

# COMSTRON

## PSC-4493 SERIES

### LMDS WIRELESS FILTERS



#### FEATURES

- PARAMETRIC CONSTANT DELAY BANDPASS FILTERS
- MINIMIZED PARABOLIC, LINEAR AND RESIDUAL COMPONENTS OF DELAY
- HIGH SELECTIVITY
- SMALL SIZE
- FREQUENCY RANGE 500-5000MHZ

APPLICATION: COMMERCIAL WIRELESS SYSTEMS FOR VOICE/DATA/VIDEO

#### DESCRIPTION

Constant Delay Filters are essential in wireless systems that are transmitting or receiving data at rapid rates in limited bandwidth channels. Here sharp filtering along with constant group delay must be present. To this end, Aeroflex has developed a series of high performance bandpass networks that meet these requirements.

These high performance IF Filters utilize a **constant-delay / sharp attenuation parametric non-minimum phase function polynomial**. The design is based upon minimizing selected coefficients of the power series expansion of the group delay response (linear and parabolic terms) to minimize pulse distortion of the applied signal while providing sharp attenuation characteristics.

# PSC-4493 SERIES

## SPECIFICATIONS PSC-4493-1

CHARACTERISTICS	LIMITS
CENTER FREQUENCY (FC)	1160 MHZ
PASSBAND 380 MHZ	AMPLITUDE FLATNESS <.2 DB/60 MHZ
ATTENUATION AT -310 MHZ FROM FC	> 15 DB
ATTENUATION AT +290 MHZ FROM FC	>15 DB
ATTENUATION AT +590 MHZ FROM FC	>70DB
ULTIMATE ATTENUATION	>70 DB TO 3000MHZ
INSERTION LOSS AT FC	4 DB MAXIMUM
PASSBAND RETURN LOSS	15 DB MINIMUM (IN/OUT)
PASSBAND GROUP DELAY	100 PS MAXIMUM
MAXIMUM LINEAR DELAY COEFFICIENT OVER PASSBAND	< 8 PS/MHZ OVER ANY 60 MHZ
MAXIMUM PARABOLIC DELAY COEFFICIENT OVER PASSBAND	<.1 PS/MHZ <sup>2</sup> OVER ANY 60 MHZ
RESIDUAL DELAY OVER PASSBAND	<500 PS OVER ANY 60 MHZ

## RESPONSE CURVES PSC-4493-1

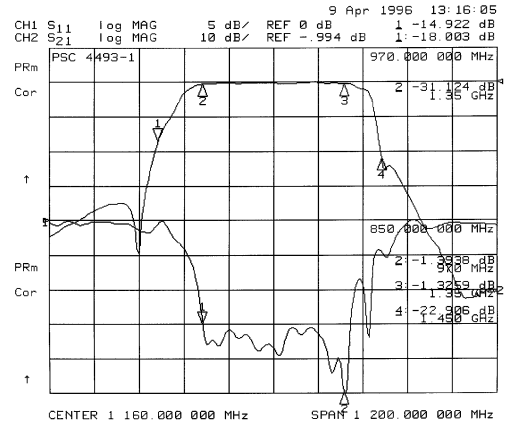


Figure 1: Overall Response

## OUTLINE DRAWING PSC-4493-1

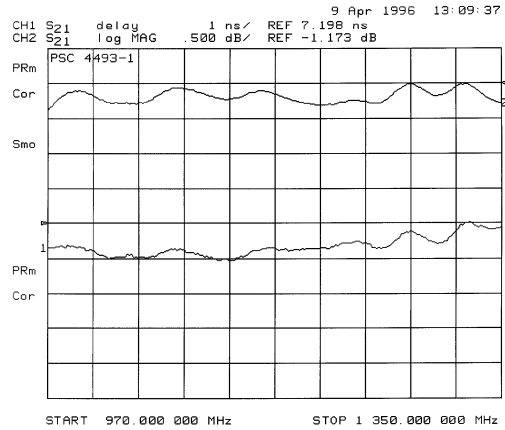
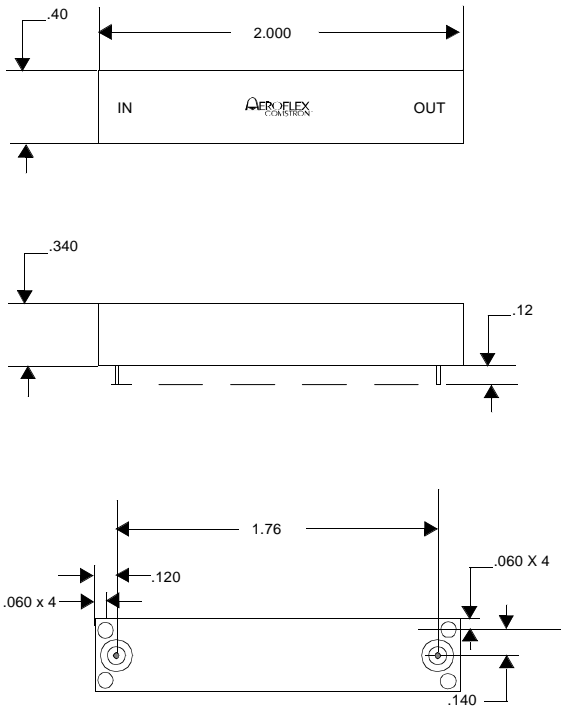


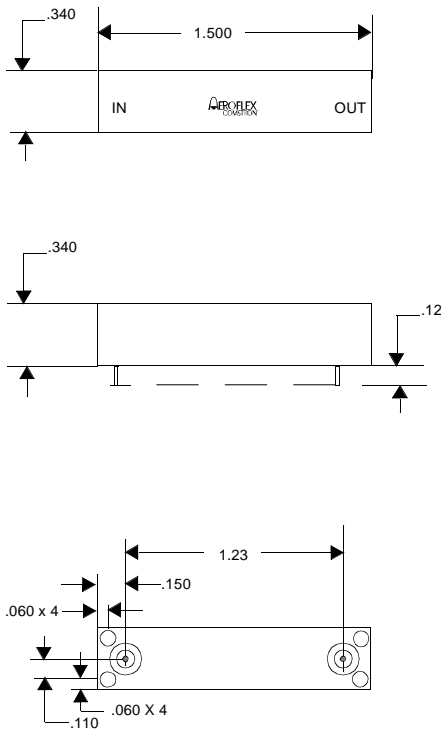
Figure 2: Passband Response

# PSC-4493 SERIES

## SPECIFICATIONS PSC-4493-2

CHARACTERISTICS	LIMITS
CENTER FREQUENCY (FC)	780 MHZ
PASSBAND 40 MHZ	AMPLITUDE FLATNESS <.1 DB
ATTENUATION AT -70 MHZ FROM FC	> 10 DB
ATTENUATION AT +70 MHZ FROM FC	>45 DB
ATTENUATION AT +140 MHZ FROM FC	>55 DB
ULTIMATE ATTENUATION	>70 DB TO 4000MHZ
INSERTION LOSS AT FC	5 DB MAXIMUM
PASSBAND RETURN LOSS	15 DB MINIMUM (IN/OUT)
PASSBAND GROUP DELAY	500 PS MAXIMUM
MAXIMUM LINEAR DELAY COEFFICIENT OVER PASSBAND	< 8 PS/MHZ
MAXIMUM PARABOLIC DELAY COEFFICIENT OVER PASSBAND	<2.5 PS/MHZ <sup>2</sup>
RESIDUAL DELAY OVER PASSBAND	<500 PS

## OUTLINE DRAWING PSC-4493-2



## RESPONSE CURVES PSC-4493-1

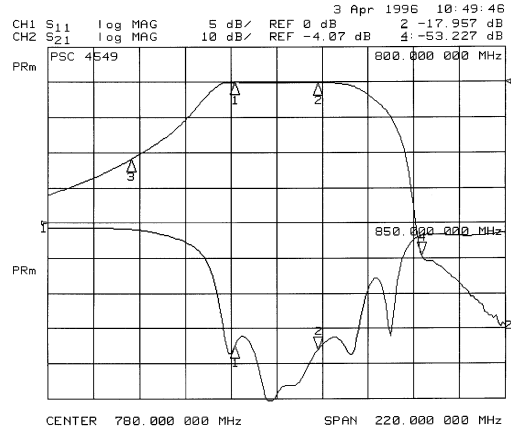


Figure 3: Overall Response

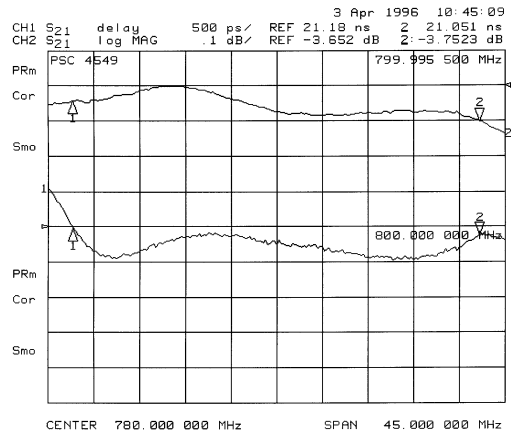
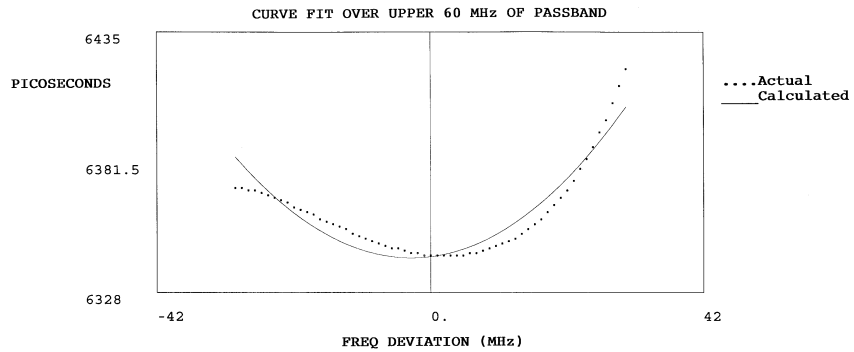


Figure 4: Passband Response

# PSC-4493 SERIES

## CURVE FIT - 4493-1



Sum Of Root Mean Square Error  
-----  
42.592367368894800000000000

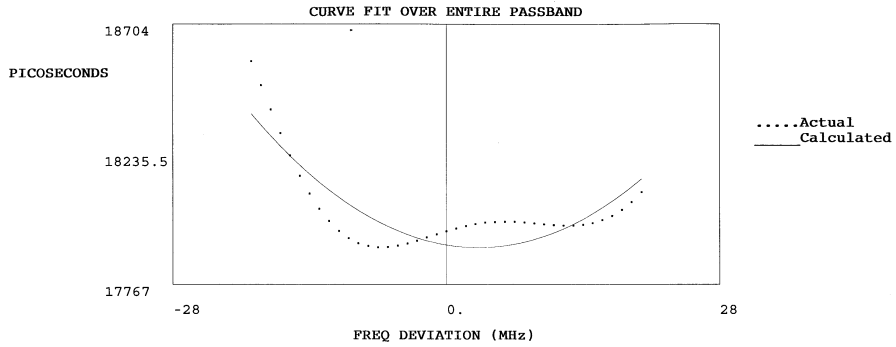
Coefficients - Calculated  
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X <sup>0</sup>	6342.497360377880000000000000
X <sup>1</sup>	0.342728714965627000000000
X <sup>2</sup>	0.057359123053894900000000

Specification Units  
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<8	ps/MHz
<.1	ps/MHz <sup>2</sup>

## CURVE FIT - 4493-2



Sum Of Root Mean Square Error  
-----  
495.295457292436000000000000

Coefficients - Calculated  
-----

X <sup>0</sup>	17909.209913172500000000000000
X <sup>1</sup>	-5.849477351916380000000000
X <sup>2</sup>	0.888570306607738000000000

Specification Limits  
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<8	ps/MHz
<2.5	ps/MHz <sup>2</sup>



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