

| | |
|-----------|----------------------|
| Spec. No: | <u>参考(中)-04060</u> |
| Version: | <u>0</u> |
| P/N: | <u>2-1419144-6</u> |
| Date: | <u>Feb. 16. 2004</u> |

深圳王利电机有限公司
RELAY SHENZHEN ORIGINAL ELECTRIC CO., LTD.

RELAY SPECIFICATION SHEET

CUSTOMER NAME: BEIJING SANHE

1 TYPE MODEL

| | |
|-------------------------|----------------|
| 1.1 TYPE | MCL-112D2H |
| 1.2 OUTLINE | See attachment |
| 1.3 CONTACT ARRANGEMENT | SPDT(1c) |
| 1.4 CONTACT MATERIAL | Ag Alloy |

2 COIL RATING

| | |
|---------------------------------|--------------------------------------|
| 2.1 RATED VOLTAGE | 12VDC |
| 2.2 COIL RESISTANCE | 180 Ω (±10%) |
| 2.3 NORMINAL OPERATING POWER | about 0.8W |
| 2.4 MAX. ALLOWABLE COIL VOLTAGE | 150% of rated coil voltage (at 20°C) |

3 CONTACT SPECIFICATION

| | |
|---------------------------|--|
| 3.1 CONTACT RATING | NO: 15VDC 15A (Resistive) NC: 15VDC 10A (Resistive) |
| 3.2 RATED CONTACT CURRENT | NO: 15A |
| 3.3 MAX. CONTACT CAPACITY | NO 225W / NC 150W |
| 3.4 MIN. APPLICABLE LOAD | 5VDC 100mA (Reference value) |

4 PERFORMANCE

| | |
|-------------------------------------|---|
| 4.1 CONTACT RESISTANCE | 100m Ω Max. (at initial stage) voltage drop test method at 6VDC 1A |
| 4.2 OPERATE VOLTAGE | 7.2VDC Max. (at 20°C) |
| 4.3 RELEASE VOLTAGE | 1.2VDC Min. (at 20°C) |
| 4.4 OPERATE TIME | 10ms Max. at rated voltage. (Exclude bounce time) |
| 4.5 RELEASE TIME | 5ms Max. at rated voltage. (Exclude bounce time) |
| 4.6 LIFE | |
| (1) ELECTRICALLY resistive load: | NO 15A/NC 10A 15VDC 100,000ops Min. (10 ops./minute) at rated coil voltage with open ventilation hole. |
| (2) MECHANICALLY | 5,000,000ops. at no load.(300ops./minute) at rated coil voltage |

※On sealed relays with a vent provision, the vent should be opened after soldering and cleaning.
Listed ratings assume that the relays are vented.

| | | |
|------|---|---|
| 4.7 | DIELECTRIC STRENGTH (Leak current: 1mA) | |
| | (1) BETWEEN CONTACTS | 500VAC for 1 minute |
| | (2) BETWEEN COIL TO CONTACTS | 500VAC for 1 minute. |
| 4.8 | INSULATION RESISTANCE | Between contacts and coil to contact 100M Ω Min. at 500VDC |
| 4.9 | TEMPERATURE RISE | |
| | COIL | 70K. Max. by resistance method at Contact: NO 15A, Coil: rated voltage |
| 4.10 | VIBRATION | |
| | (1) ERROR OPERATION | No error operation than 1ms Max. when vibrate it from 3 directions for 5 minutes. (Amplitude 1.5mm. 10 – 55Hz) |
| | (2) ENDURANCE | No construction trouble when vibrate it from 3 directions for 2 hours. (Amplitude 1.5mm. 10 – 55Hz) |
| 4.11 | SHOCK | |
| | (1) ERROR OPERATION | No error operation by contact more than 1ms Max. when shocks it from 3 directions 3 times. (at Peak acceleration 100 m/s ² , Duration 11ms.) |
| | (2) ENDURANCE | No construction trouble when shocks is from 3 directions 3 times. (at Peak acceleration 1,000 m/s ² , Duration 6ms.) |
| 4.12 | TERMINAL STRENGTH | No construction and exterior trouble when push into any terminals by 5N for 10sec. |
| 4.13 | THERMAL PROOF | Not any trouble on construction and characteristic when leave in 85°C 240h after that, leave it in standard condition for 2 hours. |
| 4.14 | COLD PROOF | Not any trouble on construction and characteristic when leave in -40°C 240h after that, leave it in standard condition for 2 hours. |
| 4.15 | HUMIDITY PROOF | Insulation resistance 10M Ω Min. Not any troubles on construction and characteristic when leave in 40°C 90% 240h. After that, leave it in standard condition for 2 hours. |

※On *sealed* relays with a vent provision, the vent should be opened after soldering and cleaning.
Listed ratings assume that the relays are vented.

4.16 THERMAL SHOCK

Not any troubles on construction and characteristic when leave it in -40°C and 85°C temp. room for 1h each. That is one cycle. After 10 cycles has done, leave it on standard condition for 2 hours.

4.17 SOLDERING THERMAL

Not any troubles on construction and characteristic. When dipped into soldering bath 350°C 3sec. or 260°C 10sec.

4.18 SOLDERABILITY

Not any problems solder dipped at 260±5°C 5±0.5sec.

5 MARKING

5.1 CASE COLOR

Black

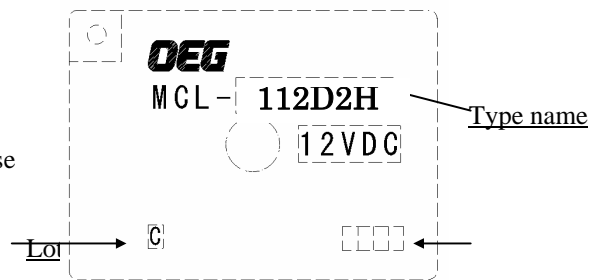
5.2 MARKING POSITION

top of case

5.3 INK COLOR

White

Made in China



6 STANDARDS TEST CONDITION

6.1 TEMPERATURE

20±5°C

6.2 HUMIDITY

60±10% RH

6.3 DIRECTON OF MEASUREMENT

Terminals down position is standard position.

7 OPERATING CONDITION

7.1 TEMPERATURE

-40 ~ 85°C

(However, no freeze and no dew condensation)

7.2 HUMIDITY

20 to 85% RH

7.3 MOUNTING DIRECTION

Terminal down position is standard position

8 STORAGE CONDITION

8.1 TEMPERATURE

-40 ~ 85°C

(However, no freeze and no dew condensation)

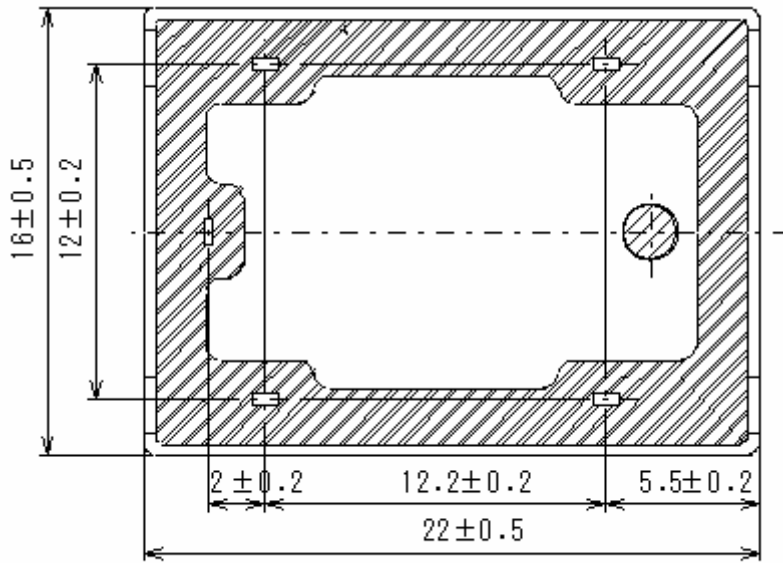
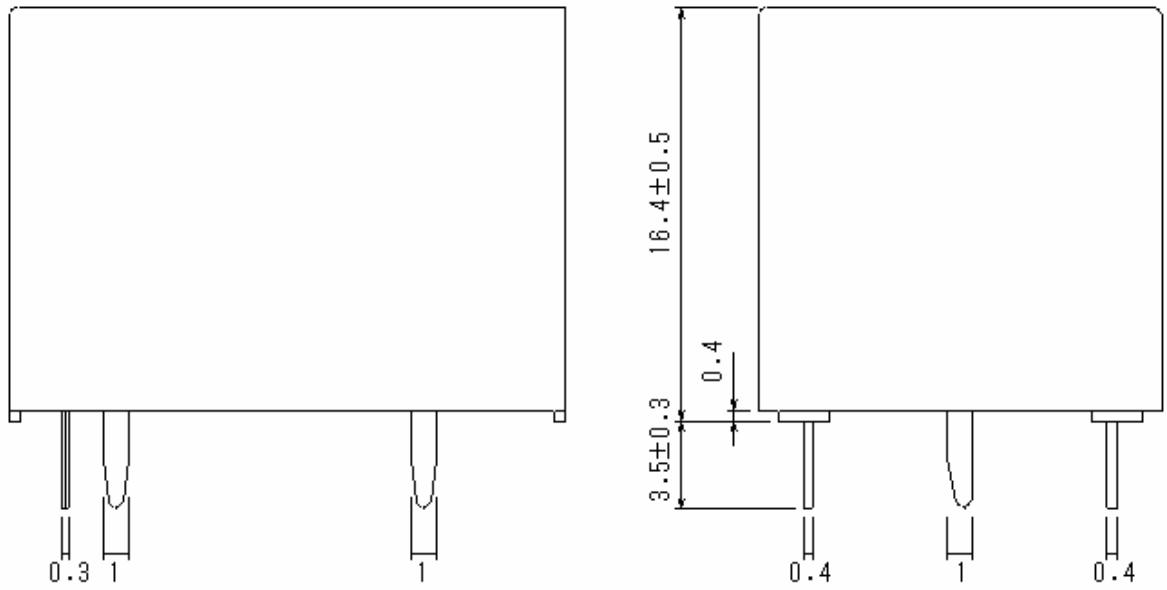
8.2 HUMIDITY

20 ~ 85% RH

8.3 ENVIRONMENT

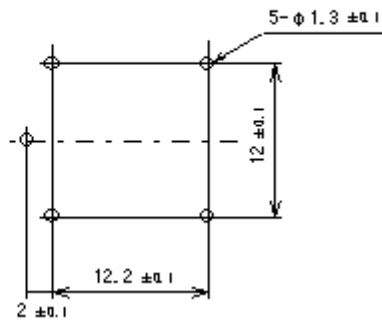
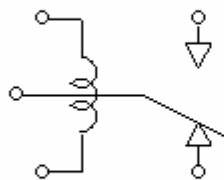
- (1) Store in locations where the product or container is not expose to corrosive gas such as hydrogen sulfide gas or salty air.
- (2) Store in location where no visible dust exists.
- (3) Store in location not subject to direct sunlight.

※On sealed relays with a vent provision, the vent should be opened after soldering and cleaning. Listed ratings assume that the relays are vented.



CONNECTION DIAGRAM (BOTTOM VIEW)

DRILLING DIAGRAM (BOTTOM VIEW)



※On *sealed* relays with a vent provision, the vent should be opened after soldering and cleaning.
Listed ratings assume that the relays are vented.