HIGH POWER TWIN RELAY

1 POLE x 2—30A

(FOR AUTOMOTIVE APPLICATIONS)

FBR562 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)
- High heat resistance and extended operating voltage

■ ORDERING INFORMATION

[Example] FBR562 (a) N (b) D12 (c) – W1 (d) ** (e)

(a)	Series Name	FBR562: FBR562 Series relay for 12 V battery (contact gap 0.4 mm)
(b)	Enclosure	N : Plastic sealed type
(c)	Nominal Voltage	D06 : 6 VDC D09 : 9 VDC D12 : 12 VDC
(d)	Contact Material	W1 : Silver-tin oxide indium
(e)	Custom Designation	To be assigned custom specification

■ SPECIFICATIONS

Item			Specifications
Contact	Arrangement		1 form C × 2 (SPDT × 2)
	Material		Silver-tin oxide indium (–W1 type)
	Voltage Drop (resistance)		Maximum 100 mV (at 2 A 12 VDC)
	Ratings		14 VDC 20 A (locked motor load) 14 VDC inrush 20 A, break 4 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)		–W1 type: 60 A
	Max. Switching Current (reference)		40 A 16 VDC
	Minimum Switching Load*1 (reference)		–W1 type: 6 VDC 1 A
Coil	Operating Temperature		–40°C to +85°C (no frost) (refer to the CHARACTERISTIC DATA)
	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
	Electrical		1×10^5 operations minimum (locked motor load) 1×10^6 operations minimum (motor free 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

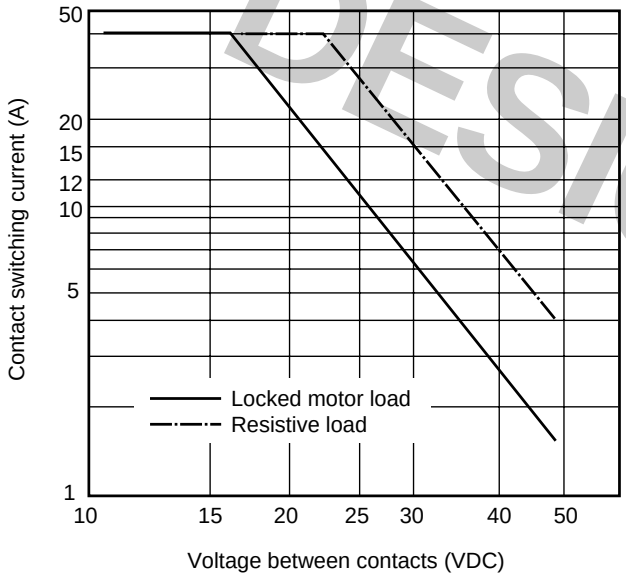
MODEL W1 contact	Nominal voltage	Coil resistance (±10%) (at 20°C)	Must operate voltage	Thermal resistance
FBR562ND06-W1	6 VDC	42 Ω	3.6 VDC (at 20°C) 4.5 VDC (at 85°C)	77°C/W
FBR562ND09-W1	9 VDC	95 Ω	5.4 VDC (at 20°C) 6.8 VDC (at 85°C)	
FBR562ND12-W1	12 VDC	170 Ω	7.3 VDC (at 20°C) 9.2 VDC (at 85°C)	

■ SUITABLE APPLICATIONS

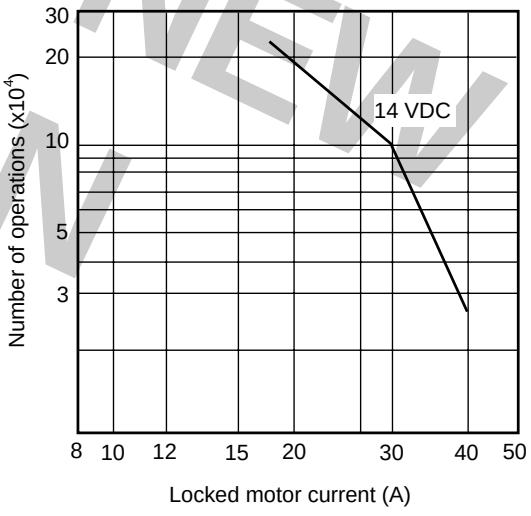
Application		Normal load current	Life x 10^3	Recommended model (example)
For 12 V battery	Power Windows	20 to 30 A (switching at motor locking)	100	FBR562N□ -W1
	Automatic Door Lock	18 to 30 A/4 to 5 door (switching at motor locking)	100	FBR562N□ -W1
	Intermittent Wipers	INRUSH 15 to 30 A BREAK 2 to 8 A (motor free)	300	FBR562N□-W1
	Tilt-Lock Wheel	INRUSH 15 A BREAK 2.5 A (motor free)	100	FBR562N□-W1
	Sunroof	20 to 30 A (switching at motor locking)	100	FBR562N□-W1
	Others	Car audio system, etc	—	FBR562N□-W1

■ CHARACTERISTIC DATA

1. MAXIMUM BREAK CAPACITY



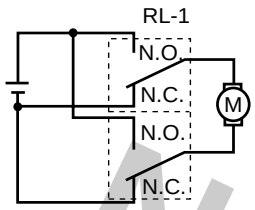
2. LIFE



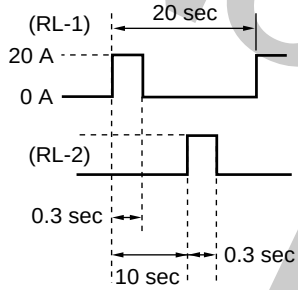
3. LIFE TEST (EXAMPLE)

¥ Test item
14 VDC-20 A
Motor lock
200,000 operations minimum
(FBR562 □-W1 type)

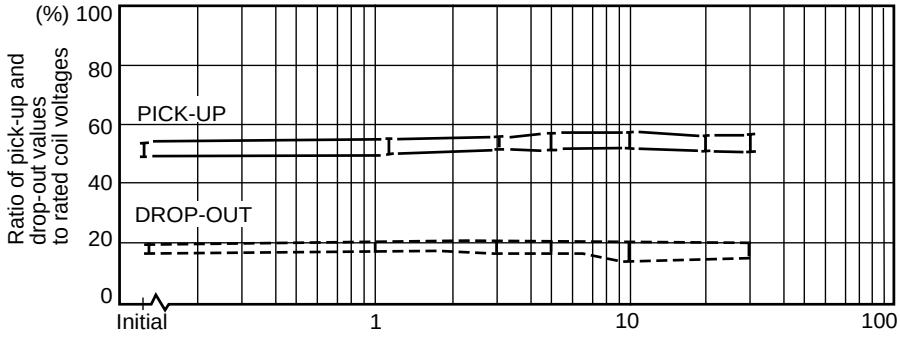
¥ Test circuit



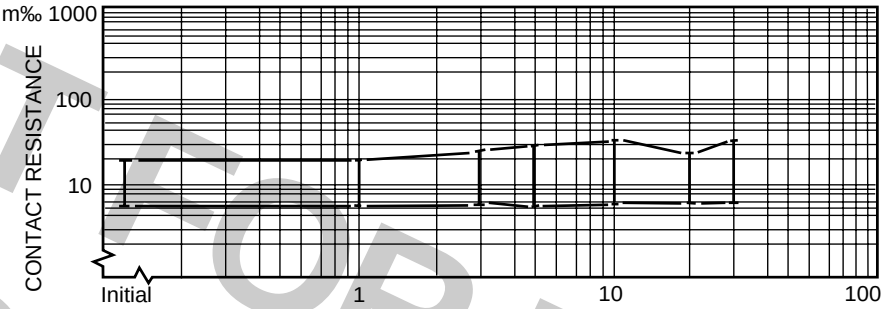
¥ Current Wave Form



¥ Shift of pick-up drop-out voltage

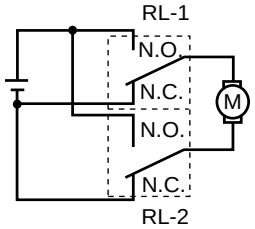


¥ Shift of contact resistance (measured at 6 V-1 A)

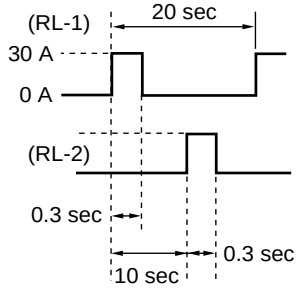


¥ Test item
14 VDC-30 A
Motor lock
100,000 operations minimum
(FBR562 □-W1 type)

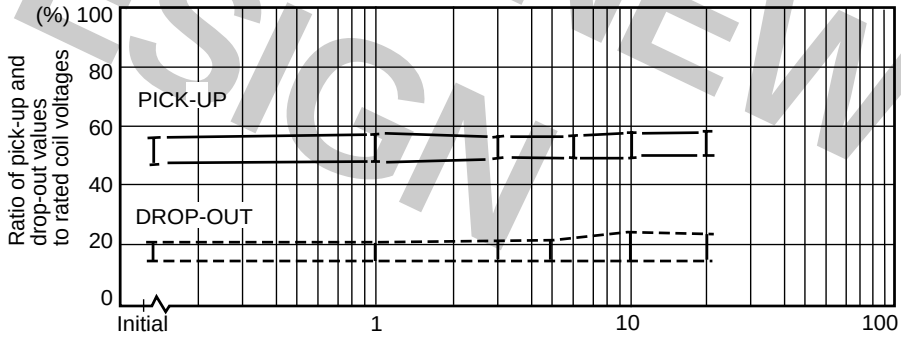
¥ Test circuit



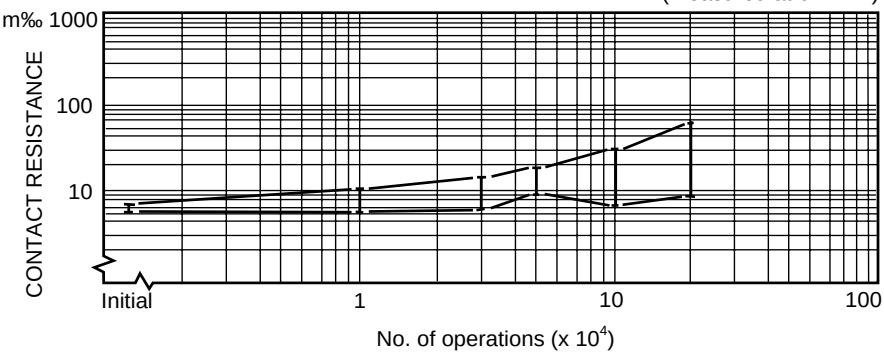
¥ Current wave form



¥ Shift of pick-up drop-out voltage



¥ Shift of contact resistance (measured at 6 V-1 A)



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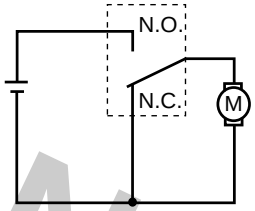
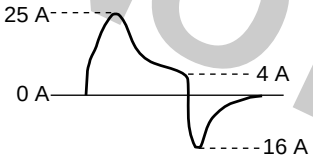
● Test item
16 VDC-25 A INRUSH
Motor Free
400,000 operations minimum
(FBR562 □-W1 type)

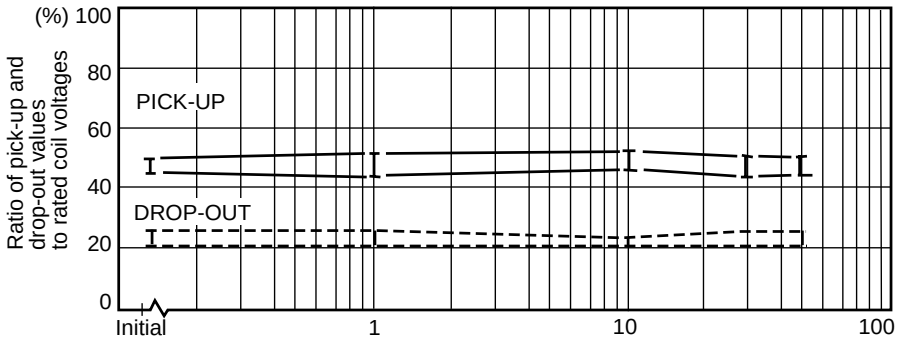
● Test circuit



● Current wave form

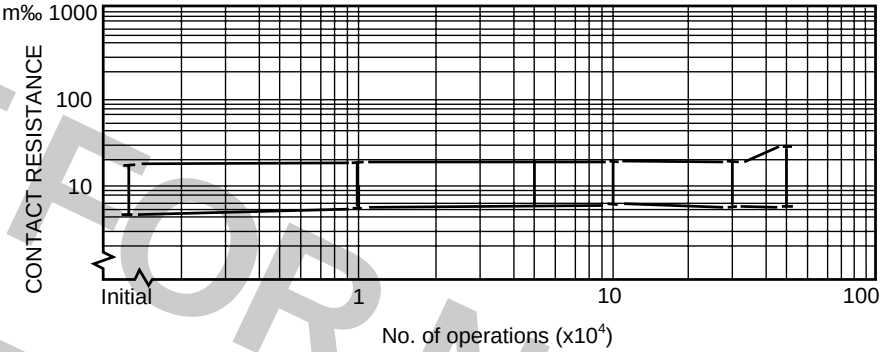


● Shift of pick-up drop-out voltage

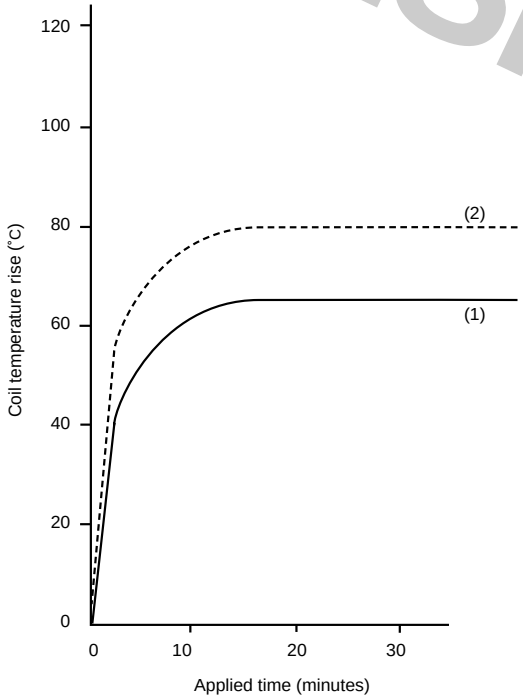


● Shift of contact resistance

(measured at 6 V-1 A)



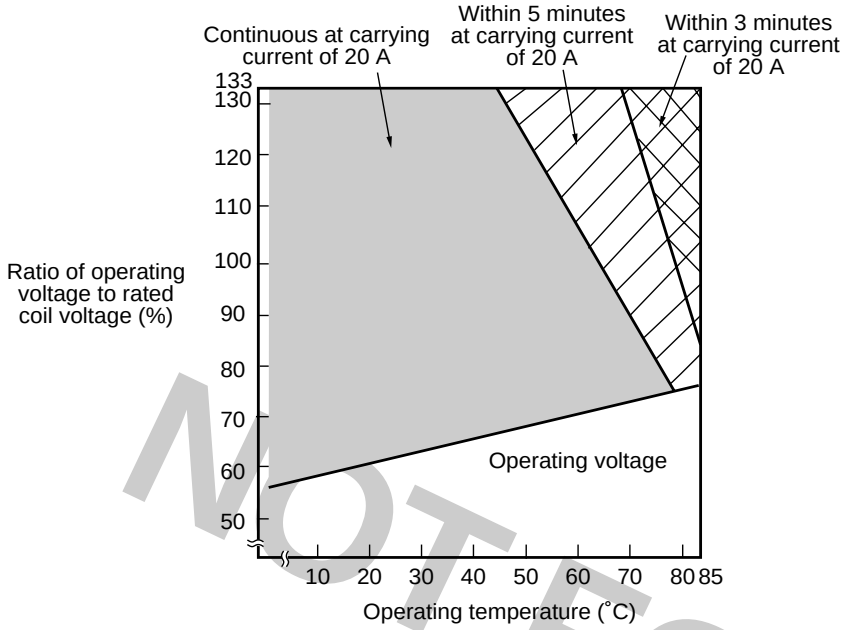
4. COIL TEMPERATURE RISE



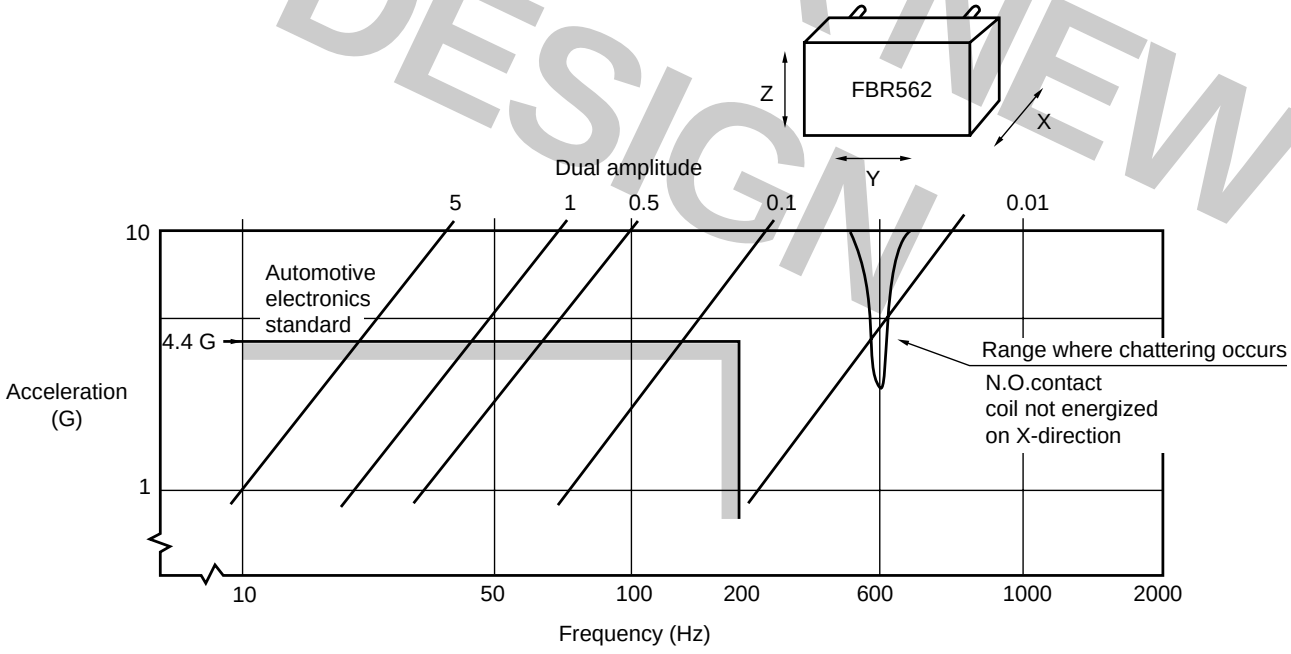
*: One coil energized at 20°C

If both coils are energized, temperature rise will increase by
(1) 5°C (0 A carrying current)
(2) 20°C (10 A carrying current)

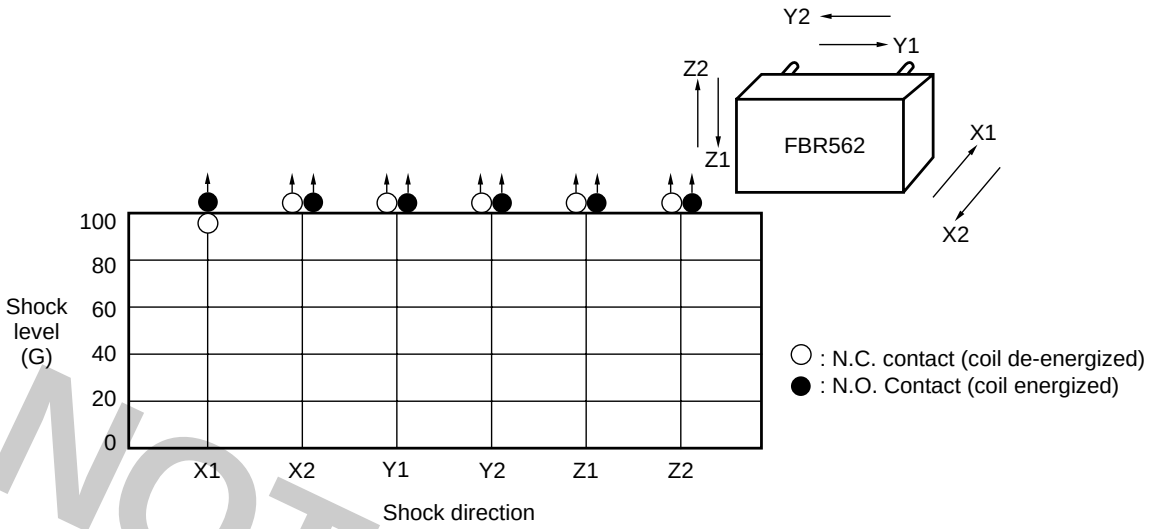
5. OPERATING COIL VOLTAGE RANGE (EXAMPLE)



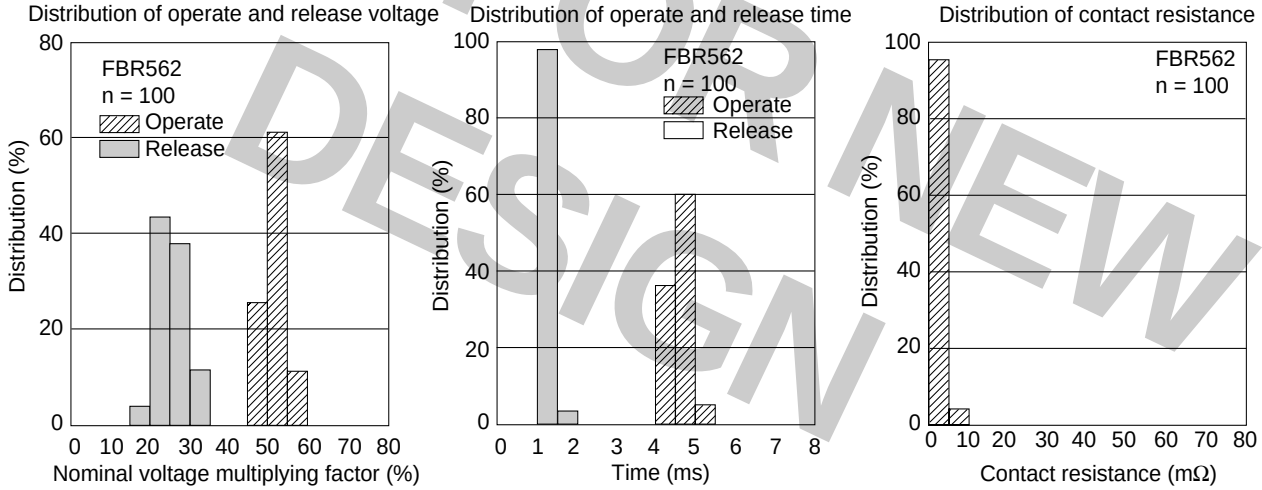
6. VIBRATION RESISTANCE CHARACTERISTICS



7. SHOCK RESISTANCE CHARACTERISTICS

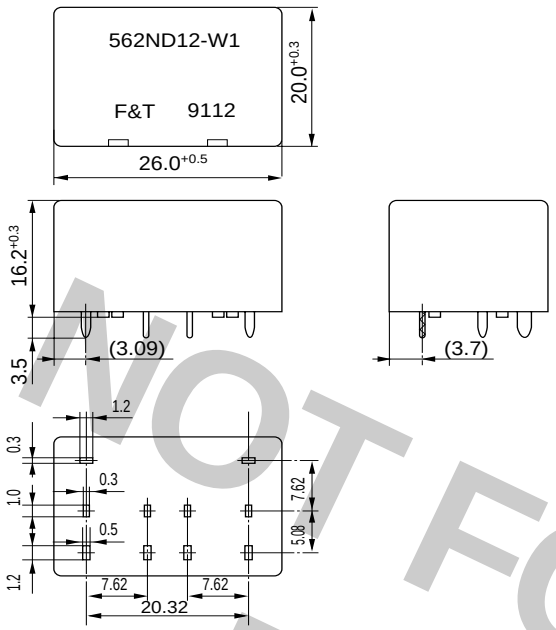


■ REFERENCE DATA

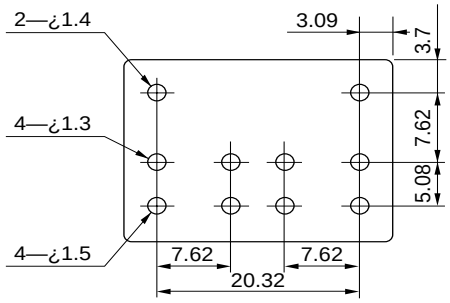


■ DIMENSIONS

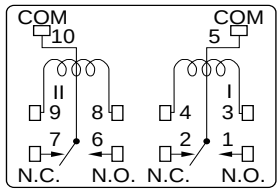
● Dimensions



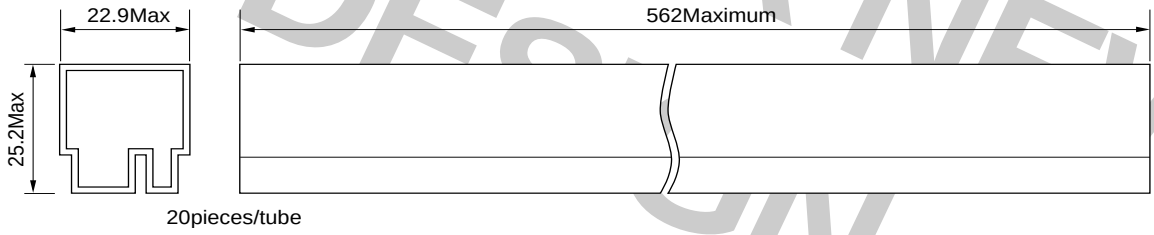
● PC board mounting hole layout (BOTTOM VIEW)



● Schematic
(BOTTOM VIEW)



● Tube carrier



20pieces/tube

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