SAX103-E1

[225 – 520] MHz Tunable Bandpass Filter

Application

The SAX103-E1 electronically tunable bandpass filter is designed for Tactical Communications Applications using binary weighted digital tunable capacitor arrays to cover greater than an octave bandwidth.

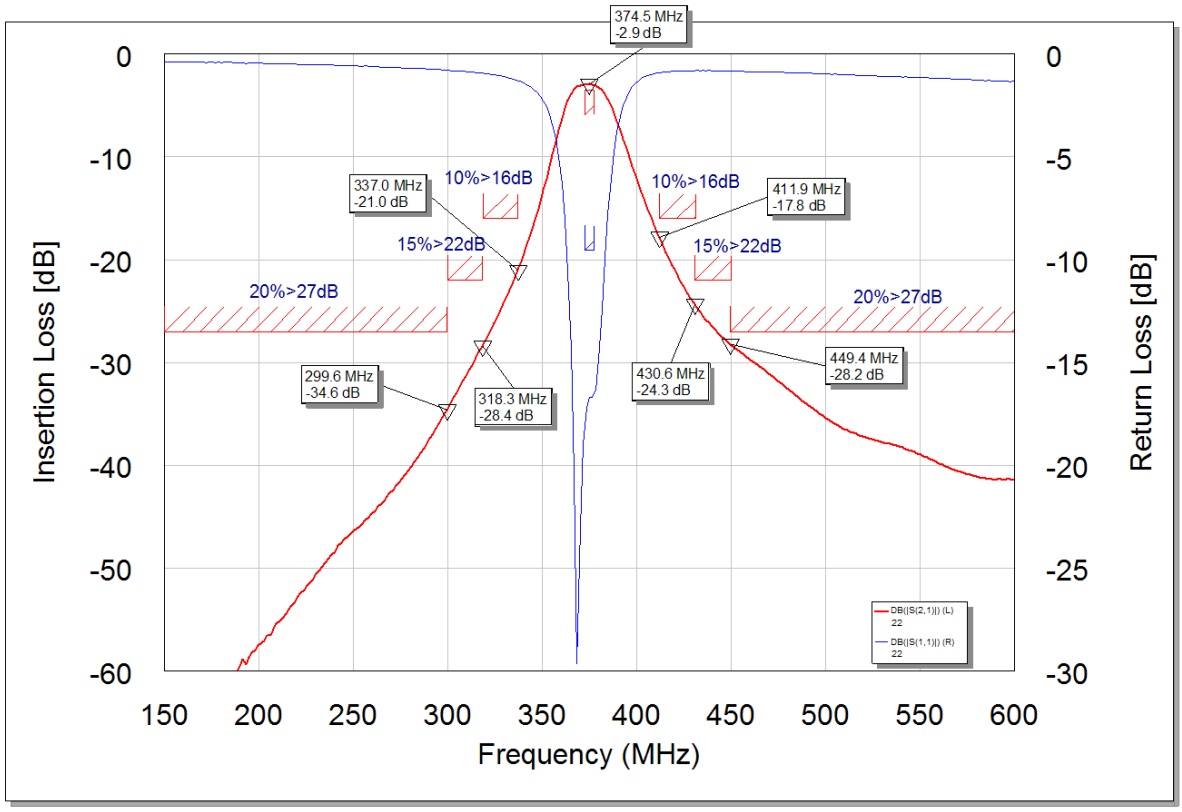
Features

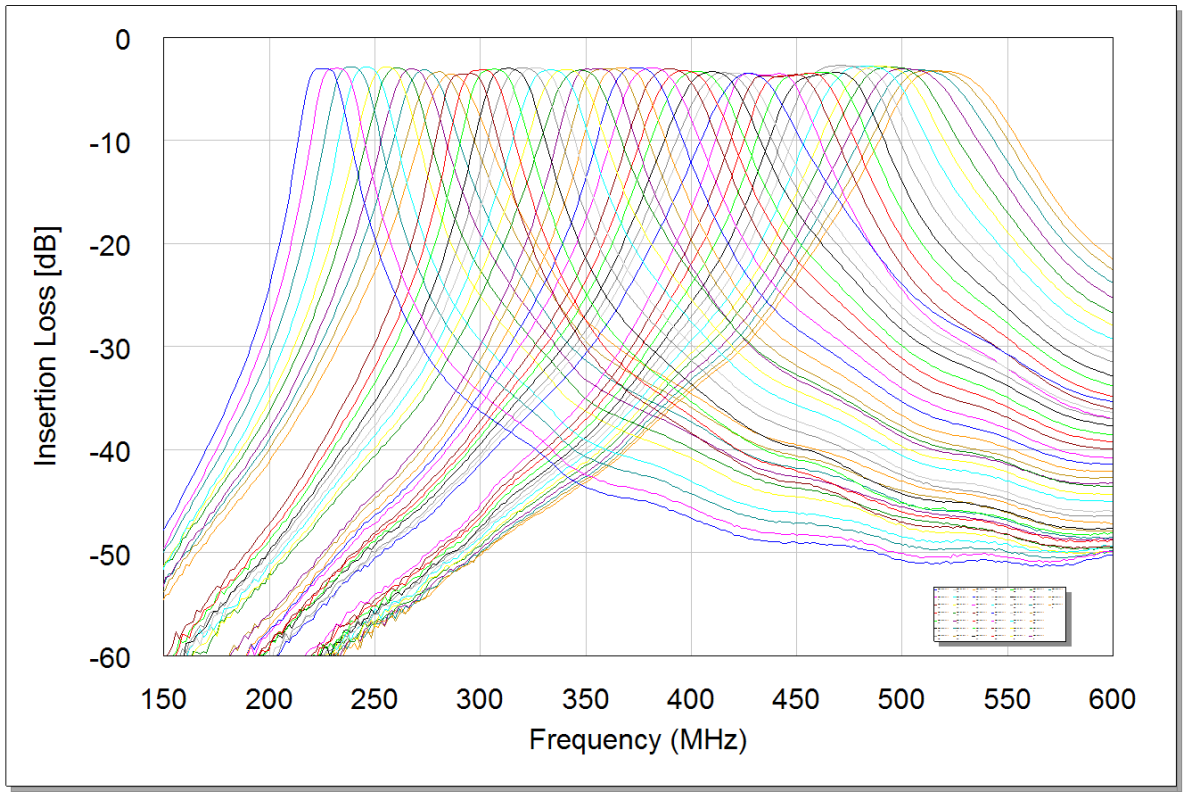
- Full Tactical Communications band resolutions
- Low insertion loss
- Fast tuning across band to 0.59 MHz resolution
- 9-bit digital control
- Custom designs and specification levels available

Operating Conditions

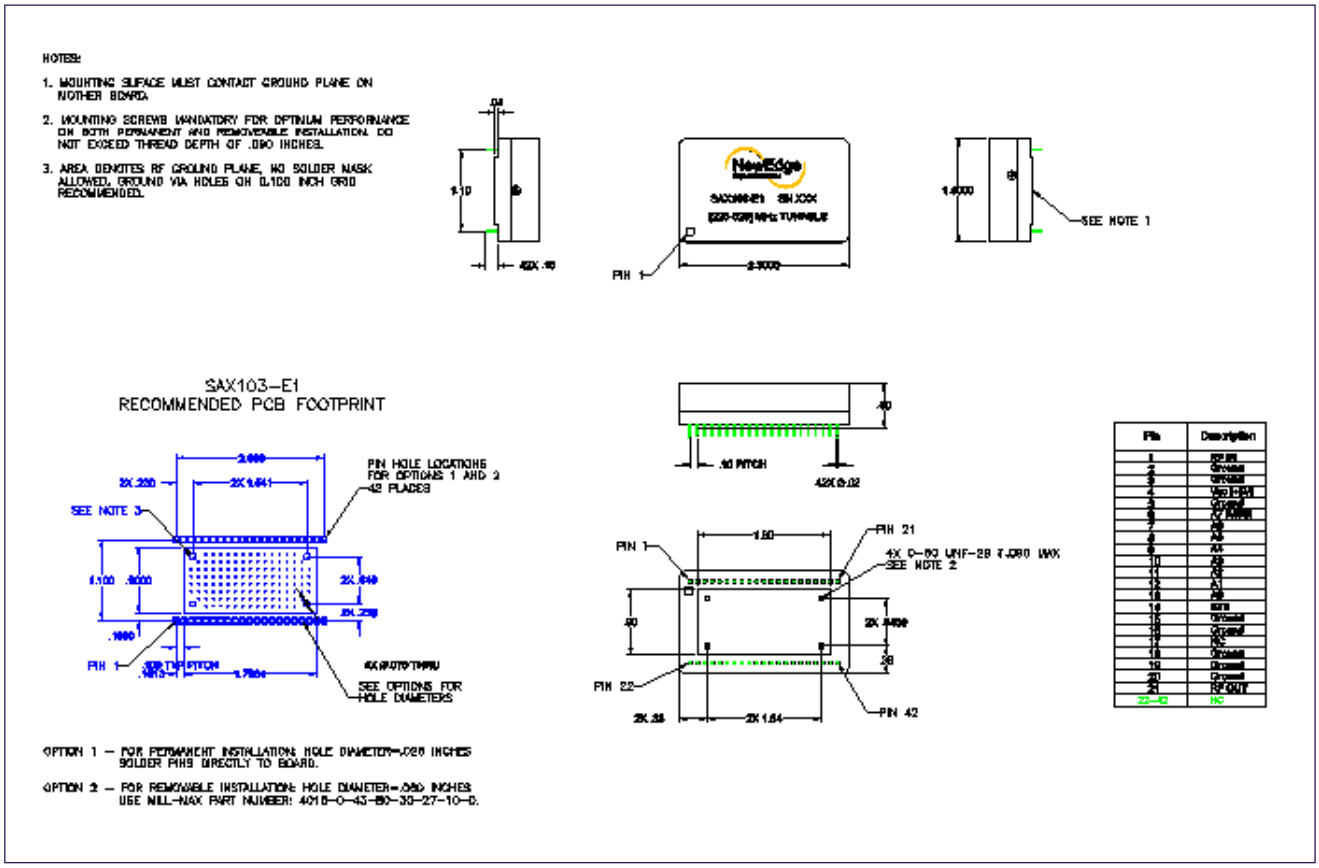
Parameter	Specification	Min	Typ	Max	Units
Supply Voltage	-	+4.9	+5.0	+5.1	V
Supply Current	-	-	110	260	mA
Tunable Frequency Range	-	225	-	520	MHz
Input / Output Impedance	-	-	50	-	Ohms
Return Loss	[225-520] MHz	9.54	13.98	-	dB
Insertion Loss	[225-520] MHz	-	2.7	3.5	dB
3dB Bandwidth	-	-	5	-	%
Rejection	Fc +/- 10%	-	16	-	dB
	Fc +/- 15%	-	22	-	dB
	Fc +/- 20%	-	26	-	dB
	30 MHz to < 0.5*Ftune	38	-	-	dB
	2*Ftune to 750 MHz	35	-	-	dB
	[750 – 1200] MHz	25	-	-	-
	[1200 – 2000] MHz	15	-	-	-
Tuning Control	9 BIT Parallel	-	-	-	-
Tuning Speed	-	-	30	-	µs
Tuning Step Size	[225-520] MHz	-	0.59	-	MHz
Strobe Rate	-	-	-	2	KHz
Strobe Pulse Width	-	-	20	-	ns
P1dB Input Power	[225-520] MHz	-	-	33	dBm
Operating Temperature	-	-40	-	+85	C
Tuning Algorithm	Tune Word = [(Ftune-225) / 0.59]	-	-	-	-

TEST DATA





Mechanical	**Size**	[2.3 x 1.4 x 0.6] inch
	Pin Diameter	20 mil
	Pin Length	0.15 inch max.



Pin No.	Label	Description, Conditions
1	RF IN	RF In
2, 3, 15, 16, 18, 19, 20	GND	Ground
4	VCC [+5V]	+5V Digital Supply Voltage
5, 6, 7, 8, 9, 10, 11, 12, 13	A8, A7, A6, A5, A4, A3, A2, A1, A0	9 BIT Parallel Control, A8 MSB, A0 LSB
14	STB	When the STB is taken Low, data is ready to be sent on A8-A0. When the STB is transitioning High, the MSB of the parallel Data is latched. STB should be taken Low again while the LSB is loaded on the data port. When the STB is transitioning High for the second time, the LSB of the parallel Data is latched and the filter commanded to the frequency specified by the parallel data interface.
17, 22 - 42	NC	No Connection. Internal Use Only
21	RF OUT	RF Out

Disclaimer

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