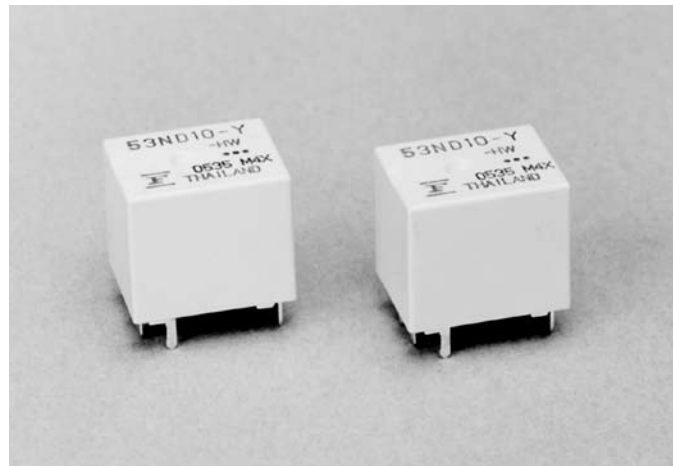


COMPACT HIGH POWER RELAY 1 POLE—40 A (For Automotive Applications)

FBR53-HW SERIES

■ FEATURES

- Smallest 40A relay
- High temperature grade (-40°C to 125°C)
- Contact arrangement Form U (form A)
- Surface mount compatible (reflow capability)



■ ORDERING INFORMATION

[Example] FBR53 N D12 -Y -HW
(a) (b) (c) (d) (e)

(a)	Series Name	FBR-53-HW: FBR-53HW Series
(b)	Contact Arrangement	N : Plastic sealed
(c)	Nominal Voltage	D09 : 9 VDC D10 : 10 VDC D12 : 12 VDC
(d)	Contact Material	Y : Silver Tin Oxide
(e)	Contact Rating	HW : 40A

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-HW SERIES

■ COIL DATA CHART

Standard

Model	Nominal Voltage	Coil Resistance ($\pm 10\%$ at 20°C)	Must Operate Voltage
FBR53ND09-Y-HW	9 VDC	94 Ω	5.4 VDC (at 20°C) 7.7 VDC (at 125°C)
FBR53ND10-Y-HW	10 VDC	177 Ω	6.3 VDC (at 20°C) 9 VDC (at 125°C)
FBR53ND12-Y-HW	12VDC	167 Ω	7.3 VDC (at 20°C) 10.4 VDC (at 125°C)

FBR53-HW SERIES

■ SPECIFICATIONS

Item		Specification	
		FBR53ND()Y-HW	
Contact	Arrangement	Form U (Form A)	
	Material	Silver Tin Oxide	
	Contact rating	40A, 14 VDC (resistive load)	
	Maximum Carrying Current	40A	
	Maximum Inrush Current	80A inrush	
	Contact Voltage Drop	Max. 100mV (1A, 12VDC) Average 1.2mΩ at 7A 12 VDC	
	Min. load (reference)*	1A, 6VDC	
Coil	Coil Power Consumption (at rated coil voltage)	860mW	
	Operate Coil Power	310mW	
	Operating Temperature Range	-40° C to +125° C (no frost)	
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	

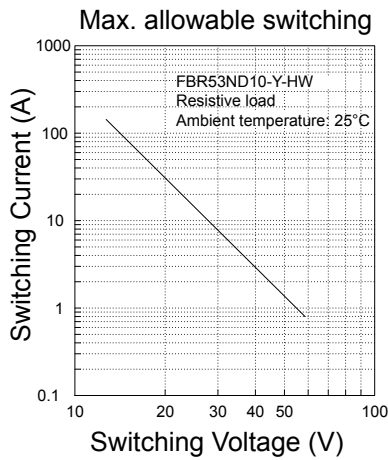
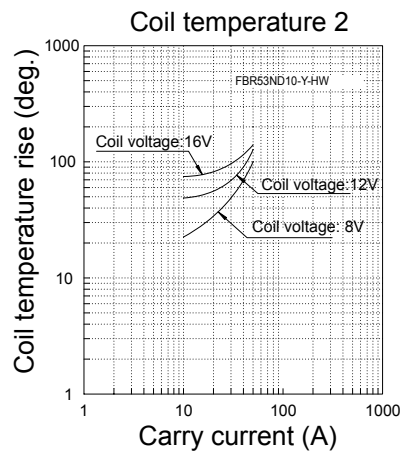
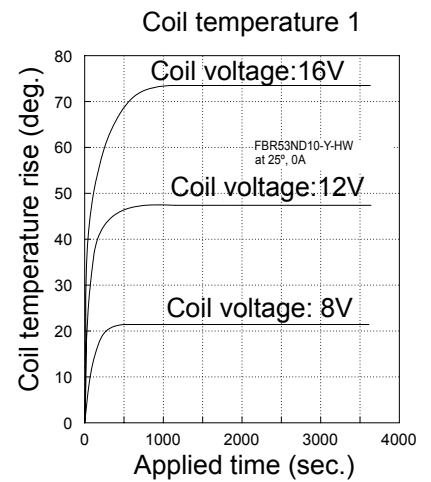
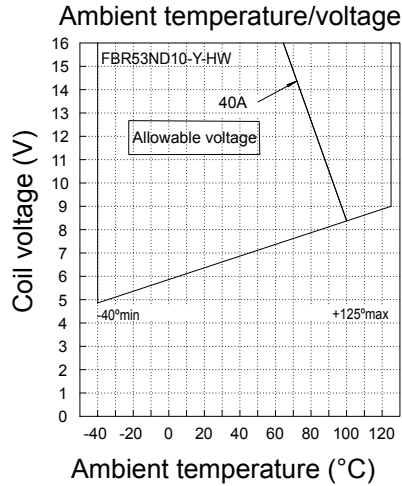
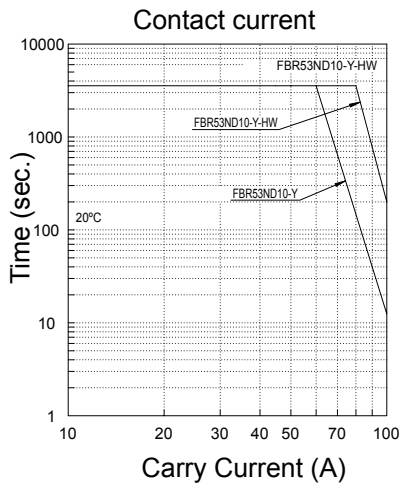
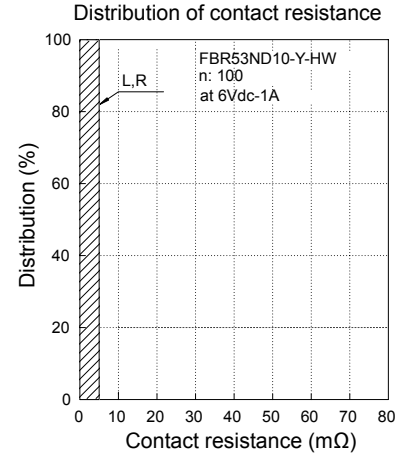
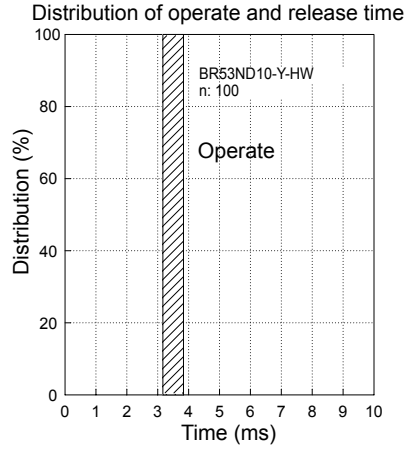
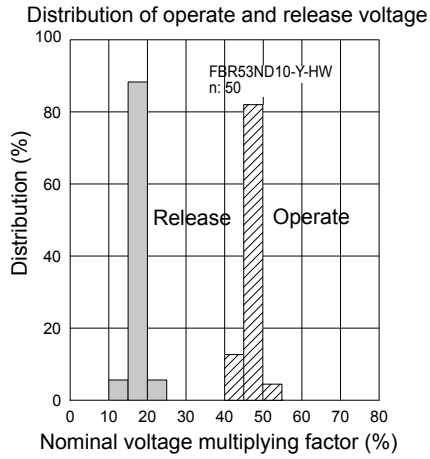
*This is the standard value of the minimum load level. This value may differ depending on the switching frequency, environmental conditions and target reliability standard. We recommend to check this value by an actual load prior to use.

■ 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.

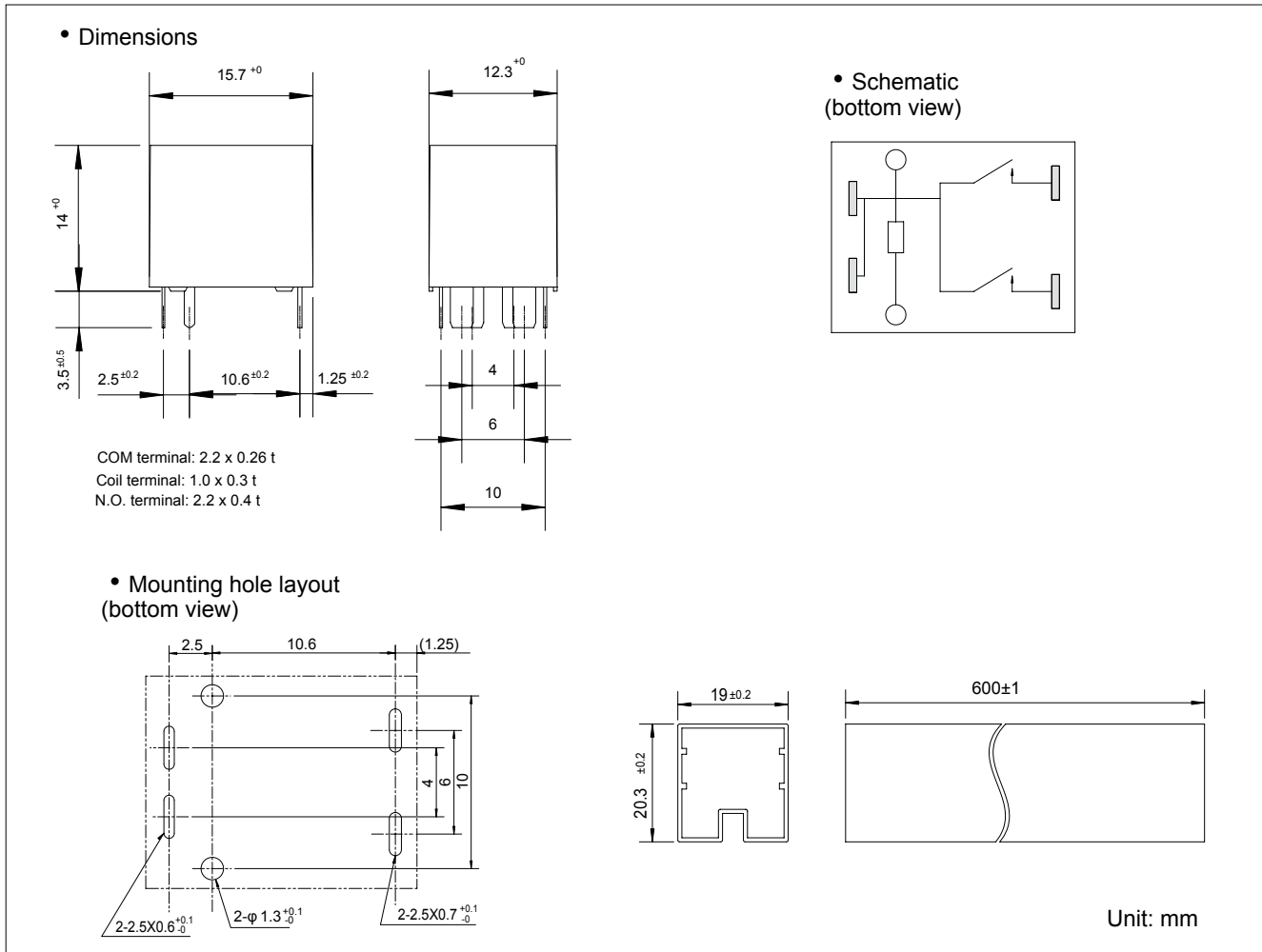
FBR53-HW SERIES

REFERENCE DATA



FBR53-HW SERIES

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