 0.5    | 9.5  | $1 \times 10^5$ |
|                      |   | 断开<br>Break            | 25    | --                    |        |  |                 |
|                      | 模拟车窗升降<br>Simulate Window<br>Operation  | 接通<br>Make             | 25    | --                    | 0.2    | 4  | $1 \times 10^5$ |
|                      |   | 稳态<br>Stable           | 10    | --                    | 2.3    |  |                 |
|                      |   | 断开<br>Break            | 25    | --                    | 0.5    |  |                 |
|                      | 模拟马达自由运转<br>Simulate<br>Motor Operation | 接通<br>Make             | 27    | -                     | 0.02   | 1.8  | $1 \times 10^5$ |
|                      |   | 稳态<br>Stable           | 17    | -                     | 0.03   |  |                 |
|                      |   | 断开<br>Break            | 8     | -                     | 0.15   |  |                 |

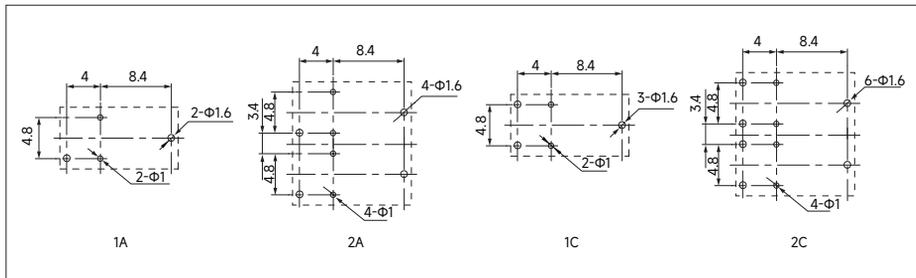
## 外形尺寸 PROFILE DIMENSION

单位 Unit: mm



## 安装孔尺寸 (底视图) PCB LAYOUT (BOTTOM VIEW)

单位 Unit: mm

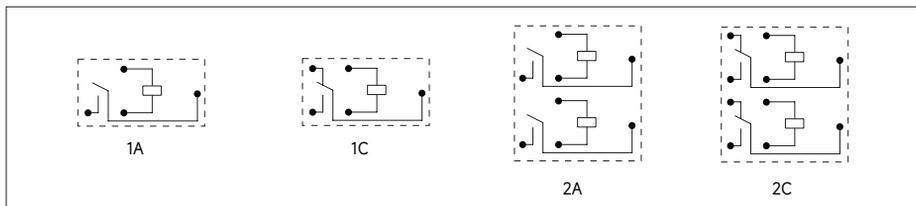


备注: (1) 产品部分外形尺寸未注尺寸公差, 当外形尺寸 $\leq 1\text{mm}$ , 公差为 $\pm 0.2\text{mm}$ ;  
当外形尺寸在 $1\text{-}5\text{mm}$ 之间时, 公差为 $\pm 0.3\text{mm}$ ; 当外形尺寸 $> 5\text{mm}$ 时, 公差为 $\pm 0.4\text{mm}$ ;  
(2) 安装孔尺寸中未注尺寸公差的均为 $\pm 0.1\text{mm}$ 。

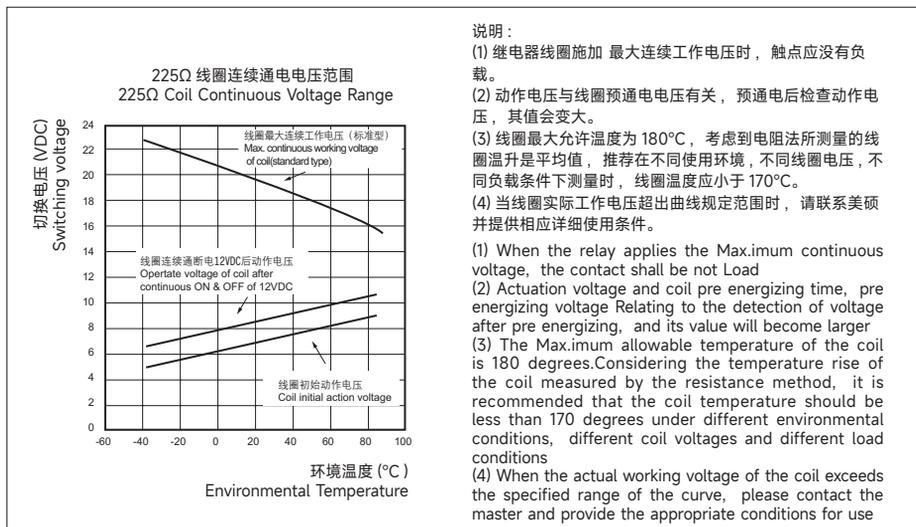
### REMARK:

- (1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ ;  
(2) The tolerance without indicating for PCB layout is always  $\pm 0.1\text{mm}$ .

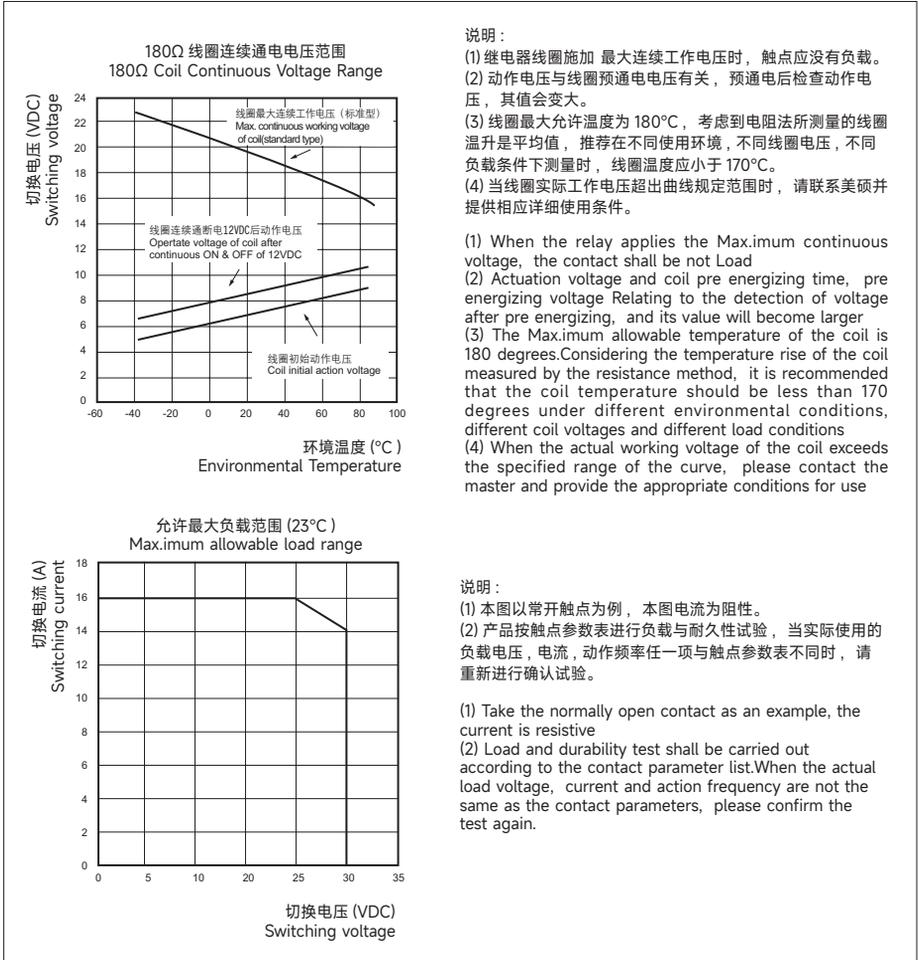
## 接线图 (底视图) WIRING DIAGRAM (BOTTOM VIEW)



## 性能曲线图 PERFORMANCE CURVE



## 性能曲线图 PERFORMANCE CURVE



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继电器综合样本

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