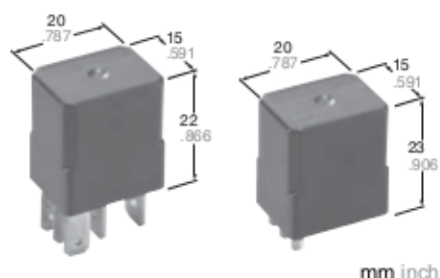



Products with diode inside  are discontinued in 2014.

Panasonic
ideas for life


Automotive micro-ISO relay

CM RELAYS



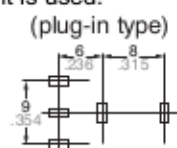
 Products to be discontinued.

FEATURES

- **Micro-ISO type terminals**
- **Small size:**
20 mm(L)×15 mm(W)×22 mm(H)
.787 inch(L)×.591 inch(L)×.866 inch(H)
- **Wide line-up**
PC board type, plug-in type and resistor and  diode inside type. 24V DC type is also available.
- **Compact and high-capacity 35A load switching**
N.O.: 35A 14V DC, N.C.: 20A 14V DC (Sealed type)
Min. 5×10^4
N.O.: 35A 14V DC, N.C.: 20A 14V DC (Flux-resistant type)
Min. 10^5 *12V DC type

- **Uses international standard ISO terminal arrangement.**

The ISO international standard terminal arrangement is used.



TYPICAL APPLICATIONS

- Fan motor
- Heater
- Head lamp
- Air Compressor
- EPS
- ABS
- Blower fan
- Defogger, etc.

SPECIFICATIONS

Contact

Type	12 V coil voltage	24 V coil voltage
Arrangement	1 Form A, 1 Form C	
Contact material	Ag alloy (Cadmium free)	
Initial contact resistance (Initial) (By voltage drop 6 V DC 1 A)	Typ. 2 mΩ	
Contact voltage drop	Max. N.O.: 0.5 V (at 35 A 14 V DC) Max. N.C.: 0.3 V (at 20 A 14 V DC)	Max. N.O.: 0.3 V (at 15 A 28 V DC) Max. N.C.: 0.2 V (at 8 A 28 V DC)
Rating (resistive load)	Nominal switching capacity	N.O.: 35 A 14 V DC N.C.: 20 A 14 V DC
	Max. carrying current	N.O.: 20 A (14 V DC, at 85°C 185°F) N.C.: 10 A (14 V DC, at 85°C 185°F)
	Min. switching capacity ^{#1}	1 A 12 V DC
Expected life	Mechanical (at 120 cpm)	Min. 10^6
	Electrical (at rated load)	Flux-resistant type: Min. 10^{5*1} Sealed type: Min. 5×10^4

Coil

Nominal operating power	1.5 W 1.7 W (with resistor inside type)	1.8 W 2.0 W (with resistor inside type)
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#1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

Characteristics

Type	24V coil type	12V coil type
Max. operating speed (at nominal switching capacity)	15 cpm	
Initial insulation resistance* ²	Min. 20 MΩ (at 500 V DC)	
Initial breakdown voltage* ³	Between open contacts	500 Vrms for 1 min.
	Between contacts and coil	500 Vrms for 1 min.
Operate time* ⁴ (at nominal voltage) (at 20°C 85°F)	Max. 10 ms (initial)	
Release time* ⁴ (at nominal voltage) (at 20°C 85°F)	Max. 10 ms Max. 15 ms (with diode) (initial)	
Shock resistance	Functional* ⁵	Min. 200 m/s ² (20G)
	Destructive* ⁶	Min. 1,000m/s ² (100G)
Vibration resistance	Functional	10 Hz to 500 Hz, Min. 44.1 m/s ² (4.5 G)
	Destructive* ⁷	10 Hz to 2,000 Hz, Min. 44.1 m/s ² (4.5 G)
Conditions for operation, transport and storage* ⁸ (Not freezing and condensing at low temperature)	Ambient temp.	-40°C to + 85°C -40°F to + 185°F
	Humidity	5% R.H. to 85% R.H.
Mass	Approx. 20g .71oz	

Remarks

- *¹ At nominal switching capacity, operating frequency: 2s ON, 2s OFF
- *² Measurement at same location as "Initial breakdown voltage" section.
- *³ Detection current: 10mA
- *⁴ Excluding contact bounce time.
- *⁵ Half-wave pulse of sine wave: 11 ms; detection time: 10 μs
- *⁶ Half-wave pulse of sine wave: 6 ms
- *⁷ Time of vibration for each direction; X, Y, Z direction: 4 hours



*⁸ Refer to "6. Usage, Storage and Transport Conditions" in **AMBIENT ENVIRONMENT** section in **Relay Technical Information**.
Please inquire if you will be using the relay in a high temperature atmosphere.