

46 MHz Bandpass Filter / Electronic Neural Loop™

Release Date: March 2013 Revision: ENL v4 Package Type: PCB Prototype Board

PCB ENL v4 Evaluation Platform Specification Sheet

Parameters Description	Min	Typical	Max
Center Frequency (f ₀)		46 MHz	
Bandwidth		8 MHz	10 MHz
Quality Factor		5.75	4.6
Insertion Loss (f $_0 \pm 5$ MHz)		19.8 dB	22 dB
Amplitude Ripple ($f_0 \pm 5$ MHz)		0.2 dB	0.5 dB
Group Delay ($f_0 \pm 5 \text{ MHz}$)		2.0 ns	
Attenuation (bandpass region)			
10 – 30 MHz	10 dB	14 dB	28 dB
60 – 100 MHz	10 dB	16 dB	24 dB



Figure 1. PCB ENL v4 evaluation platform. Center resonant frequency selected via transmission line characteristics.

Parameters Description	Min	Typical	Max
Operating Temperature Range	-40°C	-	+85°C
Storage Temperature Range	-	-	-
Maximum DC Voltage	-	-	0 V
Maximum Input Power	-	-	0 dBm
Source Impedance		50 Ω	
Load Impedance		50 Ω	



Figure 2. PCB ENL v4 evaluation platform schematic layout.

About Electronic Neural Loops:

ENL operation is based on a novel resonant feedback architecture, which allows the detection of Fourier frequency components.

The PCB ENL v4 Prototype is a proof-ofconcept evaluation platform capable of being adapted to frequencies ranging from 10 MHz to 500 MHz.

Application Type:

FOR EVALUATION PURPOSES ONLY

Center frequencies can be selected by varying the length L of the transmission lines:

$$f_0 = (1/4) \bullet (v/L)$$

where v is the speed of electronic transmission for the specific wire type.



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Frequency Response:

