

COMPACT POWER RELAY

1 POLE X 2—12A (28VDC) (FOR 24V BATTERY AUTOMOTIVE APPLICATIONS)

FBR572, 582 SERIES

■ FEATURES

- Two independent relays mounted in a single package (43% of the volume of the two FRL-270 relays)
- High current contact capacity (carrying current: 40 A/2 minutes, 30 A/1 hour)
- Suitable for controlling 24 V motors in trucks and other large vehicles
- High heat resistance and extended operating voltage
- Two types of contact gap (FBR572: 0.8 mm, FBR582: 1.4 mm)



■ ORDERING INFORMATION

[Example] $\frac{\text{FBR572}}{\text{(a)}} \frac{\text{N}}{\text{(b)}} \frac{\text{D24}}{\text{(c)}} - \frac{\text{W}}{\text{(d)}} \frac{\text{**}}{\text{(e)}}$

| | | |
|-----|--------------------|--|
| (a) | Series Name | FBR572: FBR572 Series relay (contact gap 0.8 mm) FBR582: FBR582 Series relay (contact gap 1.4 mm) |
| (b) | Structure | N : Plastic sealed type |
| (c) | Nominal Voltage | D24 : 24 VDC |
| (d) | Contact Material | W : Silver-tin oxide indium Y : Silver-tin oxide N : Silver copper nickel |
| (e) | Custom Designation | To be assigned custom specification |

FBR572, 582 SERIES

■ SPECIFICATIONS

| Item | | FBR570 Series | FBR580 Series |
|------------|--------------------------------------|--|---|
| Contact | Arrangement | 1 form C × 2 (SPDT ×2) | |
| | Material | Silver-tin oxide indium (-W type) Silver copper nickel (-N type) | Silver-tin oxide indium (-W type) Silver-tin oxide (-Y type) |
| | Voltage Drop (Resistance) | Maximum 100 mV (at 12 VDC 2 A) | |
| | Ratings | 28 VDC 12 A (locked motor load) 28 VDC inrush 15 A, break 2.5 A (motor free load) | |
| | Maximum Carrying Current | 40 A/2 minutes, 30 A/ 1 hour (25°C, 100% rated coil voltage) | |
| | Maximum Inrush Current (Reference) | -W,-Y type: 60 A -N type: 40 A | |
| | Max. Switching Current (Reference) | 12 A 28 VDC | 14 A 32 VDC |
| | Minimum Switching Load*1 (Reference) | -W, -Y Type: 6 VDC 1 A -N Type: 6 VDC 2 A | |
| Coil | Operating Temperature | -40°C to +85°C (no frost) | |
| | Storage Temperature | -40°C to +100°C (no frost) | |
| Time Value | Operate (at nominal voltage) | Maximum 10 ms | |
| | Release (at nominal voltage) | Maximum 5 ms | |
| Life | Mechanical | 1 × 10 ⁷ operations minimum | 1 × 10 ⁶ operations minimum |
| | Electrical | 1 × 10 ⁵ operations minimum (locked motor load) 5 × 10 ⁵ operations minimum (motor free load) | 1 × 10 ⁵ operations minimum (locked motor load) |
| Other | Vibration Resistance | 10 to 55 Hz (double amplitude of 1.5 mm) | |
| | Shock Resistance | Misoperation | 100 m/s ² |
| | | Endurance | 1,000 m/s ² |
| | Weight | Approximately 18 g | |

*1 Values when switching a resistive load at normal room temperature and humidity, and in a clean environment.
The minimum switching load varies with the switching frequency and operating environment.

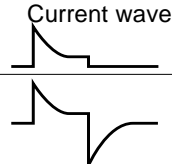
■ COIL DATA CHART

| ORDERING CODE | Rated coil voltage | Coil resistance (±10%) | Must operate voltage | Thermal resistance |
|------------------------------|--------------------|------------------------|----------------------|--------------------|
| FBR572ND24-W FBR572ND24-N | 24 VDC | 384 Ω | 14.4 VDC (at 20°C) | 67°C/W |
| FBR582ND24-W FBR582ND24-Y | | 170 Ω | 18.0 VDC (at 85°C) | 56°C/W |

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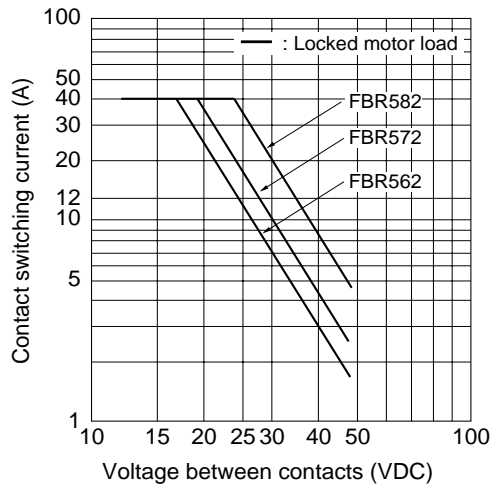
■ SUITABLE APPLICATIONS

| Application | Normal load current | Life x 10 ³ | Recommended model (example) |
|---------------------|---|------------------------|-----------------------------|
| Power Windows | 10 to 12 A (switching at motor locking) | 100 | FBR572ND24-W |
| Automatic Door Lock | 5 A/2 door (switching at motor locking) | 100 | FBR572ND24-W |
| Intermittent Wipers | INRUSH 15 to 30 A BREAK 2 to 8 (motor free) | 300 | FBR572ND24-W |
| | | | FBR572ND24-N |

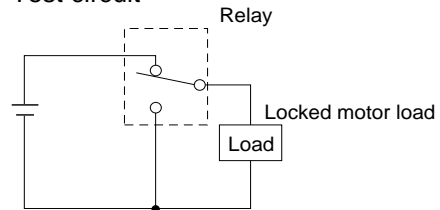


■ CHARACTERISTIC DATA

1. MAXIMUM BREAK CAPACITY



• Test circuit



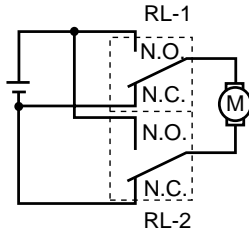
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2. LIFE TEST (EXAMPLE)

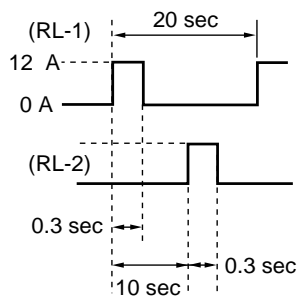
[FBR572 type]

- Test item
28 VDC-12 A
Motor lock
100,000 operations minimum
(FBR572 □-W type)

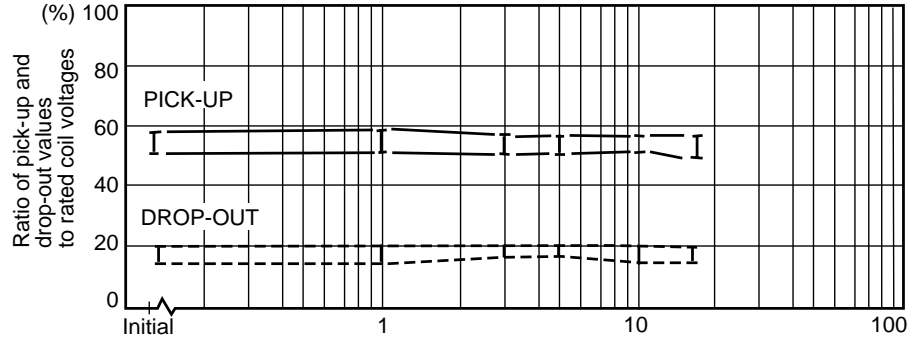
- Test circuit



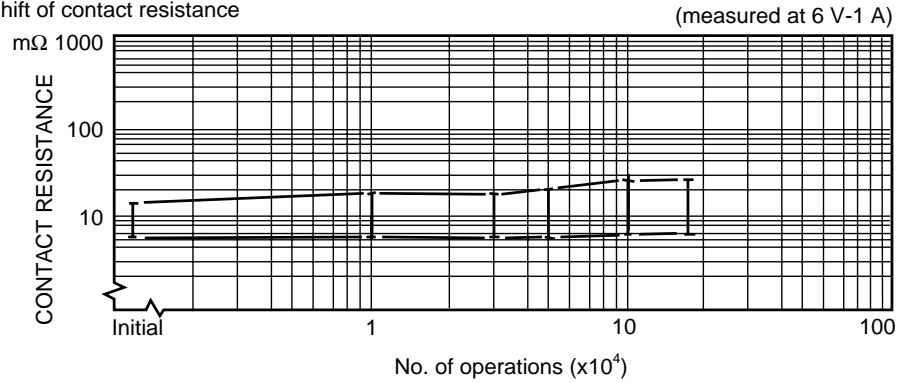
- Current wave form



- Shift of pick-up drop-out voltage



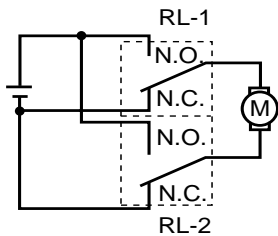
- Shift of contact resistance



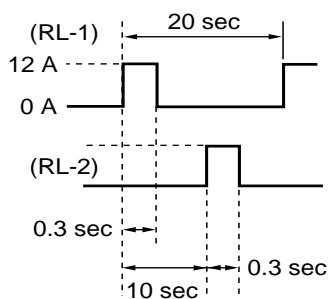
[FBR582 type]

- Test item
28 VDC-12 A
Motor lock
100,000 operations minimum
(FBR582 □-W type)

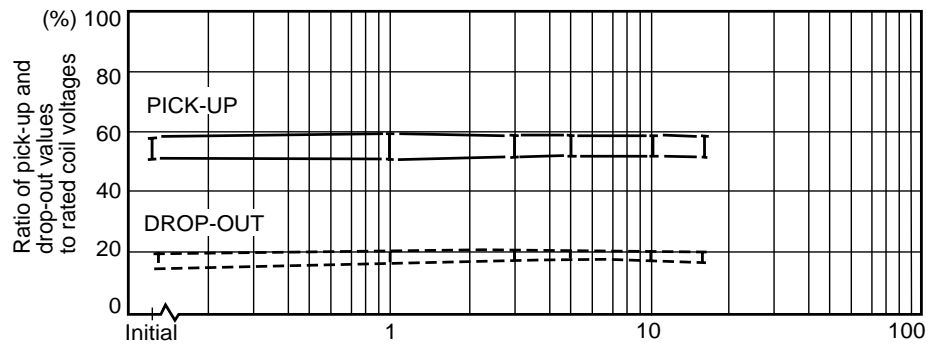
- Test circuit



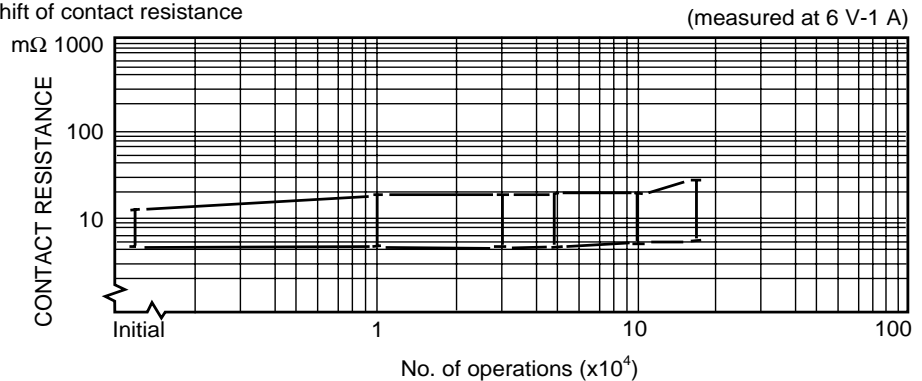
- Current wave form



- Shift of pick-up drop-out voltage



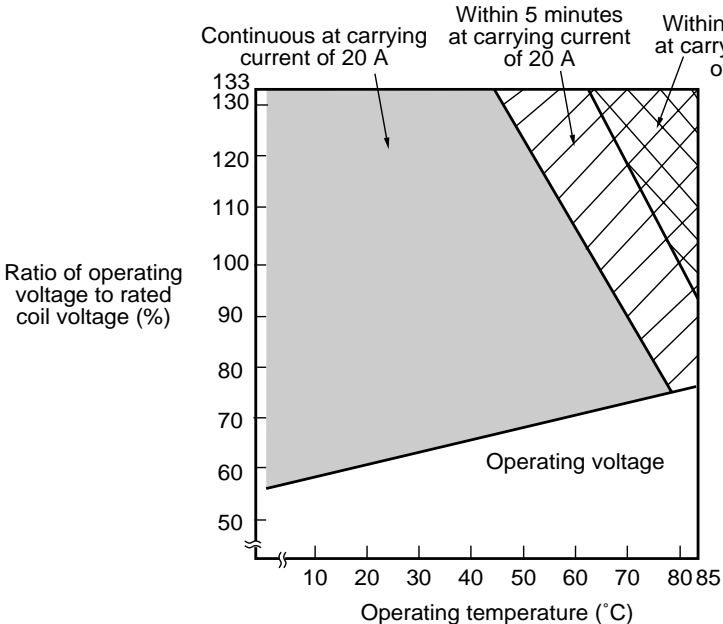
- Shift of contact resistance



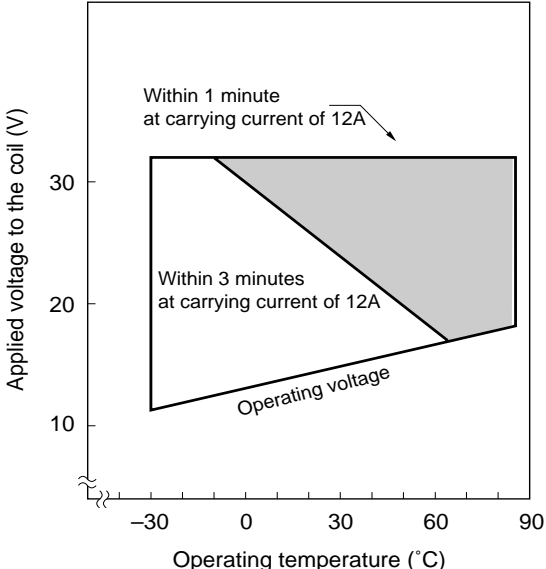
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3. OPERATING COIL VOLTAGE RANGE

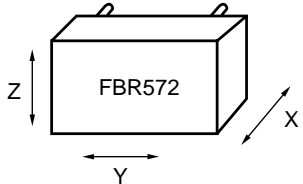
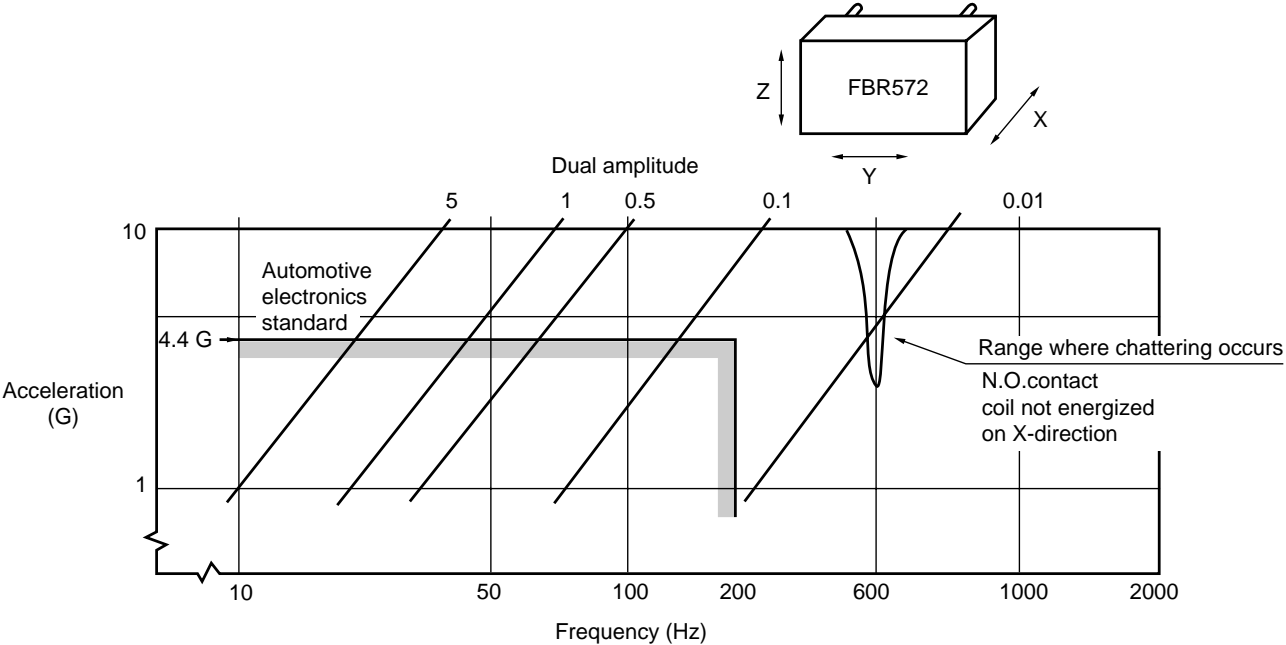
[FBR572 type]



[FBR582 type]

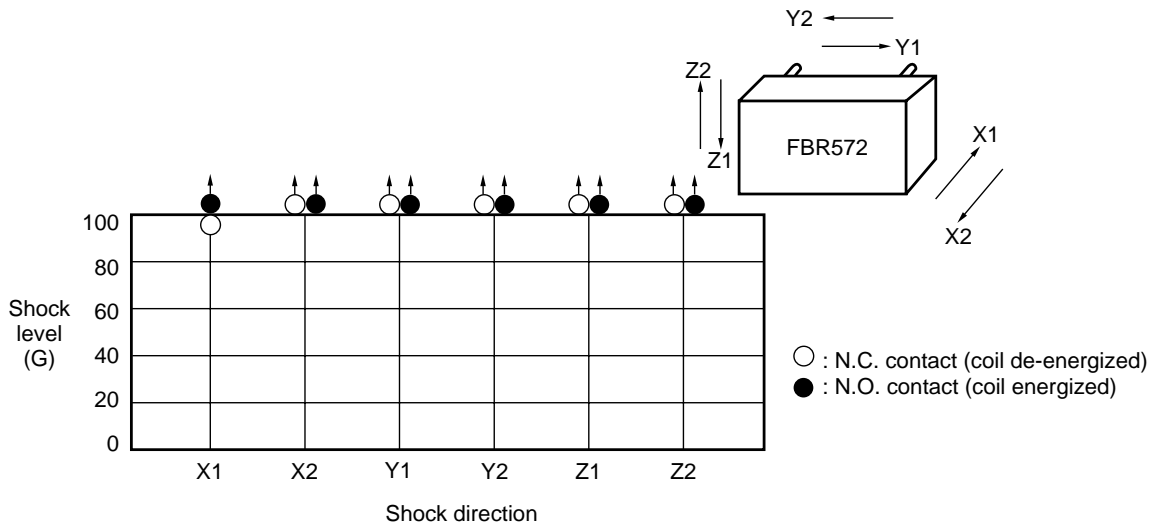


4. VIBRATION RESISTANCE CHARACTERISTICS



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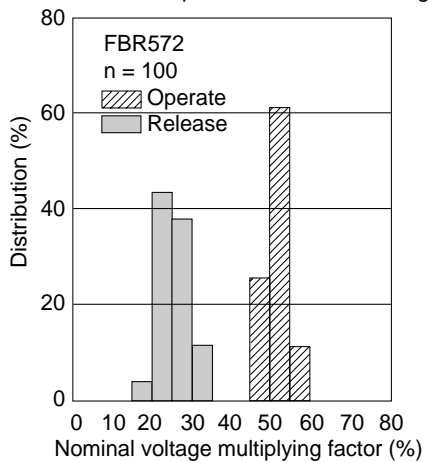
5. SHOCK RESISTANCE CHARACTERISTICS



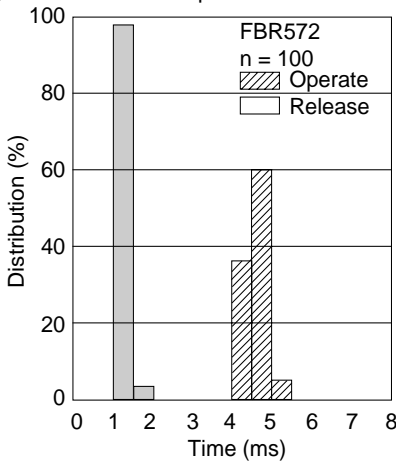
■ REFERENCE DATA

[FBR572 type]

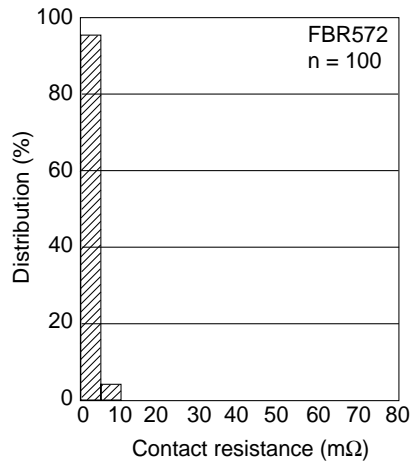
Distribution of operate and release voltage



Distribution of operate and release time

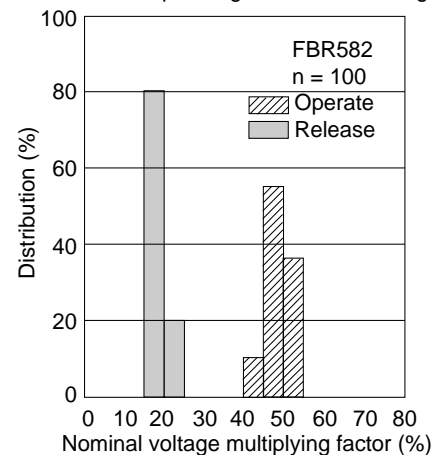


Distribution of contact resistance

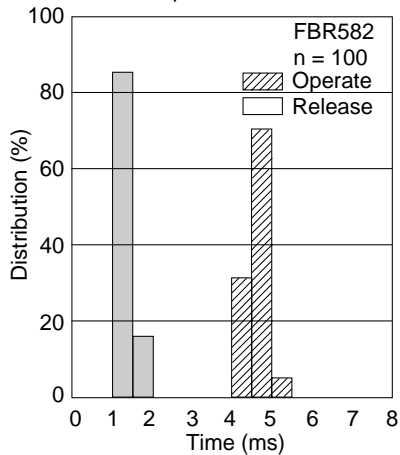


[FBR582 type]

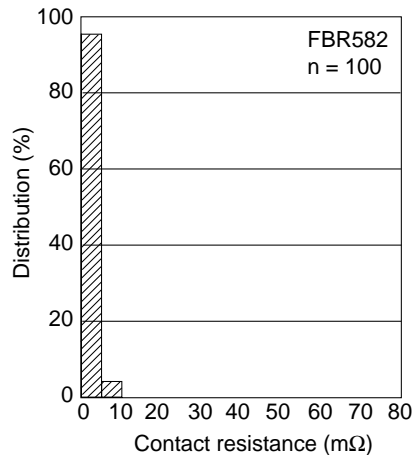
Distribution of operating and release voltage



Distribution of operate and release time



Distribution of contact resistance

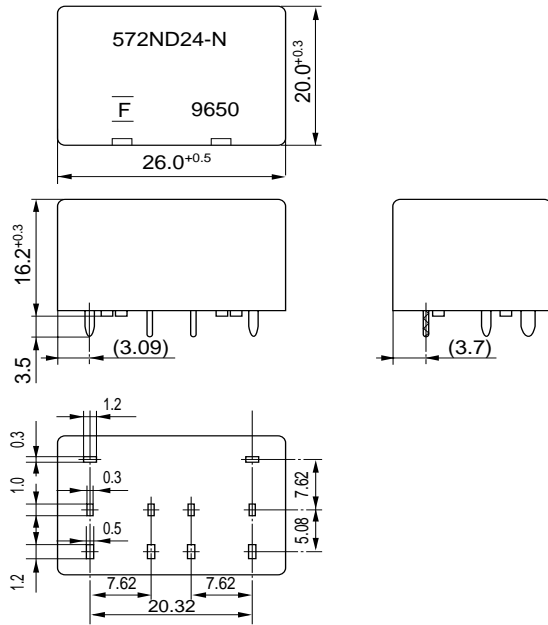


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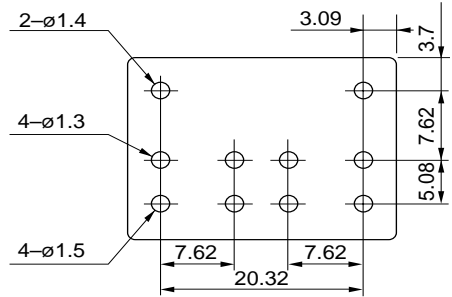
■ DIMENSIONS

[FBR572 type]

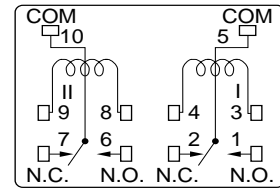
● Dimensions



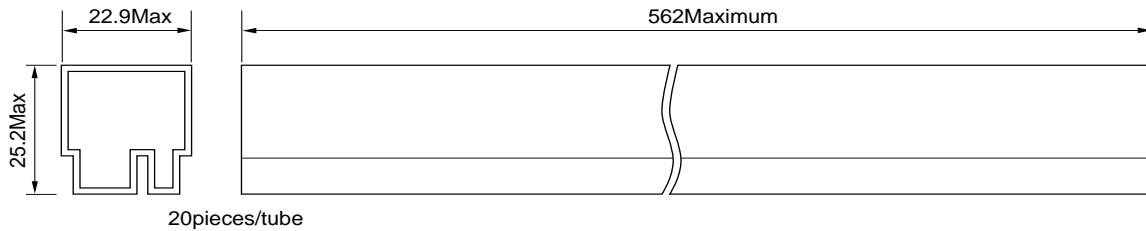
● PC board mounting hole layout (BOTTOM VIEW)



● Schematic (BOTTOM VIEW)



● Tube carrier



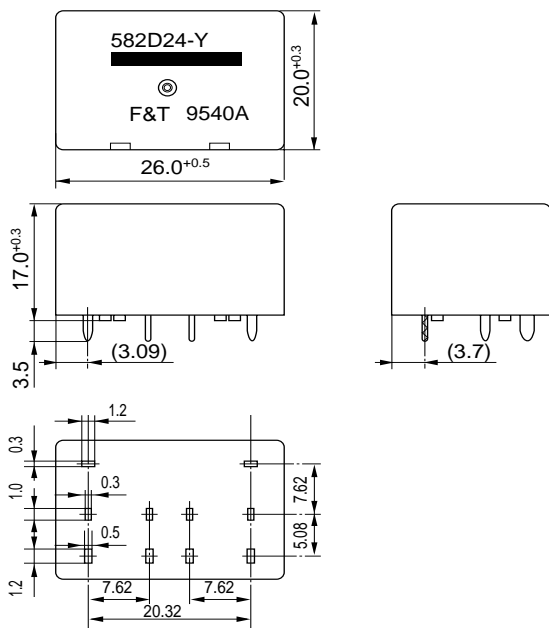
Unit: mm

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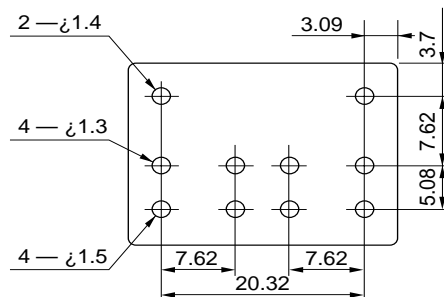
■ DIMENSIONS

[FBR582 type]

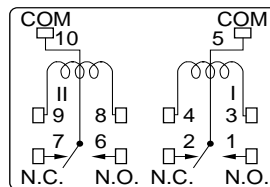
● Dimension



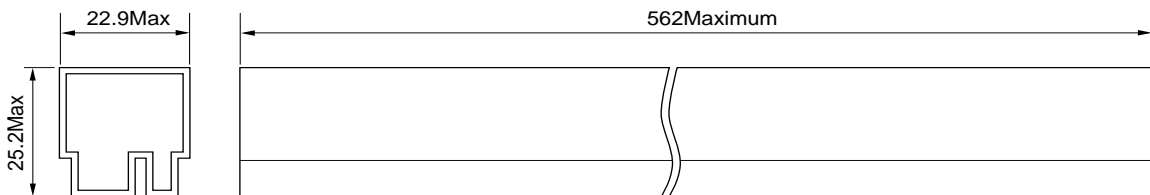
● PC board mounting hole layout (BOTTOM VIEW)



● Schematic (BOTTOM VIEW)



● Tube carrier



20pieces/tube

Unit: mm

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