COMPACT POWER RELAY

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

FBR572, 582 SERIES

RoHS compliant

■ 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)
- RoHS compliant since date code: 0627
  Please see page 9 for more information

■ ORDERING INFORMATION

[Example] FBR572 (a) N (b) D24 (c) – W (d) ** (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

■ 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*1		40 A/2 minutes, 30 A/ 1 hour (25°C, 100% rated coil voltage)	40 A/2 minutes (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*2 (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	

*1 Refer to 'Operating Coil Voltage Range' (page 5)
*2 Values when switching a resistive load at normal room temperature and humidity, and in a clean environment.

■ COIL DATA CHART

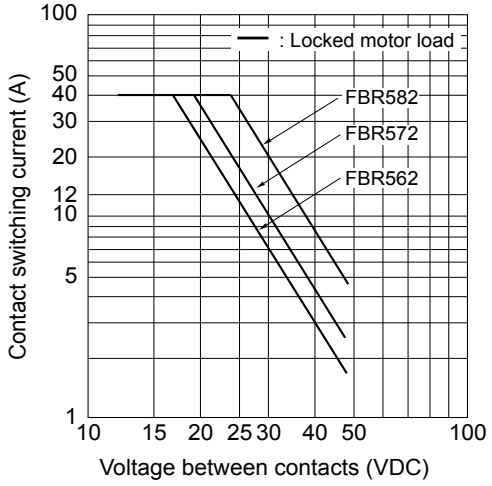
ORDERING CODE	Rated coil voltage	Coil resistance (±10%)	Must operate voltage	Thermal resistance
FBR572ND24-W FBR572ND24-N	24 VDC	384 Ω	67°C/W	14.4 VDC (at 20°C)
FBR582ND24-W FBR582ND24-Y		170 Ω	56°C/W	18.0 VDC (at 85°C)

■ SUITABLE APPLICATIONS

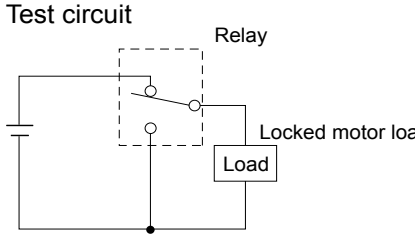
Application	Normal load current		Life x 10^3	Recommended model (example)
Power Windows	10 to 12 A (switching at motor locking)		100	FBR572ND24-W
Automatic Door Lock	5 A/2 door (switching at motor locking)		100	FBR572ND24-W
Intermittent Wipers	INRUSH 15 to 30 A BREAK 2 to 8 (motor free)	Current wave	300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

■ CHARACTERISTIC DATA

1. MAXIMUM BREAK CAPACITY



• Test circuit

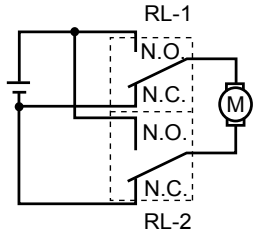


2. LIFE TEST (EXAMPLE)

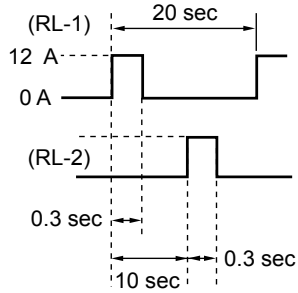
[FBR572 type]

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

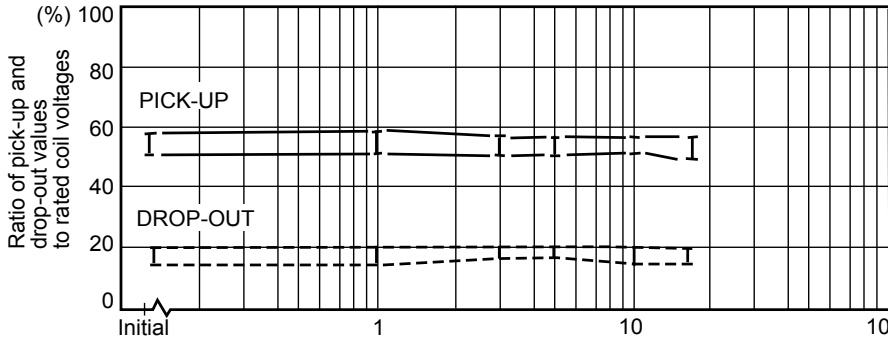
• Test circuit



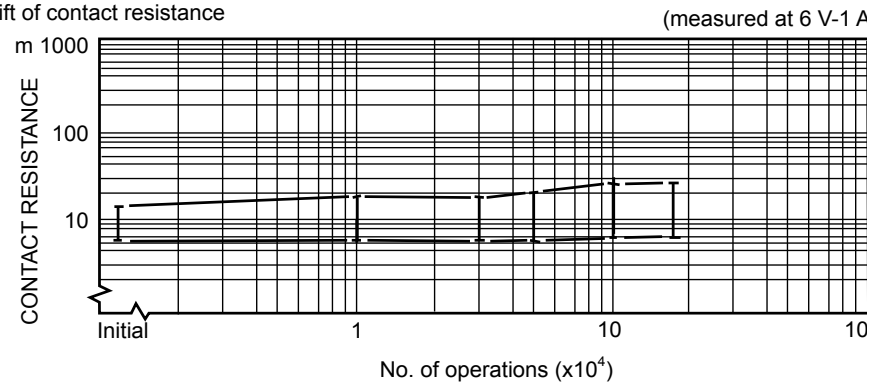
• Current wave form



• Shift of pick-up drop-out voltage



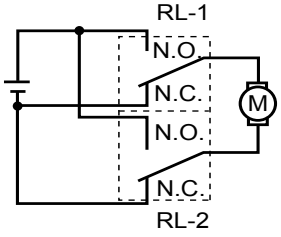
• Shift of contact resistance



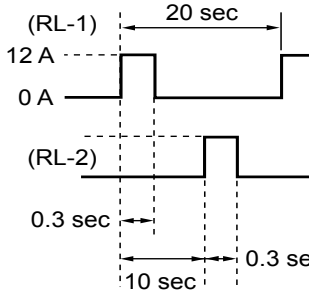
[FBR582 type]

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

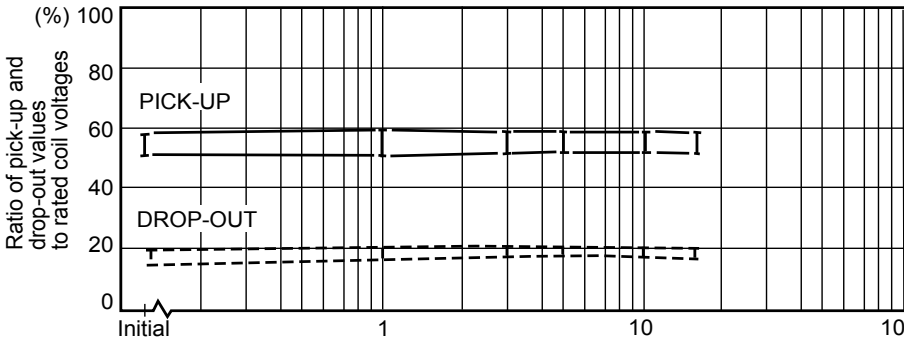
• Test circuit



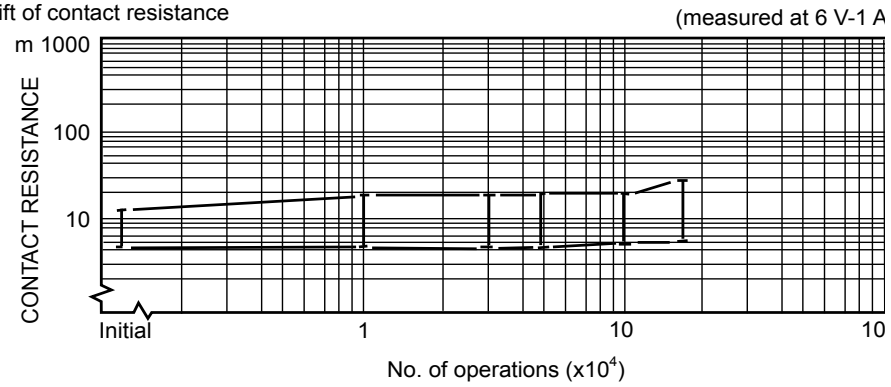
• Current wave form



• Shift of pick-up drop-out voltage

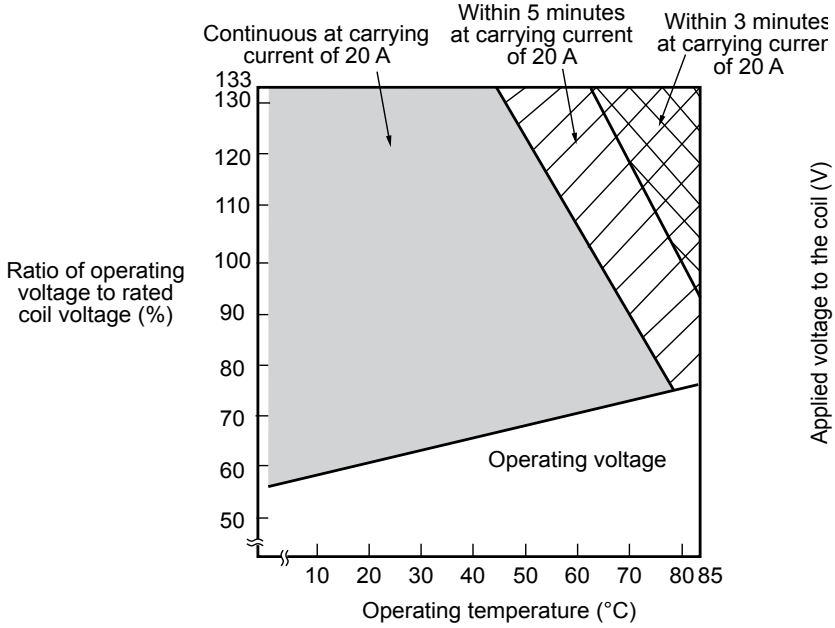


• Shift of contact resistance

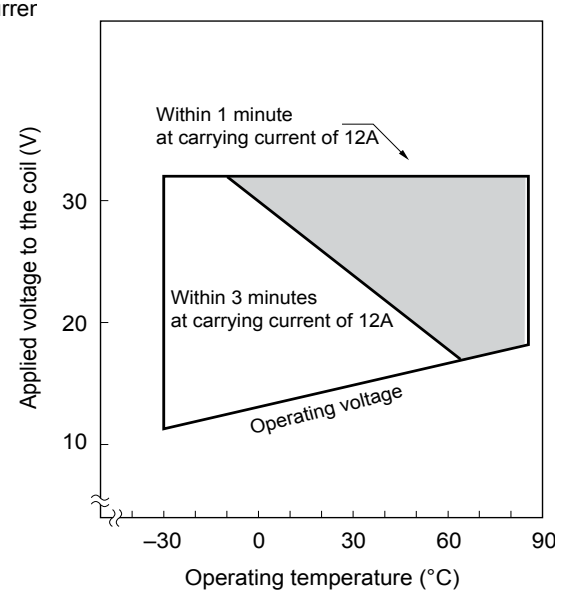


3. OPERATING COIL VOLTAGE RANGE

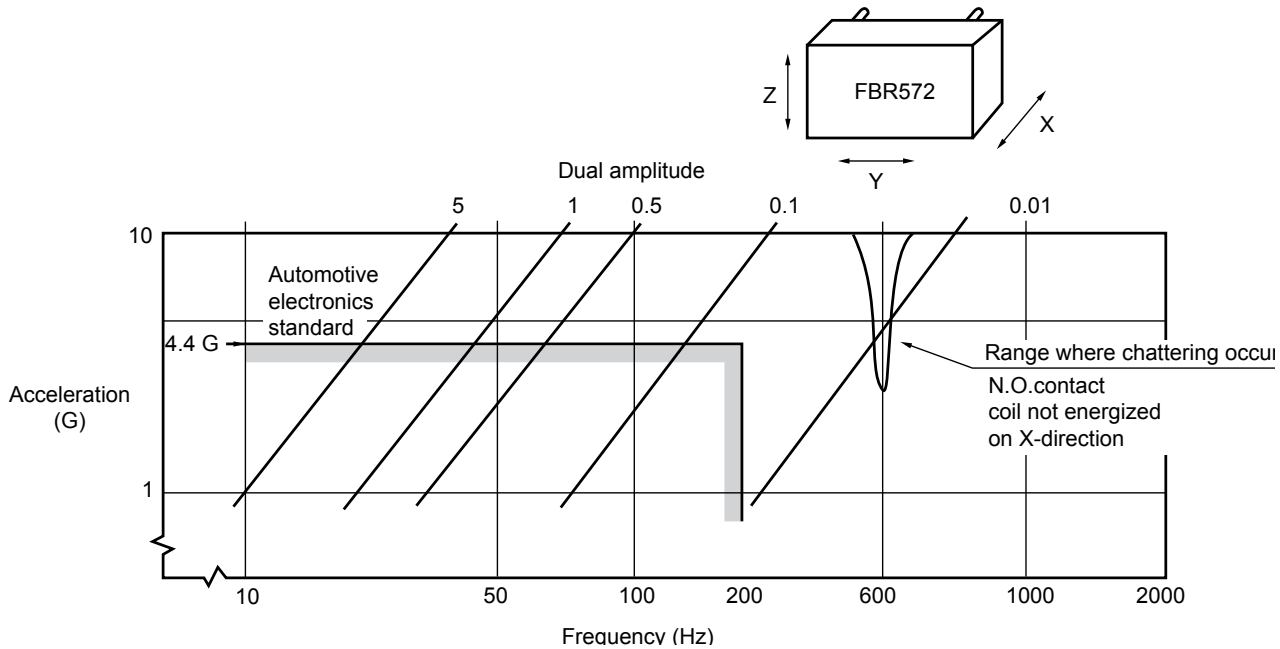
[FBR572 type]



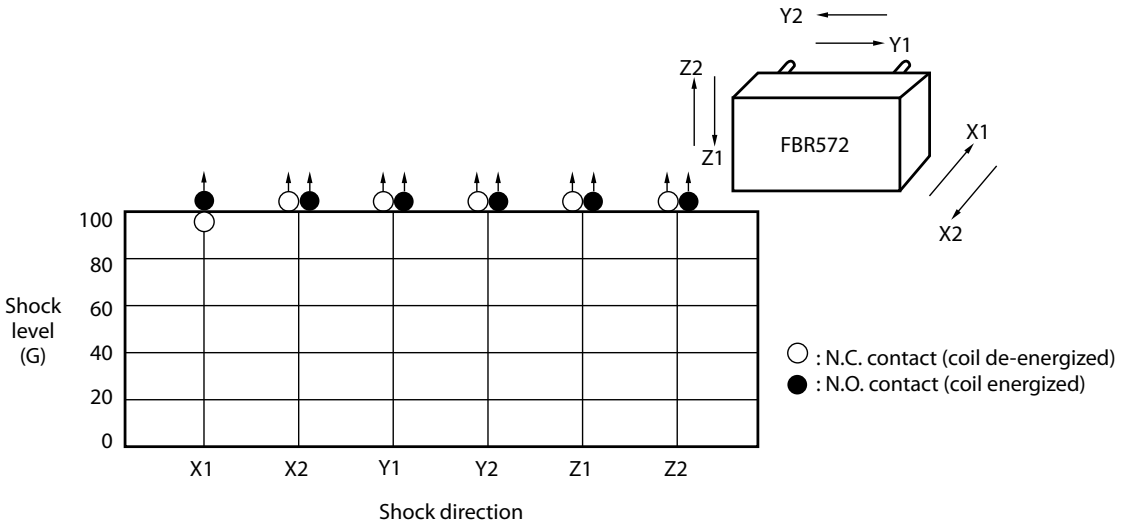
[FBR582 type]



4. VIBRATION RESISTANCE CHARACTERISTICS

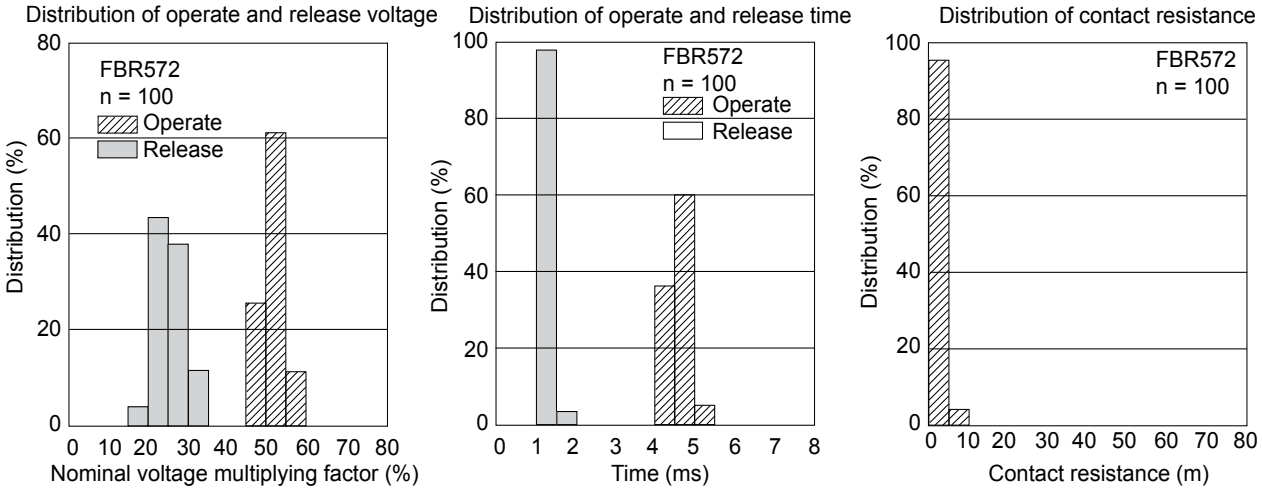


5. SHOCK RESISTANCE CHARACTERISTICS

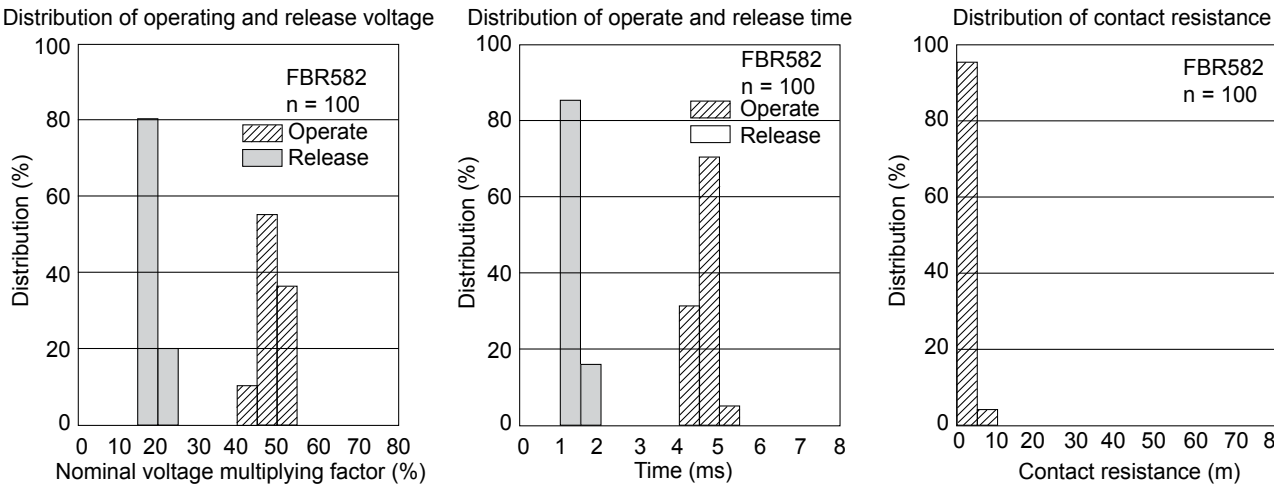


■ REFERENCE DATA

[FBR572 type]



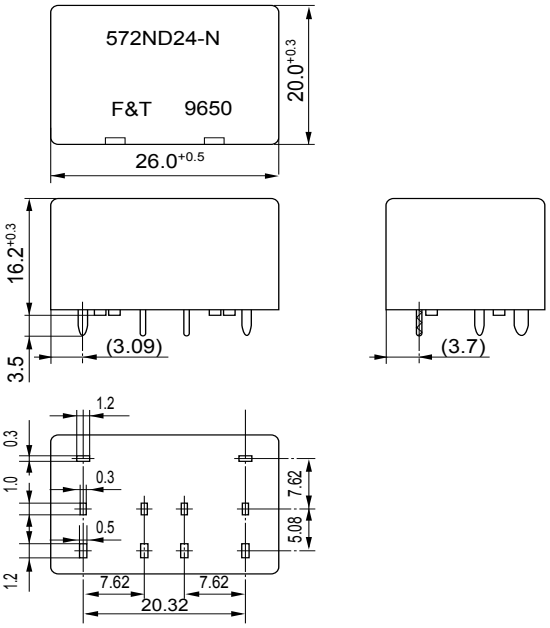
[FBR582 type]



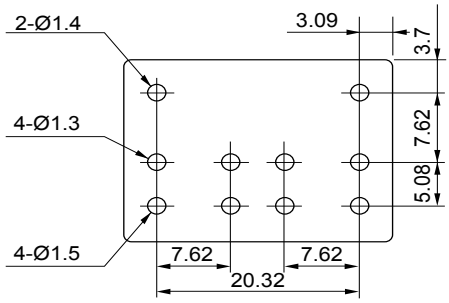
■ DIMENSIONS

[FBR572 type]

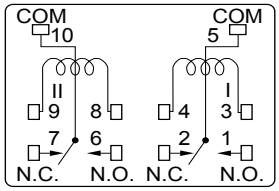
- Dimensions



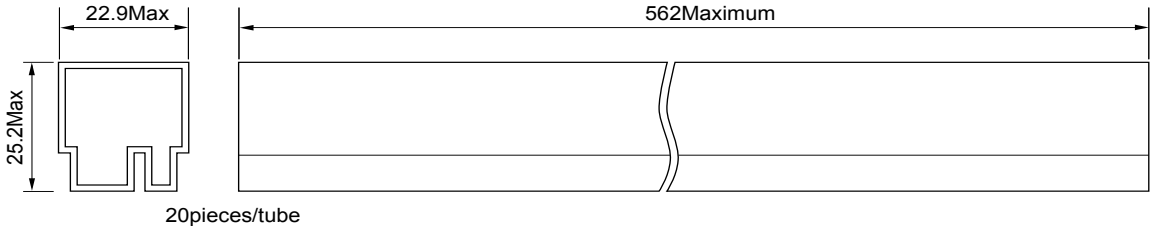
- PC board mounting hole layout (BOTTOM VIEW)



- Schematic
  (BOTTOM VIEW)



- Tube carrier

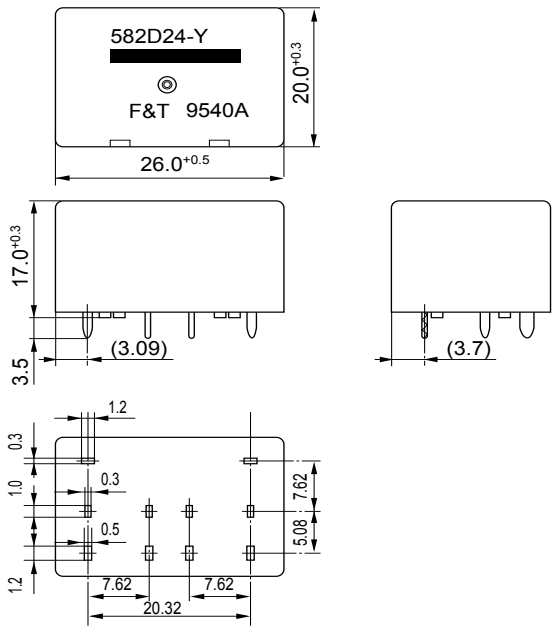


Unit: mm

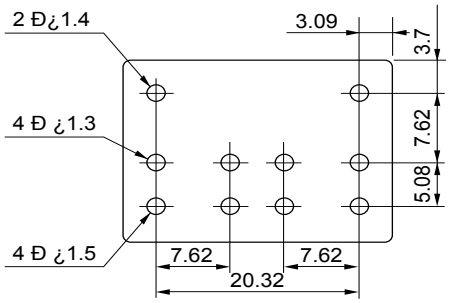
■ DIMENSIONS

[FBR582 type]

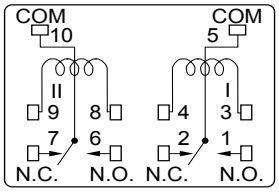
● Dimension



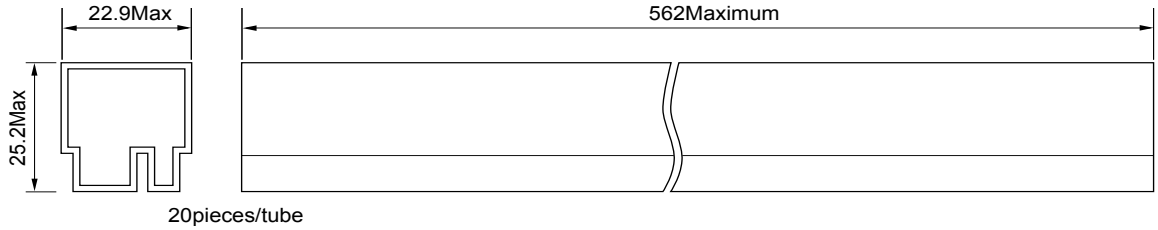
● PC board mounting hole layout (BOTTOM VIEW)



● Schematic
(BOTTOM VIEW)



● Tube carrier



Unit: mm

RoHS Compliance and Lead Free Relay Information

1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu.
- All signal and most power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 5 hazardous materials that are restricted by RoHS directive (lead, mercury, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in leaded assembly process will not cause any problems (compatible).
- “LF” is marked on each outer and inner carton. (No marking on individual relays).
- To avoid leaded relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship leaded relays as long as the leaded relay inventory exists.

Note: Cadmium was exempted from RoHS on October 21, 2005. (Amendment to Directive 2002/95/EC)

2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu.

Reflow Solder condtion

Flow Solder condtion:

Pre-heating:	maximum 120˚C
Soldering:	dip within 5 sec. at 260˚C soler bath

Solder by Soldering Iron:

Soldering Iron Temperature:	maximum 360˚C
Duration:	maximum 3 sec.

We highly recommend that you confirm your actual solder conditions

3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical realys.

4. Tin Whisker

- Dipped SnAgCu solder is known as low risk tin whisker. No considerable length whisker was found by our in house test.

Fujitsu Components International Headquarter Offices

Japan
Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141 8630, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@fcl.fujitsu.com
Web: www.fcl.fujitsu.com

North and South America
Fujitsu Components America, Inc.
250 E. Caribbean Drive
Sunnyvale, CA 94089 U.S.A.
Tel: (1-408) 745-4900
Fax: (1-408) 745-4970
Email: components@us.fujitsu.com
Web: http://us.fujitsu.com/components/

Europe
Fujitsu Components Europe B.V.
Diamantlaan 25
2132 WV Hoofddorp
Netherlands
Tel: (31-23) 5560910
Fax: (31-23) 5560950
Email: info@fceu.fujitsu.com
Web: emea.fujitsu.com/components/

Asia Pacific
Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#01-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcal@fcal.fujitsu.com
Web: http://www.fujitsu.com/sg/services/micro/components/

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