Automotive Relays





Coil Data

Nominal Voltage : 12 V dc

Coil Resistance : Refer to coil data chart
Operate Voltage : Refer to coil data chart
Release Voltage : Refer to coil data chart

Coil Power : 1,100 mW

Contact Data

Contact Form : U-2 form U
Contact Material : Ag Alloy
Contact Rating : Refer to table 1
Maximum Switching Voltage : 75 V dc
Maximum Switching Current : 20 A
Maximum Switching Power : 280 W

Maximum Load Current : 14V dc load voltage (Table 1)

Load	U
Contact Rating Current	2 × 10 A
Maximum Make Current	2 × 40 A
Maximum Break Current	2 × 20 A

Contact Resistance : \leq 100 m Ω (6 V dc 1 A)

Life

Electrical : 100,000 operations
Mechanical : 10,000,000 operations

General Data

Minimum Insulation Resistance : 100 M Ω 500 V dc

Dielectric Strength : 500 V ac, 1 min between open contacts

: 1,000 V ac, 1 min between coil and contacts

Maximum Operate Time : 3 ms

Maximum Release Time : 15 ms

Operate Temperature : -40 to +85°C





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General Data

Shock Resistance

Endurance : $1,000 \text{ m/s}^2$ Misoperation : 100 m/s^2

Vibration Resistance

Endurance : 10-55 Hz, double amplitude 1.5 mm Misoperation : 10-55 Hz, double amplitude 1.5 mm

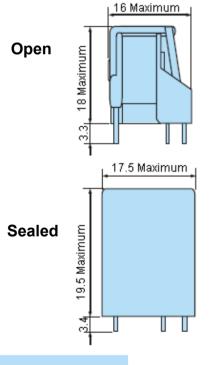
Weight : Approximately 12 g

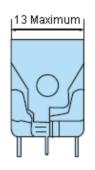
: Approximately 8 g (open)

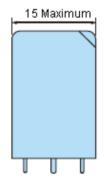
Coil Data Chart 20°C

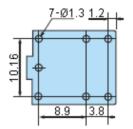
Nominal Voltage	Coil Resistance	Operate Voltage	Release Voltage	Coil Power
V dc	Ω ±10%	≤ V dc	≥ V dc	mW
12	130.9	8.4	1.2	

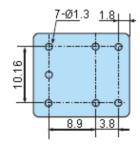
Dimensions



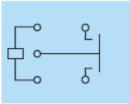








Dimensions : Millimetres



Form U

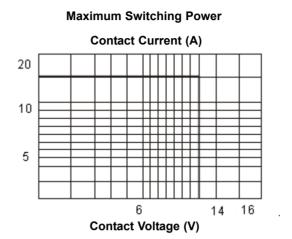


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Characteristic Chart Data

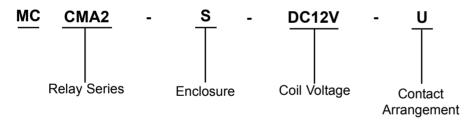
Temperature Rise Temperature Rise (°C) 110 10 A 20 °C 100 80 10 A 85 °C 60 40 20 0 14 16 Coil Applied Voltage (V)



Part Number Table

Description	Part Number	
Relay, Auto, Double Make 12 V dc	MCCMA2-S-DC12V-U	

Part Number Explanation:



Enclosure : S = Plastic Sealed Type

Contact Arrangement : U = U-2 Form U

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