

**Automotive Printed Circuit Board Relays**

**FBR-51/52 RELAY**

25 Amp  
L - 15.5 mm  
W - 12.1 mm  
H - 13.7 mm



**CONTACT DATA**

**Arrangement** - 1 form C (SPDT)

**Material** - Silver-tin oxide indium

**Type** - Single

**Voltage Drop** (Resistance) -Maximum 100 m (at 2 A 12VDC)

**Ratings** (resistive) -14 VDC 20 A (W, W1 type), 14 VDC inrush 20A, break 4 A (motor free load) (N type)  
Max.Carrying Current:35 A / 10 min., 25 A 1hr (25°C, 100% rated coil voltage)  
Max.Inrush Current:60 A (W, W1 type), 40 A (N type)  
Max.Switching Current:35 A 16 VDC  
Min.Switching Load:1A 6 VDC

**Life Expectancy** - Mechanical:10 x 10<sup>6</sup> ops. min.  
Electrical:W:2 x 10<sup>5</sup> ops. min.(14VDC 20 A, locked motor load), W1:2 x 10<sup>5</sup> ops. min. (14VDC 25 A, locked motor load)

**COIL DATA**

**Voltage** (at 20°C) - 9, 10, 12 VDC

**Power** (at 20°C) - 600 mW

**Operate Power** (at 20°C) - 220 mW

**GENERAL DATA**

**Temperature Range** - -40°C to +85°C

**Time Value** - Operate:10 msec. / Release:5 msec.

**Weight** - Approx.6 g

**Enclosure** - Plastic sealed type

FBR 51 Series

Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage (VDC at 20°C)	Thermal Resistance	Ordering Code	
				W contact	W1 Contact
9	135	5.4	73°C/W	FBR51ND09-W	FBR51ND09-W1
10	180	6.3		FBR51ND10-W	FBR51ND10-W1
12	240	7.3		FBR51ND12-W	FBR51ND12-W1

FBR 52 Series

Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage (VDC at 20°C)	Thermal Resistance	Ordering Code	
				W contact	W1 Contact
9	100	5.4	65°C/W	FBR52ND09-W	FBR52ND09-W1
10	135	6.3		FBR52ND10-W	FBR52ND10-W1
12	280	7.3		FBR52ND12-W	FBR52ND12-W1

**FBR-512/522 RELAY**

25 Amp  
L - 24.0 mm  
W - 16.2 mm  
H - 14.1 mm



**CONTACT DATA**

**Arrangement** - 1 form C x 2(SPDT x 2) Twin

**Material** - Silver-tin oxide indium

**Type** - Single

**Voltage Drop** (Resistance) - Maximum 100 mV (at 2 A 12VDC)

**Ratings** (resistive) -14 VDC 20 A (W), 14 VDC 25A (W1)  
Max.Carrying Current:35 A / 10 min., 25 A 1hr (25°C, 100% rated coil voltage)  
Max.Inrush Current:60 A  
Max.Switching Current: 35 A 16 VDC  
Min.Switching Load:1A 6 VDC

**Life Expectancy** - Mechanical:1 x 10<sup>7</sup> ops. min.  
Electrical:W:2 x 10<sup>5</sup> ops. min.(14VDC 20 A, locked motor load), W1:2 x 10<sup>5</sup> ops. min. (14VDC 25 A, locked motor load)

**COIL DATA**

**Voltage** (at 20°C) - 9, 10, 12 VDC

**Power** (at 20°C) - 600 mW

**Operate Power** (at 20°C) - 220 mW

**GENERAL DATA**

**Temperature Range** - -40°C to +85°C

**Time Value** - Operate: 10 msec./ Release:5 msec.

**Weight** - Approx.13 g

**Enclosure** - Plastic sealed type

FBR 512 Series

Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage (VDC at 20°C)	Thermal Resistance	Ordering Code	
				W contact	W1 Contact
9	135	5.4	73°C/W	FBR512ND09-W	FBR512ND09-W1
10	180	6.3		FBR512ND10-W	FBR512ND10-W1
12	240	7.3		FBR512ND12-W	FBR512ND12-W1

FBR 522 Series

Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage (VDC at 20°C)	Thermal Resistance	Ordering Code	
				W contact	W1 Contact
9	100	5.4	65°C/W	FBR522ND09-W	FBR522ND09-W1
10	135	6.3		FBR522ND10-W	FBR522ND10-W1
12	180	7.3		FBR522ND12-W	FBR522ND12-W1

**7**  
**R**  
**E**  
**L**  
**A**  
**Y**  
**S**