

# 101149C

FB97.5-4.2 4.2 MHz Bandwidth 97.5 MHz Bandpass Filter

## Specifications

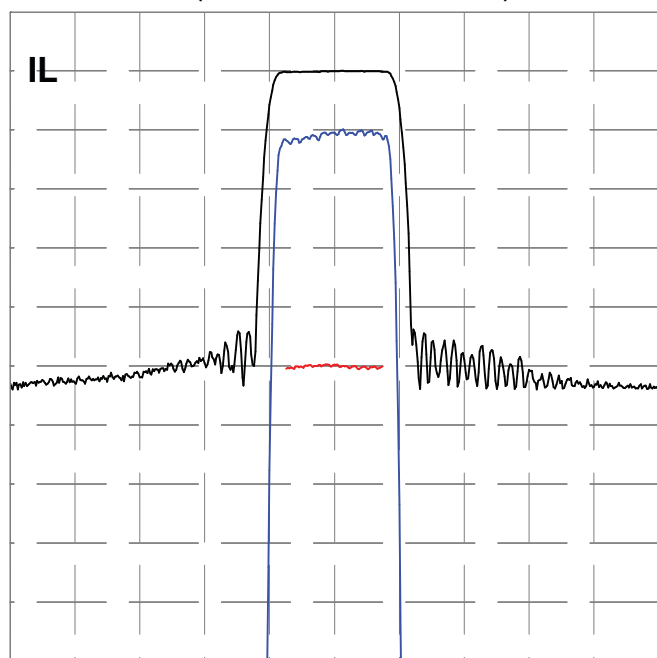
| Parameter                        | Symbol   | Min    | Typical | Max  | Unit               |
|----------------------------------|----------|--------|---------|------|--------------------|
| Center Frequency                 | $F_0$    |        | 97.5    |      | MHz                |
| Bandwidth                        | B        |        | 4.2     |      | MHz                |
| -3dB Bandwidth                   | $B_3$    | 4.7    | 4.8     |      | MHz                |
| -40dB Bandwidth                  | $B_{40}$ |        | 5.9     | 6    | MHz                |
| Delay                            | $T_0$    | 2.82   | 2.825   | 2.84 | $\mu$ sec          |
| Insertion Loss                   | IL       |        | 26.5    | 27   | dB                 |
| Amplitude Ripple                 |          |        | 0.2     | 0.5  | dB <sub>P-P</sub>  |
| Phase Ripple                     |          |        | 0.9     | 1.6  | deg <sub>P-P</sub> |
| Rejection                        |          | 44     | 46      |      | dB                 |
| Spurious for $ t - T_0  > .9T_0$ |          |        | -49     | -44  | dB                 |
| Substrate Material               |          | 38YX-Q |         |      |                    |

## Notes

- Center Frequency ( $F_0$ ) and Bandwidth (B) are defined, not measured.
- Insertion Loss is the minimum loss for  $|f - F_0| < .5B$
- Ripple spec applies to the  $|f - F_0| < .4B$ , and is doubled for  $.4B < |f - F_0| < .5B$
- Rejection spec applies to  $(B_{40} \text{ Spec} - B/2) < |f - F_0| < F_0/2$
- Specifications are at 22 °C only. Unit will operate undamaged from -54 °C to 125 °C with shifts  $dF_0 = -x * F_0$ ,  $dT_0 = x * T_0$ , where  $x = 3E-8 * (\text{temperature} - 22^\circ\text{C})^2$

## Typical Performance

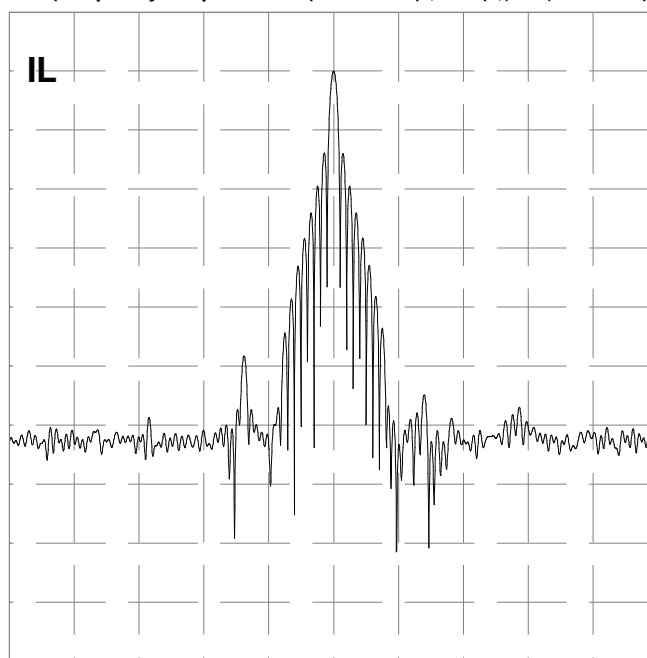
**Frequency Response**  
(Best Fit Linear Phase Removed)



10 dB/div, 1 dB/div, 10 deg/div, 2.500 MHz/div

**Impulse Response**

FFT(Frequency Response \* Cos(0.5 \* PI \* MIN(1, MAX(0, |f - F0| \* 2.0 / B - 1.0))))^2

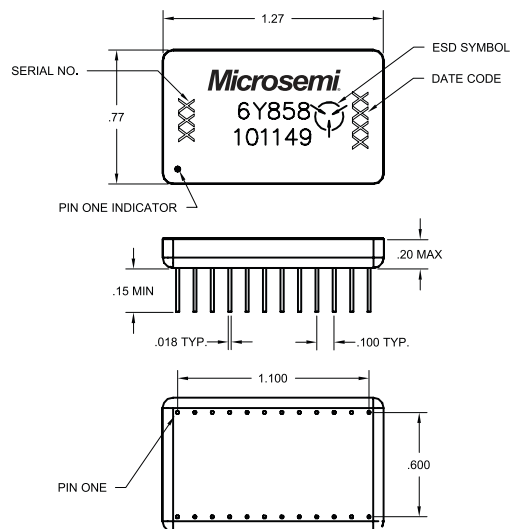


10 dB/div, 2.000 us/div

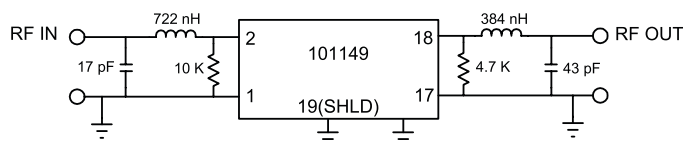
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## Package Outline



## Matching



**Microsemi Corporate Headquarters**  
 One Enterprise, Aliso Viejo, CA 92656 USA  
 Within the USA: +1 (800) 713-4113  
 Outside the USA: +1 (949) 380-6100  
 Fax: +1 (949) 215-4996  
 Email: [sales.support@microsemi.com](mailto:sales.support@microsemi.com)  
[www.microsemi.com](http://www.microsemi.com)

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