



美硕 MEISHUO

MAC 汽车继电器 AUTOMOTIVE RELAY

	特性 FEATURES
25A 电机负载	25A motor locked load
超小型	Extremely small relay
转换型触点形式	Change-over contact version
H 级 (180°C) 线圈绝缘等级	Coil wire insulation class H (180°C)
外形尺寸: 14×15.4×13.7mm	Outline dimensions: 14×15.4×13.7mm

触点参数 CONTACT PARAMETERS

触点形式 Contact Arrangement	1C: 单继电器 Single Relay 2C: 双继电器 Twin 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 (at 10A)
最大切换电流 Max. Switching Current	30A
最大切换电压 Max. Switching Voltage	16VDC
电气寿命 Electrical Life	见附表 1 See schedule 1
机械寿命 Mechanical Life	1×10 ⁶ 次 OPS

附表 1 SCHEDULE 1

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



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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 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~+85°C
振动 Vibration Resistance	10Hz~500Hz 49m/s ²
冲击 Shock Resistance	98m/s ²
引出端方式 Terminal Form	印刷电路板引出端 PCB
封装形式 Construction	塑封型 Sealed
重量 Unit Weight	约 Approx.: 8g

线圈规格表 COIL DATA(23°C)

	额定电压 Rated Voltage VDC	动作电压 Operate Voltage VDC	释放电压 Release Voltage VDC	线圈电阻 Coil Resistance Ω±10%	线圈功率 Coil Power W	允许最大线圈电压 ¹⁾ Max Allowable Overdrive Voltage VDC	
						23°C	85°C
标准型 Standard	12	≤7.2	≥1.0	225	约 Approx. 0.64	20	16
低动作电压型 Low pick-up voltage	12	≤6.5	≥1.0	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。

Max. Allowable overdrive voltage is stated with no load applied minim

订货标记示例 ORDERING INFORMATION

产品型号 Model:	MAC	-S	-1	12	-C	-P
产品结构 Structure:	S: 塑封型 Sealed					
触点组数 Contact group:	1: 单继电器 Single Relay 2: 双继电器 Twin Relay					
线圈电压 Coil voltage:	12:12VDC					
触点形式 Contact form:	C: 转换 NO/NC					
线圈功率 Coil power	P: 低动作电压型 Low pick-up voltage 无 nil: 标准型 Standard					

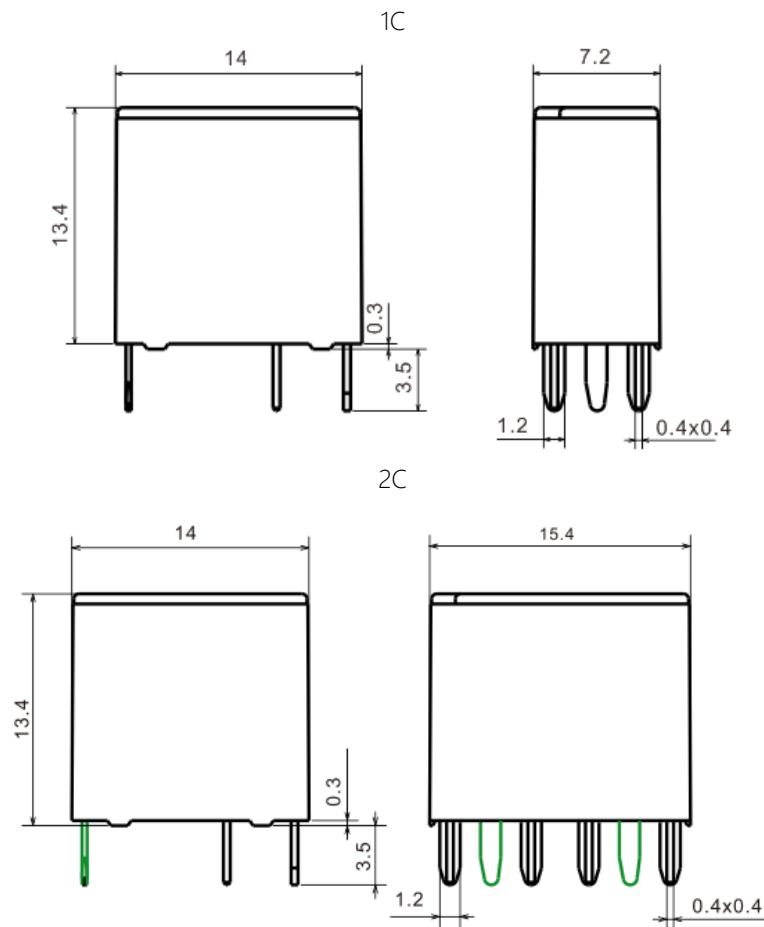


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外形尺寸、接线图 OUTLINE DIMENSIONS AND WIRING DIAGRAM (单位 Unit: mm)

外形尺寸 Outline Dimensions



备注：产品部分外形尺寸未注尺寸公差，当外形尺寸≤1mm，公差为±0.2mm；当外形尺寸在1~5mm之间时，公差为±0.3mm；当外形尺寸>5mm时，公差为±0.4mm；

REMARK:

In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm;

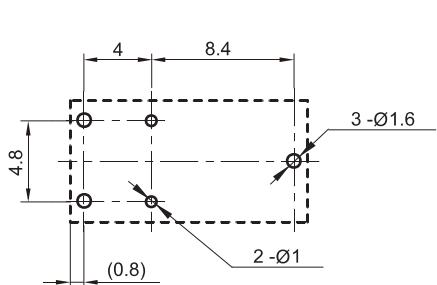


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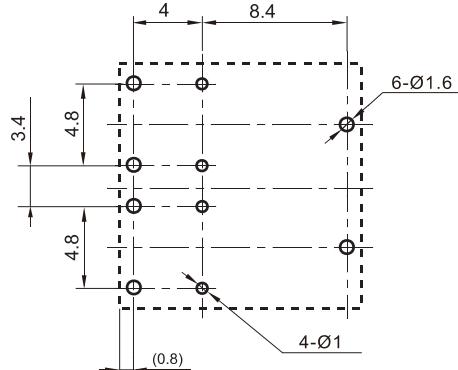
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安装孔尺寸图 PCB Layout

1C

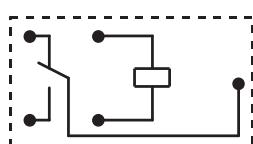


2C

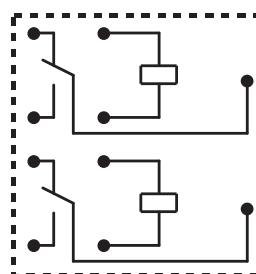


接线图 Wiring Diagram

1C



2C



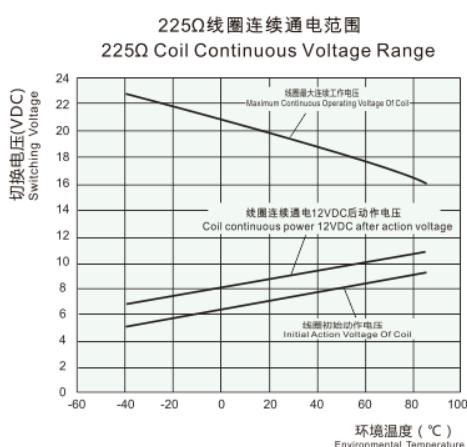
性能曲线图 PERFORMANCE CURVE

1. 线圈连续通电电压范围

Coil Continuous Voltage Range

说明:

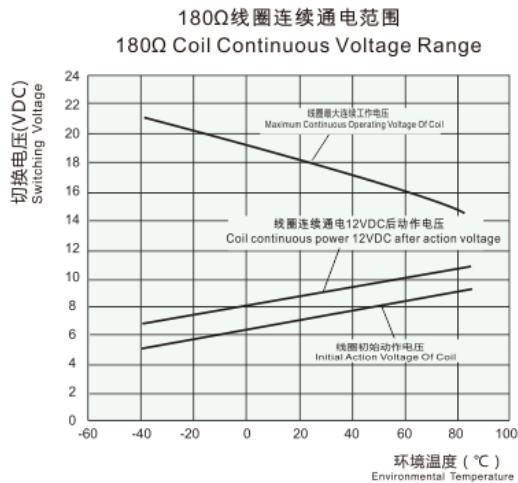
- (1) 继电器施加最大连续电压时,触点应没有负载。
 - (2) 动作电压与线圈预通电时间,预推电电压有关,在预通电后检测电压,其值会变大。
 - (3) 线圈最大允许温度为180°C,考虑到电阻法所测量的线圈温升是平均值,推荐在不同使用环境不同线圈电压,不同负载条件下测量时,线圈温度应小于170°C
 - (4) 当线圈实际工作电压超出曲线规定范围时,请联系美硕并提供相应使用条件
-
- 1) When the relay applies the maximum continuous voltage, the contact shall be not Load
 - 2) Actuation voltage and coil pre energizing time, pre energizing voltage Relating to the detection of voltage after pre energizing, and its value will become larger
 - 3) The maximum allowable temperature of the coil is 180 degrees. Considering the temperature rise of the coil measured by the resistance method, it is recommended that the coil temperature should be less than 170 degrees under different environmental conditions, different coil voltages and different load conditions
 - 4) When the actual working voltage of the coil exceeds the specified range of the curve, please contact the master and provide the appropriate conditions for use





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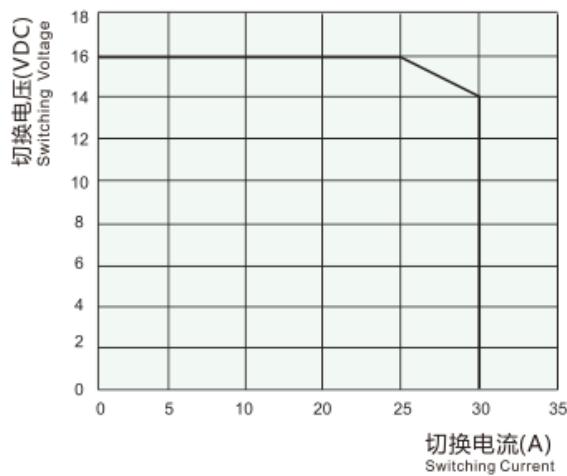
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2. 允许最大负载范围(23°C) Maximum allowable load range



说明：

- (1)本图以常开触点为例，本图电流为阻性。
- (2)产品按触点参数表进行负载与耐久性试验
当实际使用的负载电压、电流、动作频率任一项与触点参数不同时，请重新进行确认试验。

- 1) Take the normally open contact as an example, the current is resistive
- 2) Load and durability test shall be carried out according to the contact parameter list. When the actual load voltage, current and action frequency are not the same as the contact parameters, please confirm the test again.

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。

对美硕而言，不可能评定继电器在每个具体应用领域的所有性能参数要求，因而客户应该根据具体的使用条件选择与之相匹配的产品，若有疑问，请与美硕联系获取更多的技术支持。但产品选型责任仅由客户负责。

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This product specification for client's reference, if any change without notice.

For Meishuo, can not require evaluation of relays in each specific application of all the performance parameters, so customers should be selected according to the matching conditions for the use of specific products, if you have any questions, please contact us and get more technical support. However, product selection responsibility only by the customer.

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