

COMPACT POWER RELAY 1 POLE—30 A (For Automotive Applications)

FBR53 SERIES

■ FEATURES

- Compact for high density packaging
- High contact capability (30A continuous)
- High temperature grade (-40°C to 125°C)
- Contact arrangement Form U (form A)



■ ORDERING INFORMATION

[Example] FBR53 ND 12 - Y - ***
(a) (b) (c) (d) (e)

(a)	Series Name	FBR-53	: FBR-53 Series
(b)	Contact Arrangement	ND	: Form U
(c)	Nominal Voltage	09 10 12	: 9 VDC : 10 VDC : 12 VDC
(d)	Contact Material	Y	: Silver Tin Oxide
(e)	Custom designation	Nil	: Standard

Note: The part number on the relay cover does not include 'FBR'

Example: Ordering part number: FBR-53ND12-Y
 Stamped part number: 53ND12-Y

FBR53 SERIES

■ COIL DATA CHART

Standard

Model	Nominal Voltage	Coil Resistance (±10% at 20°C)	Must Operate Voltage
FBR53ND09-Y	9 VDC	135Ω	5.4 VDC (at 20°C) 6.8 VDC (at 85°C)
FBR53ND10-Y	10 VDC	180Ω	6.3 VDC (at 20°C) 7.9 VDC (at 85°C)
FBR53ND12-Y	12VDC	240Ω	7.3 VDC (at 20°C) 9.2 VDC (at 85°C)

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■ SPECIFICATIONS

Item		Specification		
		Standard		
Contact	Arrangement	Form U (Form A)		
	Material	Silver Tin Oxide		
	Contact rating	DC 14V, 25A (resistive load)		
	Maximum Carrying Current	30A continuous (15A each contact) at 25°C		
	Maximum Inrush Current	60A inrush (30A each contact) at 25°C		
	Contact Voltage Drop	Max. 100mV (1A, 12VDC) Average 1.5mΩ at 7A 12 VDC		
	Min. load (reference)*	1A, 6VDC		
Coil	Coil Power Consumption (at rated coil voltage)	600mW		
	Operate Coil Power	220mW		
	Operating Temperature Range	-40° C to +125° C (no frost)		
	Storage Temperature Range	-40° C to +125° C (no frost)		
	Operating Humidity	45 to 85%RH		
Time	Operate (at nominal voltage)	10 ms maximum		
	Release (at nominal voltage)	5 ms maximum		
Life	Mechanical	10x10 ⁶ operations minimum (with no load for contact)		
	Electrical	1x10 ⁵ operations minimum (14VDC 20A resistive load)		
Other	Vibration resistance	Misoperation	10-55Hz, 1.5mm dual amplitude, direction X, Y, Z	
		Endurance	10 to 100Hz, 1.5mm dual amplitude, direction X, Y, Z. Not be damaged (mechanical and technical) after test. Coil energizing: 1 hr in each direction, Coil non-energizing: 1 hr in each direction	
	Shock resistance	Misoperation	100 m/s ² (11ms), direction X, Y, Z	
		Endurance	1000 m/s ² (11ms), direction X, Y, Z, each 6 times Not be damaged (mechanical and technical) after test. Coil energizing: 3 times; Coil non-energizing: 3 times, total 36 times.	
	Terminal	Solderability	at 270±10° C for 3±0.5sec. (terminals must be soldered)	
		Strength	Pulling a terminal in its longitudinal direction for 10 sec. at 9.8N (1 Kgf)	
	Weight	Approximately 6 grams		

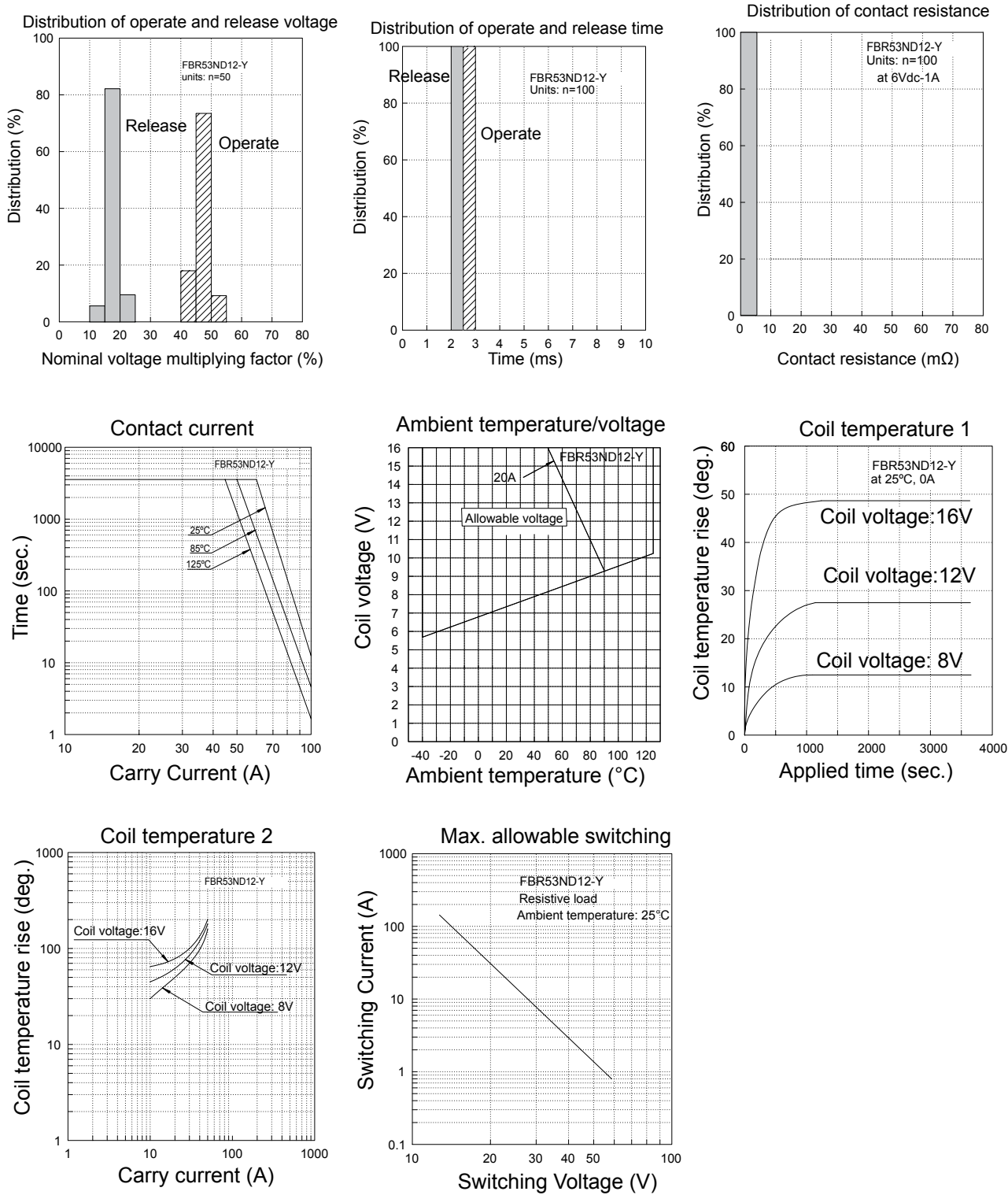
*This is the standard value of the minimum load level. This value may differ depending on the switching frequency, environmental conditions and target reliability standard. We recommend to check this value by an actual load prior to use.

■ INSULATION

Item		Specification
Resistance		Minimum 100 MΩ 1 min.
Dielectric Strength	open contacts	500 VAC (50/60 Hz) 1 min.
	coil and contacts	500 VAC (50/60 Hz) 1 min.

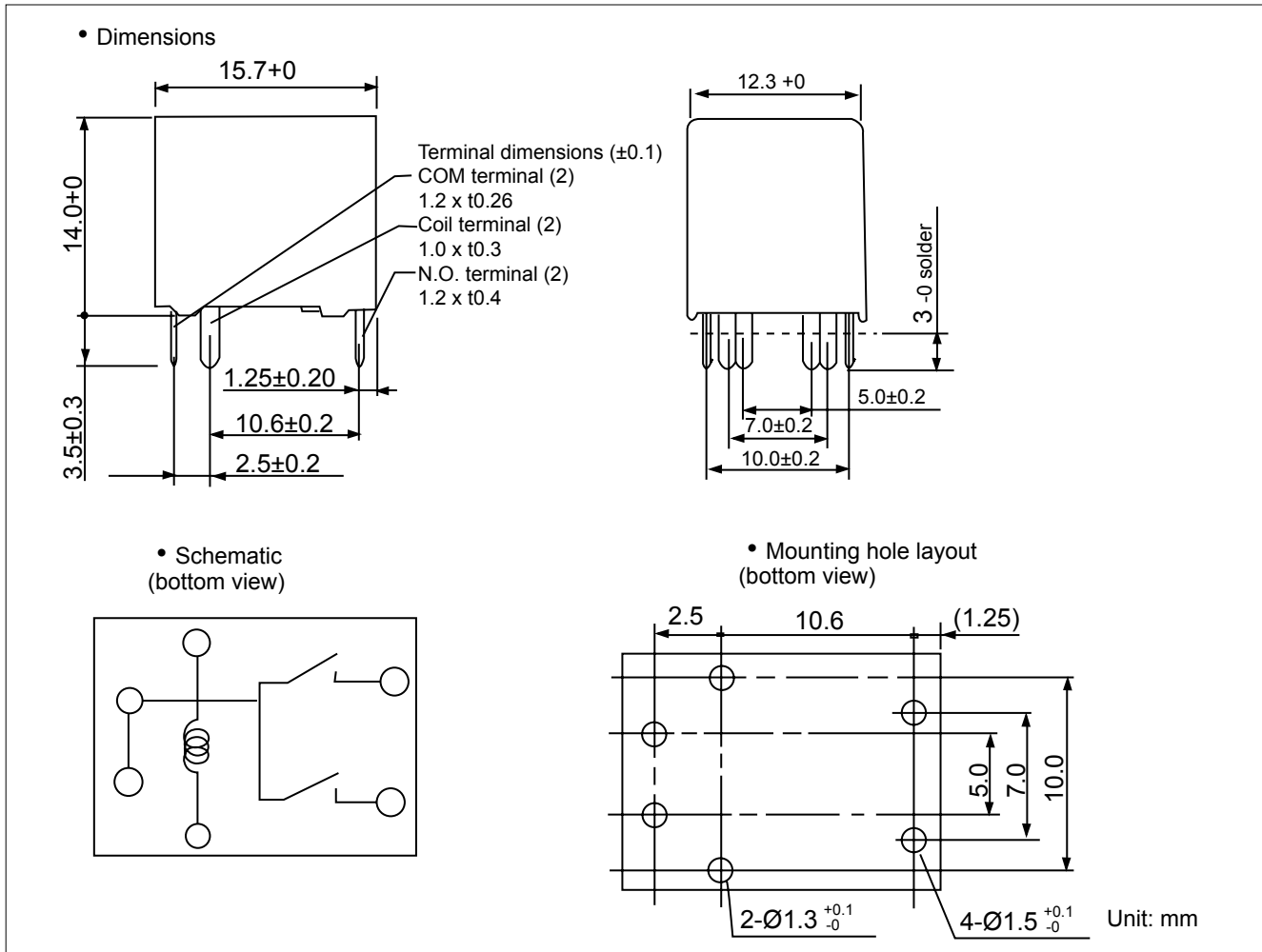
FBR53 SERIES

REFERENCE DATA



FBR53 SERIES

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