

# 101329C

## ID500-5-10W-500 MHz Dispersive Delay Line 5 MHz Bandwidth

### Specifications

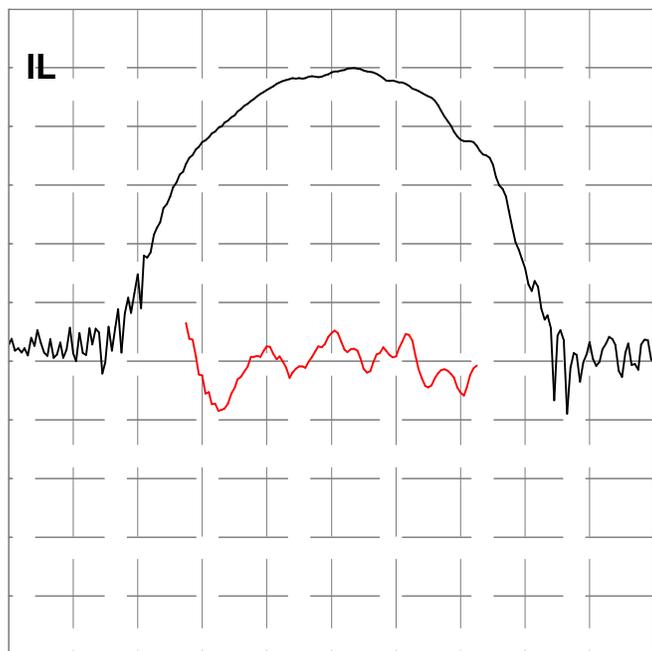
| Parameter                         | Symbol | Min    | Typical | Max   | Unit                     |
|-----------------------------------|--------|--------|---------|-------|--------------------------|
| Center Frequency                  | $F_0$  |        | 500     |       | MHz                      |
| Bandwidth                         | B      |        | 5       |       | MHz                      |
| Dispersion                        | T      |        | 10      |       | $\mu\text{sec}$          |
| Delay                             | $T_0$  | 6.36   | 7.258   | 8.16  | $\mu\text{sec}$          |
| Insertion Loss                    | IL     |        | 26.7    | 34    | dB                       |
| Slope                             | $S_0$  | -2.02  | -2      | -1.97 | $\mu\text{s}/\text{MHz}$ |
| Pulse Width at -3dB               |        |        | 0.228   | 0.237 | $\mu\text{sec}$          |
| Sidelobes for $ t - T_0  < T$     |        |        | -27.6   | -25   | dB                       |
| Time Spurious for $ t - T_0  > T$ |        |        | -57     | -52   | dB                       |
| Substrate Material                |        | 36YX-Q |         |       |                          |

### Notes

- Center Frequency ( $F_0$ ) and Bandwidth (B) are defined, not measured. Dispersion (T) is defined as  $|B * S_0|$ .
- Insertion Loss is the minimum loss for  $|f - F_0| < .5B$
- Delay and Slope determined by best fit quadratic pulse in  $|f - F_0| < .5B$ .
- Specifications are at 22 °C only. Unit will operate undamaged from -54 °C to 125 °C with shifts  $dF_0 = -x * F_0$ ,  $dT_0 = x * (T_0 + S_0 * F_0)$ ,  $dS_0 = x * 2 * S_0$ , where  $x = 3E-8 * (\text{temperature} - 22 \text{ °C})$

### Typical Performance

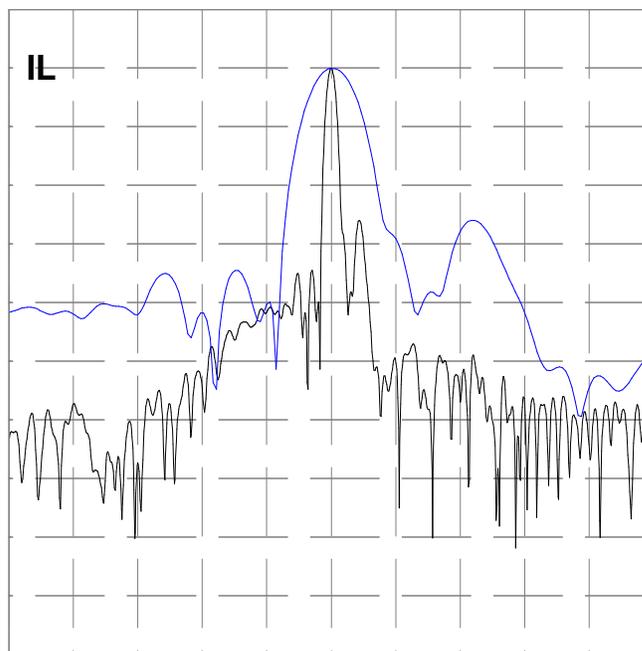
**Frequency Response**  
(Best Fit Quadratic Phase Removed)



10 dB/div, 10 deg/div, 1.000 MHz/div

**Compressed Pulse Response**

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

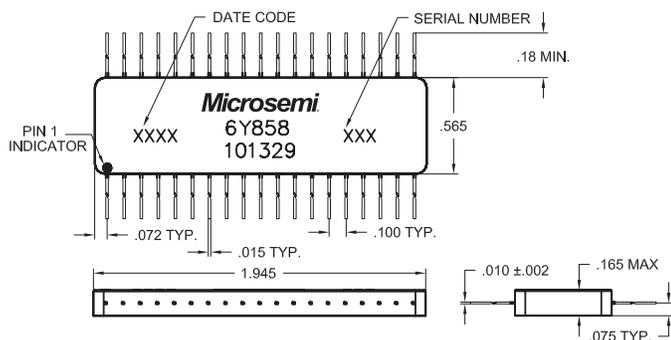


10 dB/div, 2.000  $\mu\text{s}/\text{div}$ , 0.400  $\mu\text{s}/\text{div}$

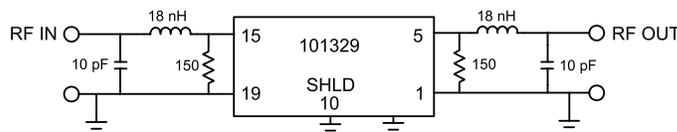
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## Package Outline



## Matching



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