

Specifications



FEATURES

Netcom's 5583 is a digitally tunable filter covering the frequency range of 30 to 90MHz.

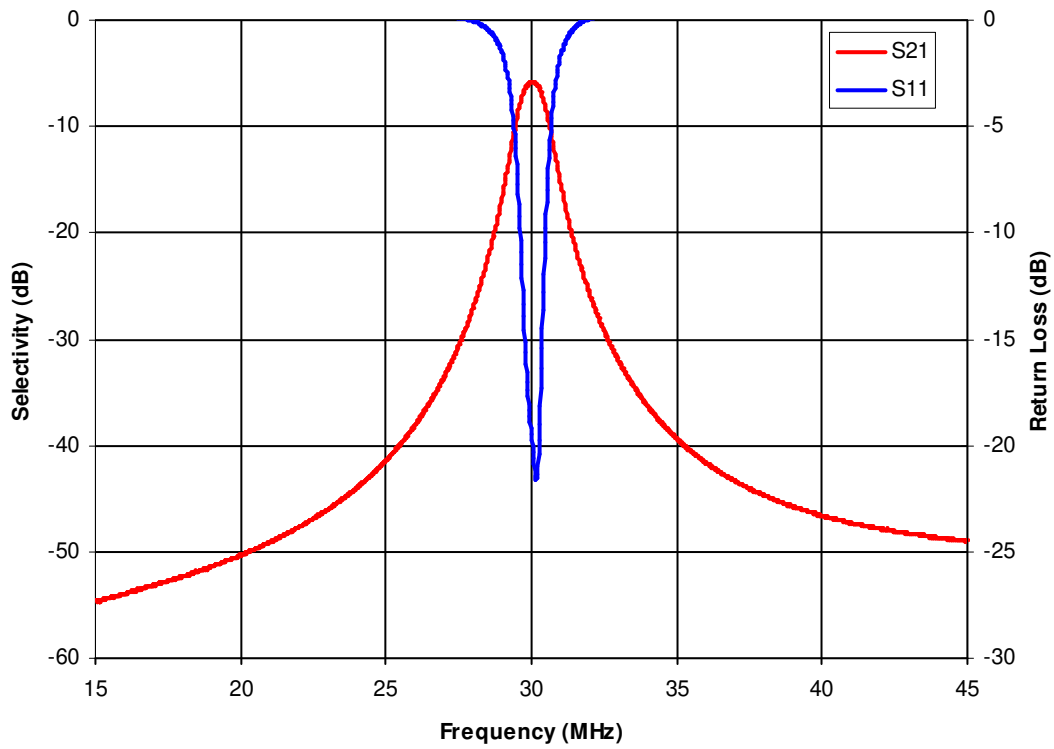
The filter has been designed using new commercially available high voltage drivers and a new generation CPLD, which allows for improved performance and reduced cost while at the same time providing increased functionality. A control interference is provided to accept either parallel data and strobe or serial data, clock and strobe. The filter incorporates high voltage totem-pole drivers for the PIN diode bias voltage to minimize current draw from the 100 VDC supply.

The following table shows the typical performance of the filter at different 3dB bandwidths. Options are available upon request for different bandwidth and frequency range.

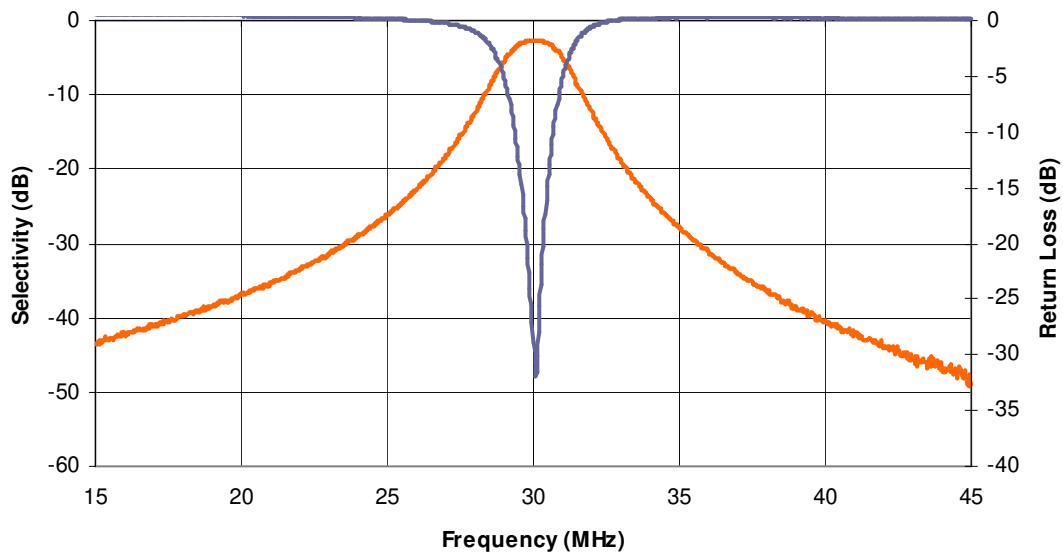
Frequency Range	30 to 90 MHz		
Available BW	3%	5%	7%
*Ftune +/- 10% Selectivity (Typical)	-28	-20	-16
*Ftune +/- 15% Selectivity (Typical)	-34	-26	-22
*Ftune +/- 20% Selectivity (Typical)	-39	-31	-27
Insertion Loss (Typical - dB)	5.5 dB	4.0 dB	2.5 dB
Selectivity +/- 10MHz (dBc)	<-27	<-20	<-15
Selectivity 2x f0 (dBc)	<-58	<-55	<-48
Impedance (Input /Output)	50 Ω		
Shape Factor	Min	Typ	Max
Shape Factor Overall	5.6	-	7.0
Shape Factor Low Side	5.6	-	7.0
Shape Factor High Side	5.6	-	6.5
Switching Speed, 90% RF Power	< 30 μs		
Tuning Channels	250		
P1dB	+30 dBm		
IIP3	+40 dBm		
Noise Figure	< 1dB below IL		
Max Strobe Rate	1 KHz		
Center Drift Freq (ppm/°C)	80		
DC Inputs			
+5 Volts (±0.25 Volts)	250 mA		
+100 Volts (-7, +25 Volts)	0.2 mA		
Operating Temperature Range	-40 to +85°C		
Control Interface	- Parallel Interface		
Dimensions [L x W x H]	2.30 x 1.40 x 0.55 inches 58.42 x 35.56 x 13.97 mm		

Performance at 30 and 90MHz

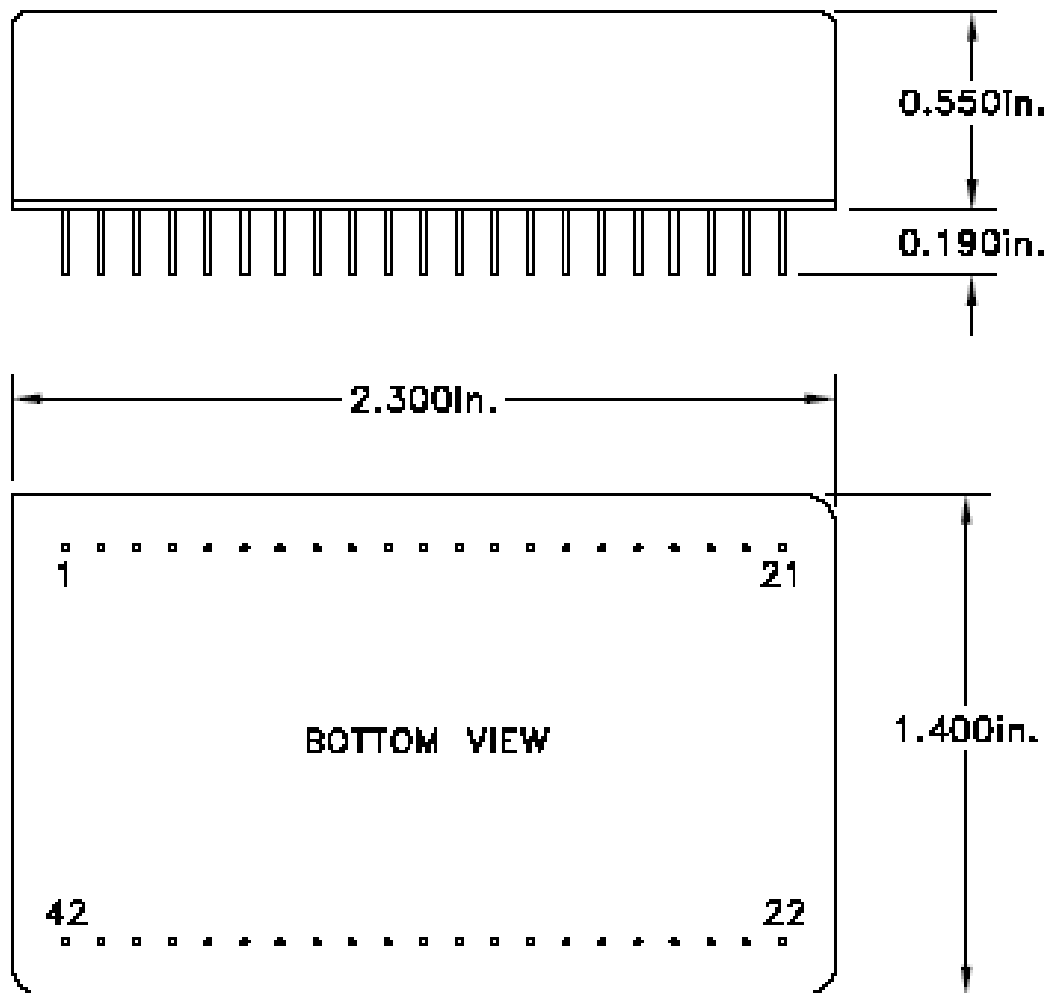
Model 5583 - 30 to 90 MHz, 3% BW at 30 MHz



Model 5583 - 30 to 90 MHz, 7% BW at 30 MHz



Mechanical



Ordering Information

Model Number	(-)	Bandwidth	(-)	Options	Add "-EB" for Unit Mounted on Evaluation Board	
5583	(-)		(-)		(-)	EB

Options:

Available Bandwidths

*Options available upon request

Bandwidth options are available in increments of 1% step size up to 7%

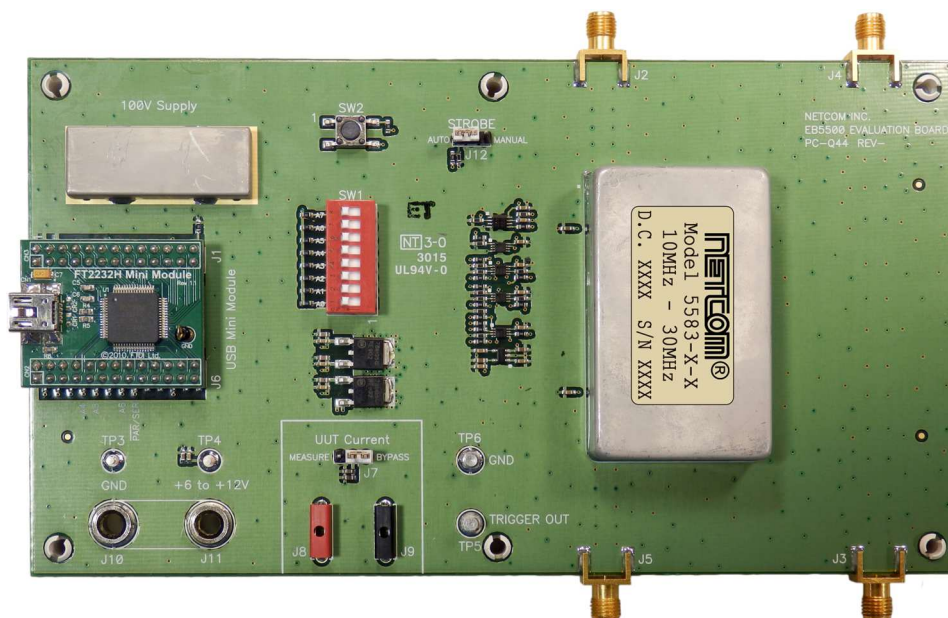
Corresponding Evaluation Board

The EB5500 Evaluation Board is designed to test and evaluate Netcom's 5583 tunable filters. The evaluation board is used to supply power to the filter, provide tuning control of the filter, and facilitate measurement of the filter's RF parameters, switching speed and power consumption.

Pertinent tunable bandpass filters can be tuned over their frequency range using a binary switched capacitor tuning table with fixed inductors to provide the resonators, coupling and impedance matching.

The switching element is a PIN diode powered by an external nominal 100VDC supply voltage.

Tuning control of the filter is provided by the EB5500 Evaluation Board in the form of frequency words. The EB5500 uses a new USB input and user interface program to provide the frequency tuning control for the EB5500 Evaluation Board. The EB5500 Evaluation Board includes a separate RF thru path for calibration of test equipment to improve the accuracy of the RF measurements of the filter.



*Filter shown for illustrative purposes.