



Band Pass and Band Reject

Fixed Frequency 4-Pole Pair Filters

Description:

The D68BP and D68BR Series of small 4-pole-pair fixed-frequency, precision band-pass and band-reject (notch) active filters that provide high performance in a compact 32-pin DIP package, with a broad range of fixed center frequencies (fo) from 1 Hz to 100 kHz. Each filter type features a near theoretical amplitude/phase response along with low output voltage noise enabling these filters to achieve a 10,000:1 or better dynamic signal range.

Pretuned to within $\pm 2\%$ of the fixed, user specified center frequency, D68BP band-pass filters pass all frequencies lying between the upper and lower -3dB points of the amplitude response curve, while D68BR band-reject (notch) filters sharply attenuate those frequencies that are bound and defined by the bottom of the notch. Available Q's for D68 BP models are 1, 2, 5, or 10 and D68BR filters are 3 or 10.



Features/Benefits:

- Compact 32-pin footprint minimizes board space requirements.
- Plug-in ready-to-use, reducing engineering design and manufacturing cycle time.
- Factory tuned, no external clocks or adjustments needed
- Broad range of center frequencies to meet a wide range of applications.

Applications

- Power line interference rejection
- Transducer output filtering
- Production test instrumentation
- Medical electronics equipment and research
- Comb filtering and equalization
- Noise and harmonic analysis
- RMS measurements
- Frequency spectrum analysis

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Band-Pass & Band-Reject

Fixed Frequency 4-Pole Pair Filters

Model	D68BP4	Model	D68BR4
Product Specifications	Band-Pass	Product Specifications	Band-Reject
Size	1.8" x 0.8" x 0.3"	Size	1.8" x 0.8" x 0.3"
Range f_o	1 Hz to 100 kHz	Range f_o	1 Hz to 100 kHz
Available "Q's"¹	1, 2, 5, 10	Available "Q's"¹	3, 10
"Q" Accuracy	±10 %	"Q" Accuracy	±10 %
Theoretical Transfer Characteristics	Appendix A Pages 41 & 42	Theoretical Transfer Characteristics	Appendix A Pages 43
Pass-Band Gain (non-inverting)	0 ± 0.2 dB typ. 0 ± 0.4 dB max.	Notch Attenuation	45 db typ.
Attenuation Rate	24 dB/octave	Pass-Band Gain (non-inverting)	0 ± 0.2 dB typ. 0 ± 0.4 dB max.
Center Frequency	f_o ±2% max.	Attenuation Rate	24 dB/octave
Stability	±0.01%/°C	Center Frequency	f_o ±2% max.
Filter Mounting Assembly	FMA-01A	Stability	±0.01%/°C
		Filter Mounting Assembly	FMA-01A

1. Q – Quality Factor for band-pass and band-reject filters. $Q = f_o / (f_H - f_L)$ $f_o = \sqrt{f_H f_L}$



Specification (25°C and Vs ±15Vdc)

Pin-Out and Package Data Ordering Information

Analog Input Characteristics¹

Impedance	10 k Ω min.
Voltage Range	± 10 Vpeak
Max. Safe Voltage	±Vs

Analog Output Characteristics

Impedance (Closed Loop)	1 Ω typ. 10 Ω max.
Linear Operating Range	±10V
Maximum Current ²	±2 mA
Offset Voltage ³	2 mV typ. 20 mV max.
Offset Temp. Coeff.	50 μV/°C

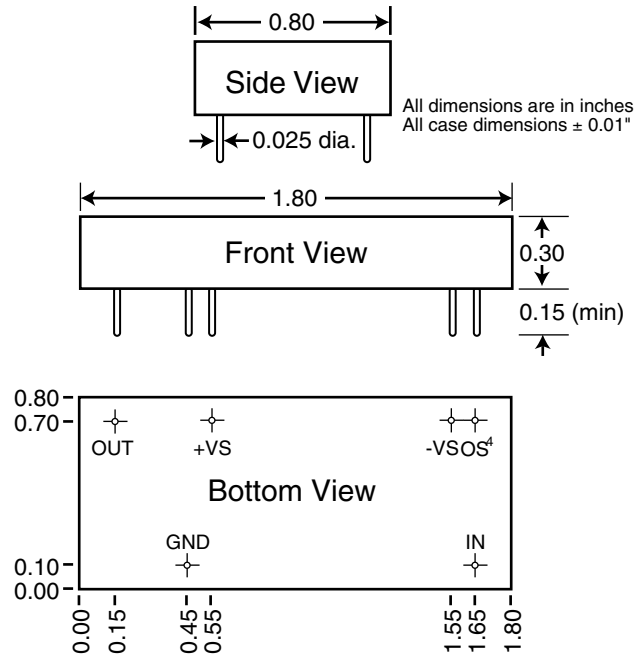
Power Supply (±V)

Rated Voltage	±15 Vdc
Operating Range	±5 to ±18 Vdc
Maximum Safe Voltage	±18 Vdc
Quiescent Current	±25 mA typ. ±40 mA max.

Temperature

Operating	0 to +70°C
Storage	-25 to +85°C

Pin-Out & Package Data



Ordering Information

Filter Type

BP - Band Pass
BR - Band Reject

D68BP4/10-849 Hz

"Q"

BP - 1, 2, 5, 10
BR - 3, 10

(fo) Center Frequency⁵

e.g., 849 Hz
2.50 kHz
33.3 kHz

Notes:

1. Input and output signal voltage referenced to supply common.
2. Output is short circuit protected to common. DO NOT CONNECT TO ±Vs.
3. Adjustable to zero.
4. Units operate with or without offset pin connected.
5. How to Specify Center Frequency:
Center frequencies are specified by attaching a three digit frequency designator to the basic model number. Center frequencies can range from 1.00 Hz to 100 kHz.

