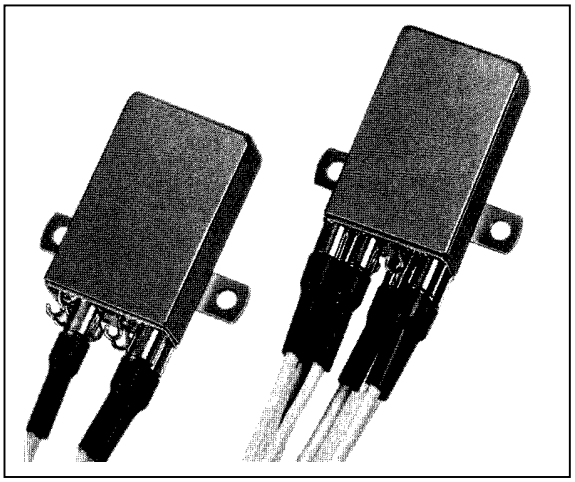
CRYSTAL CAN
RADIO FREQUENCY RELAY
75 WATT, 40 MilliWatts SENSITIVE

Series RFBC

Product Description

This series of coaxial terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding radio frequency applications. The use of 2BC relays in the basic construction, has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions.
The design concepts employed in each of this series have been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.
The following construction features ensure the highest reliability in extreme environments:

- All welded relay construction
- Cleaning and sealing techniques ensures maximum internal cleanliness
- Low level to 2 amperes auxiliary switching
- 1 or 2 form C, RF contacts, special metal alloy with gold plating
- Frame, armature designs and force / mass ratio provides exceptional shock and vibration immunity
- Coax interconnections
- 200 watt RF carry capability
- 75 watt RF switching capability
- Terminated with 6 inches length RG178 cable (or equivalent).



Series Types

- **RFBC** 1 form C, SPDT
- **2RFBC** 2 form C, DPDT

Environmental and Physical Specifications

Temperature (Ambient)	- 65°C to + 125°C
Shock	100 g, 6 ms.
Vibration (sinusoidal)	15 g, 10 to 2000 Hz
Acceleration	30 g
Sealing	All welded, Hermetic

Electrical Characteristics (over the Temperature range. Unless otherwise noted)

Coil Data	See Typical Characteristics chart		
Contact Rating	**Type Load**	**Contact Load**	**Cycles min.**
	Resistive	2 A / 28 Vdc (aux)	100.000
		75 Watts RF Switching, 200 Watts carry (cold switching)	100.000
Contact Resistance	0,05 • max. initial aux. Contact		
Operate Time	15,0 ms. max. at 25°C		
Release Time	3,0 ms. max. at 25°C		
Dielectric Strength	500 Vrms, 60 Hz, all mutually insulated points, at sea level		
Insulation Resistance	1.000 M• min. all points at 500 Vdc		
Sensitivity	40 mW at pick-up, at 25 °C		

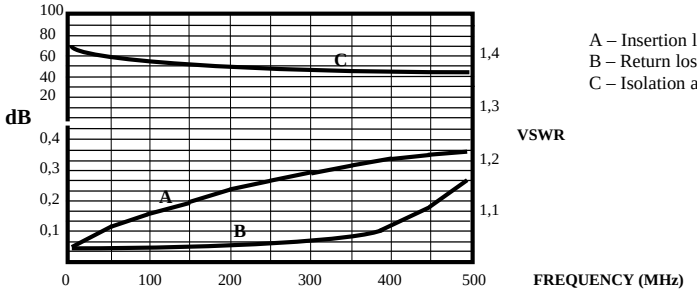
Frequency range	0 to 500 MHz (derated characteristics to 1000 MHz)	
	Typical at 100 MHz	Typical at 500 MHz
Voltage Standing Wave Ratio (VSWR)	< 1,1 : 1	< 1,2 : 1
Insertion Loss	0,16 dB	0,5 dB
Crosstalk	50 dB	40 dB
Power Switching	75 Watts	50 Watts
Power Handling	200 Watts max.	
Characteristic Impedance	50 or 75 • (other impedances available on special order)	

Figure 1 – Radio Frequency Curves

Note:

Typical characteristics are based on factory knowledge. Test to ensure compliance, are not performed.

Values shown are in a 50 • impedance coaxial system.



A – Insertion loss
B – Return loss (VSWR)
C – Isolation across contacts (Crosstalk)

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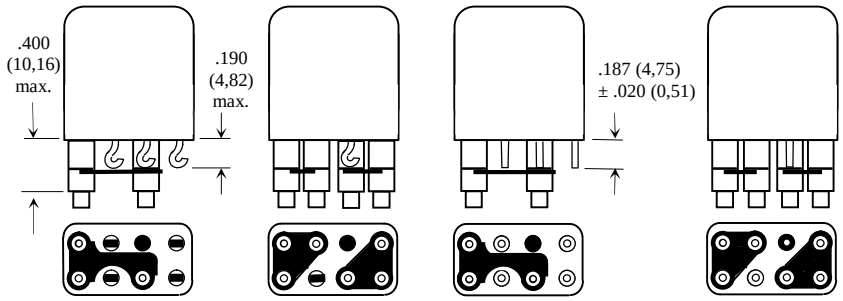
Typical Characteristics

Voltage Code	Coil Resistance ± 10% at 25°C	Nominal Rated Coil		Pick-up mA Max. at 25°C	Drop-out mA Min. at 25°C
		Voltage (Vdc)	Current (mA)		
101	20	1,8	89,2	44,6	4,5
102	30	2,2	73,0	36,5	3,7
103	50	2,8	56,6	28,3	2,8
104	75	3,5	46,2	23,1	2,3
105	100	4,0	40,0	20,0	2,0
106	200	5,7	28,4	14,2	1,4
107	300	7,0	23,0	11,5	1,2
109	500	9,0	17,8	8,9	0,9
112	875	12,0	13,5	6,8	0,7
113	1000	12,6	12,6	6,5	0,6
118	2000	18,0	8,9	4,5	0,5
120	2500	20,0	8,0	4,0	0,4
128	5000	28,0	5,6	2,8	0,3
135	8000	36,0	4,5	2,3	0,2
140	10000	40,0	4,0	2,0	0,2

Terminal Styles

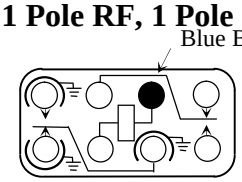


- 1 - **- 2 -**

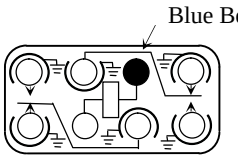
Note:
- Dimensions are shown in inches (millimetres)
- Terminal spacing is .200 (5,08), all headers. Aux. Terminal diameter is .030 (0,76) all headers

Schematic Diagrams

1 Pole RF, 1 Pole aux.

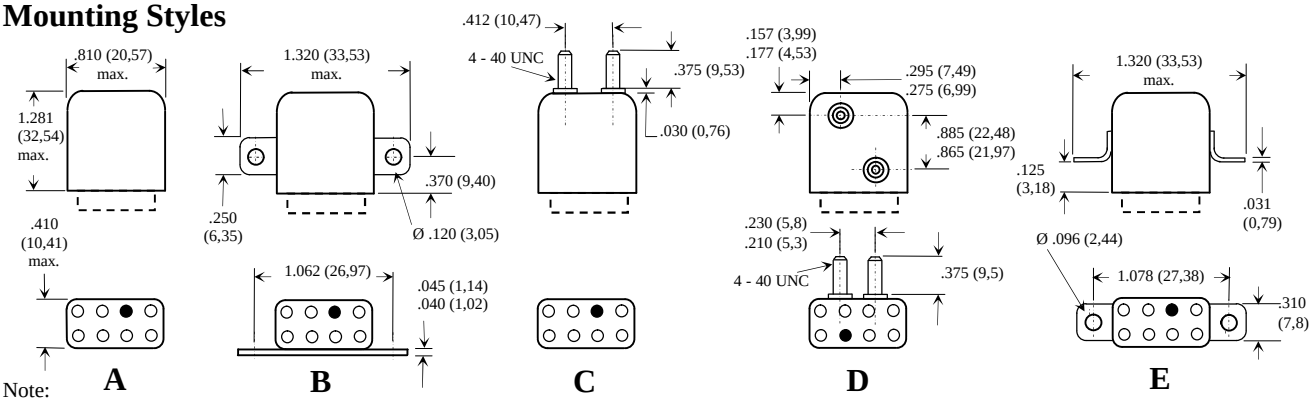


2RF Poles



Note:
- Schematics are viewed from terminals

Mounting Styles



A **B** **C** **D** **E**

Note:
- Dimensions are shown in inches (millimetres)

Note:

Contact factory for other cable types and lengths

How to Order (Part Numbering System)

1 Pole	**RFBC**	**- 2**	**A**	**- 128**	
2 Poles	**2RFBC**	**- 2**	**A**	**- 128**	
Series Type		Terminal Style		Mounting Style	Voltage Code

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