



RELAY

汽车继电器/Automotive Relay

<p>CTQR4系列 CTQR4 SERIES</p>	 单继电器 /Single	 双继电器 /Twin	<p>特性 Features</p> <ul style="list-style-type: none"> ● 超小型汽车继电器 Subminiature automotive relay ● 重量仅 4 克 (单继电器) The weight is only 4g for single relay ● 单、双继电器可供选择 Single and double relays are available ● 可提供不封透气孔的回流焊型 (CTQR4-T) The reflow soldering version(open vent hole) available (CTQR4-T) ● 符合 ROHS、ELV 指令 ROHS and ELV Compliant
<p>典型应用 /Typical Applications 中央门锁、雨刮控制、仪表控制、自动门窗、防盗系统、后窗和座椅加热控制、照明灯 / 闪光灯 / 指示灯控制 Central door lock, Anti-theft lock, Power doors & windows, Lighting, flashlight & indicator lamp control, Wiper control Instrument control, Resr window and seat heating control</p>			

性能参数/GENERAL DATA

触点形式 Contact Form	Single (1C)、Twin (2C) Single(1A)、Twin (2A)	绝缘电阻 Insulation Resistance	100MΩ.500VDC
接触压降 ⁽¹⁾ Contact pressure drop	典型值: 50mV(10A 下测量) Typ: 50mV (at 10A) 最大值: 250mV(10A 下测量) Typ: 250mV (at 10A)	介质耐压 ⁽⁴⁾ Dielectric Strength	断开触点间 Between Open contacts 500VAC 1min
			线圈与触点间 Between Coil and contacts 500VAC 1min
最大连续电流 ⁽²⁾ Max.continuity Current	常开触点NO: 30A (23°C, 1h) 常闭触点NC: 25A (23°C, 1h)	吸合时间 Operate time	典型值: 4ms(额定电压下测量) Typ: 4ms (at nomi.vol.) 最大值: 10ms(额定电压下测量) Max: 10ms (at nomi.vol.)
最大切换电流 ⁽³⁾ Max.Switching Current	30A	释放时间 ⁽⁵⁾ Release time	典型值: 2ms 最 大值: 10ms Max: 10ms
最大切换电压 Max.Switching Voltage	16VDC	振动 ⁽⁶⁾ Vibration	10~500HZ,58.8ms ²
最小负载 Minimum load	1A 6VDC	冲击 ⁽⁶⁾ Shock	294ms ²
机械寿命 Mechanical	1×10 ⁷ 次 300次/分钟 1×10 ⁷ times (300ops/min)	湿度 Humidity	35%~95%RH,+40°C
电气寿命 Electrical Life	详见触点参数表 See (contact data)	温度范围 Temperature range	-40°C~+105°C
引出端形式 Termination	印制电路板引出端 PCB	重量 Weight	单继电器:约4.0g Single relay:Approx 4.0g 双继电器:约8.0g Twin relay:Approx 4.0g
封装形式 Encapsulation form	塑封型 Plastic Sealed Type 防焊剂型 Flux Model		

备注: (1)初始值,也可表述为接触电阻最大值为100mΩ(1A 6VDC);

(2)针对常开触点,在线圈施加100%额定电压时测量所得,针对常闭触点,在线圈不施加电压时测量所得;

(3)23°C,常开触点,在通断比1s:5s的13.5VDC阻性电路中测量所得(动作次数100次);

(4)1min,漏电流小于1mA;

(5)由额定电压阶跃到0VDC,且没有线圈抑制电路时测量;

(6)在激励时,常开触点断开时间小于100μs,在不激励时,常闭触点断开时间小于100μs,同时常开触点不能闭合;

(7)该产品为环保产品,焊接时请选用无铅焊料,推荐焊接温度及时间为(250±3)°C,(5±0.3)s.

Note:(1)Initial value ,Equivalent to the max.initial contact resistance is100mΩ (at 1A 6VDC);

(2) For NO contacts,measured when applying 100% rated voltage on coil.

For NC contacts,measured when applying zero voltage on coil.

(3) At 23°C,13.5VDC,on & off rate at 1s:5s,resistive load(100cycles) ;

(4)1 min, leakage current less than 1 mA;

(5)Measure when the rated voltage step to 0VDC and there is no coil suppression circuit.

(6) When the excitation is applied, the breaking time of the normally open contact is less than 100μs, and when the excitation is not applied, the breaking time of the normally closed contact is less than 100μs, and the normally open contact can not be closed.

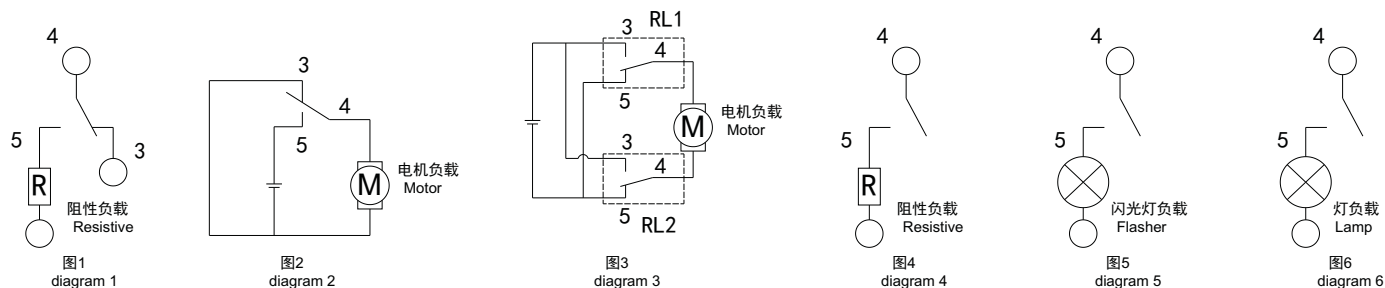
(7) This product is environmentally friendly. Lead-free solder should be selected when welding. The recommended welding temperature and time are (250±3)°C, (5± 0.3) s.

触点参数/CONTACT DATA

触点负载电压 Load Voltage	负载类型 Load type		触点负载电流 A Load current A		通断比 On/off ratio		电耐久性 (次) Electrical endurance ops	触点材料 Contact material	触点接线图 ⁽⁴⁾ Load wiring diagram
			1C,2C		接通 On s	断开 Off s			
			常开 NO	常闭 NC					
13.5VDC	阻性 Resistive	接通 Make	20	—	1	5	3×10 ⁵	AgSnO ₂	见图1
		断开 Break	20	—					
	雨刷电机 Wiper L=1.0mH	接通 Make	25 ⁽¹⁾	—	0.2	2	3×10 ⁵	AgSnO ₂	见图2
		断开 Break	5	—					
	电机锁定 Motor locked L=0.77mH	接通 Make	20	—	0.02	2	1×10 ⁵	AgSnO ₂	见图3
		断开 Break	20	—					
	阻性 Resistive	接通 Make	20		1	5	3×10 ⁵	AgSnO ₂	见图4
		断开 Break	20						
	闪光灯 ⁽³⁾ Flasher	接通 Make	3×21W		0.365	0.365	3×10 ⁵	特殊 Special AgSnO ₂	见图5
		断开 Break							
	灯 Lamp	接通 Make	40		2	2	1×10 ⁵	AgSnO ₂	见图6
		断开 Break	10						

备注：(1)电机初始峰值冲击电流；
 (2)初始冷态灯丝第一次尖峰冲击；
 (3)当用于闪光灯负载时，须按下图极性要求接线，并须采用特殊AgSnO₂触点，订货标记中客户特性号为（170）；
 (4)触点接线图如下所示（当使用特殊 AgSnO₂触点的继电器时，请注意接线的正负极性要求）。

Notice:(1)Corresponds to the peak inrush current on initial actuation (motor).
 (2)Corresponds to the peak inrush current on initial actuation (cold filament).
 (3)When it is utilized in flasher,a special AgSnO₂ contact material should be used and the cusyomer special code should be (170) as a suffix.Please connect by the polarity according to the diagrams below .
 (4)The load wiring diagrams are listed below(When using relays with special AgSnO₂ contacts, pay attention to the positive and negative polarity requirements of the wiring).



(5)当触点负载电压为24VDC或更高，又或使用负载条件与本表不相符时，请将相应详细使用条件提供给云尖以获取更多的支持。
 (5)When the load voltage is at 24VDC or higher,or the applications are different from the table above,please submit the detailed application conditions to Yunjian to get more support.

线圈参数/COIL DATA

23°C

额定电压 ⁽¹⁾ Nominal voltage VDC	动作电压 Pick-up voltage VDC	释放电压 Drop-out voltage VDC	线圈电阻 Coil resistance ×(1±10%)Ω	继电器功耗 Power consumption W	允许最大线圈电压 ⁽²⁾ VDC	
					23°C	85°C
6	≤3.5	≥0.8	63	0.55	13.2	7.8
10	≤5.7	≥1.25	181	0.55	22	13
12	≤6.9	≥1.5	254	0.55	26	16
12	≤6.9	≥1.5	181	0.8	22	13

备注：(1)如需其他额定电压规格，可特殊订货；

(2)触点无负载电流情况下，继电器线圈允许施加的最大连续工作电压。

Note: (1)When requiring some other nominal voltage, special order allowed.

(2)Max. allowable overdrive voltage is stated with no load applied.

命名规则/OPDERING INFORMATION

CTQR4 -P -S -D12V -C (xxx)

客户特性号：
Customer characteristic No:

触点转换形式：
Contact Forms:

1A- 一组常开	1 Form A
2A- 两组常开	2 Form A
1C- 一组转换	1 Form C
2C- 两组转换	2 Form C

额定线圈电压 (VDC) : 12VDC
Rated Coil Voltage (VDC) : 12VDC

封装形式：
Packing Forms:

S-塑封型(HFKC)	无：防焊剂型 (HFKC-T)
S-Plastic Sealed (HFKC)	Nil: Flux proofed(HFKC-T)

额定线圈功率：
Rated Coil Power:

P: 0.8W (仅适用于12VDC电压规格)	无: 0.55W
P: 0.8W(Only for 12VDC type)	Nil: 0.55W

型号：
Model:

CTQR4 (普通型)	CTQR4-T (回流焊型/耐高温型)
CTQR4(Reflow soldering version)	CTQR4-T(High-temperature version)

备注：(1)CTQR4-T型的封装方式仅有防焊剂型一种，其透气孔在外壳顶部；

(2)当继电器装入PCB板后，如需进行整体清洗，请与我司联系确认，以便提供合适的产品。

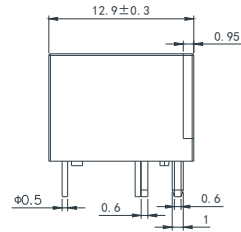
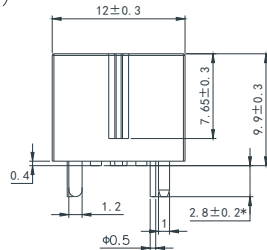
Notes: (1)The structure of CTQR4-T is only flux proof, the open vent hole is on the top of the relay .

(2>Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.

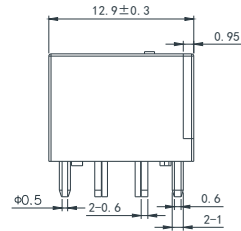
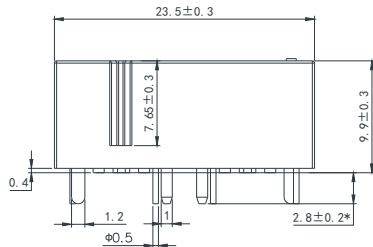
外形图, 接线图, 安装孔尺寸(单位:mm) / OUTLINE DIMENSIONS, WIRING DIAGRAM, PCB LAYOUT(UNIT:mm)

外形图/Outline Dimensions

单继电器
(Single version)



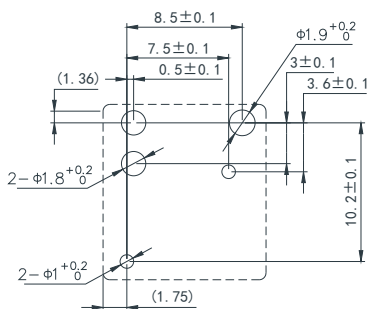
双继电器
(Twin version)



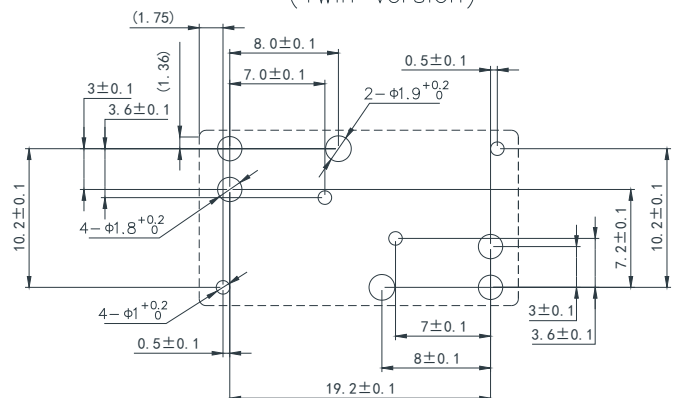
备注: *该尺寸不包括锡尖, 沾锡后锡尖长度不超过1mm.
Remark: The additional tin top is max. 1mm.

安装孔尺寸/PCB Layout
(底视图) / (Bottom View)

单继电器
(Single version)



双继电器
(Twin version)



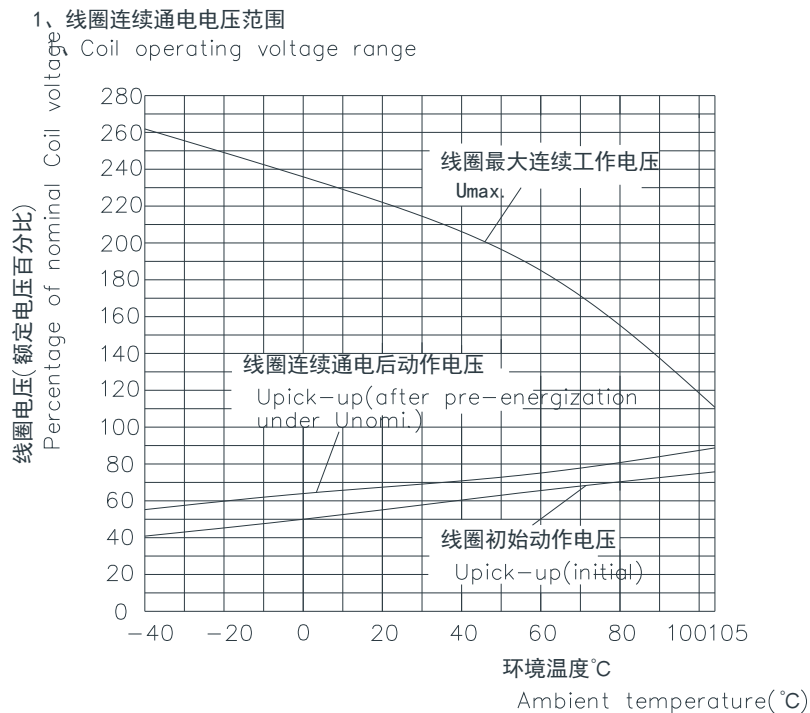
RELAY

外形图,接线图,安装孔尺寸(单位:mm) / OUTLINE DIMENSIONS, WIRING DIAGRAM, PCB LAYOUT(UNIT:mm)

接线图/Wiring Diagram
(底视图) / (Bottom View)



性能曲线图/CHARACTERISTIC CURVES



说明:

- (1) 继电器施加最大连续工作电压时, 触点应没有负载。
- (2) 动作电压与线圈预通电时间、预通电电压有关, 在预通电后检测动作电压, 其值会变大。
- (3) 线圈最大允许温度为180°C, 考虑到电阻法所测量的线圈温升是平均值, 推荐在不同使用环境、不同线圈电压、不同负载条件下测量时, 线圈温度应小于170°C。
- (4) 当线圈实际工作电压超出曲线规定范围时, 请联系云尖并提供相应详细使用条件。

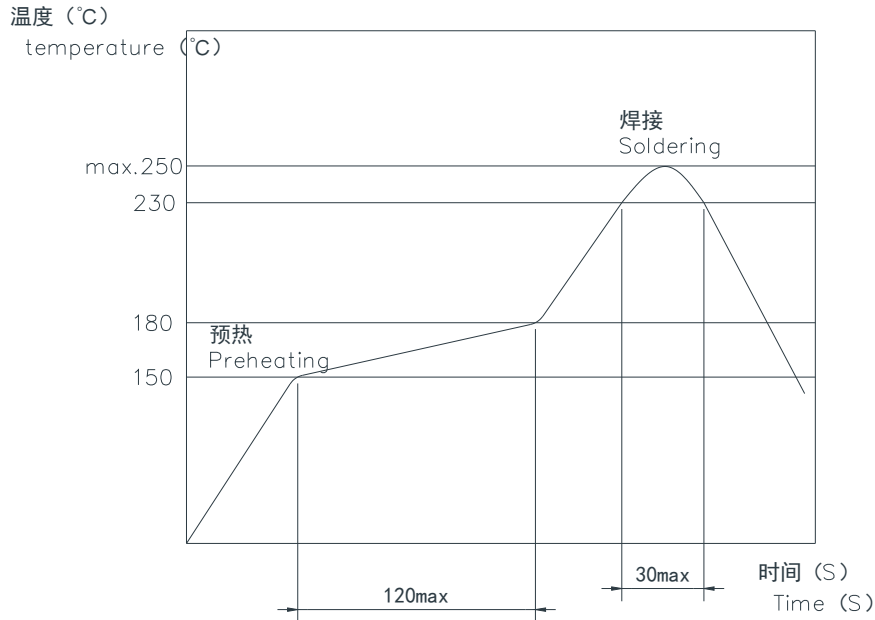
instruction:

- (1) There should be no contact load applied when maximum continuous operation voltage is applied on coil.
- (2) The operating voltage is connected with coil pre-energized time and voltage. After pre-energized, the operating voltage will increase.
- (3) The maximum allowable coil temperature is 180°C. For the coil temperature rise which is measured by resistance is average value, we recommend the coil temperature should be below 170°C under the different load etc.
- (4) If the actual operating coil voltage is out of the specified range, please contact Yunjian for further details.

性能曲线图/CHARACTERISTIC CURVES

2、回流焊, PCB板面温度 (推荐焊接温度, 只适用于回流焊型产品)

2、Reflow soldering, temperature on PCB board.
(Recommended soldering temperature, only for reflow soldering version)



声明:

本产品规格书仅供客户使用时参考, 若有更改, 恕不另行通知。
 对本公司而言, 不可能评定继电器在每一个具体领域的所有性能参数要求, 因而客户应根据具体的使用条件选择与之相配的产品, 若有疑问, 请与云尖联系以便获取更多的技术支持, 但选型责任仅由客户负责。

Disclaimer: The specification is for reference only. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact "Cloutip" for the technical service. However, it is the use's responsibility to determine which product should be used only.