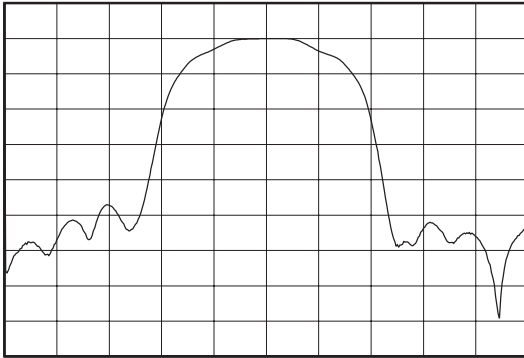
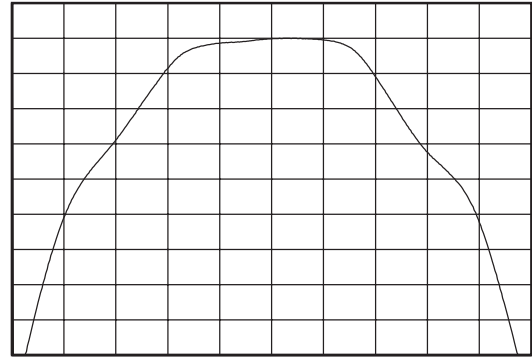


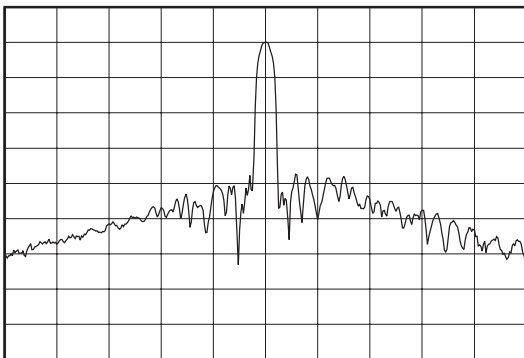
**Typical Performance**



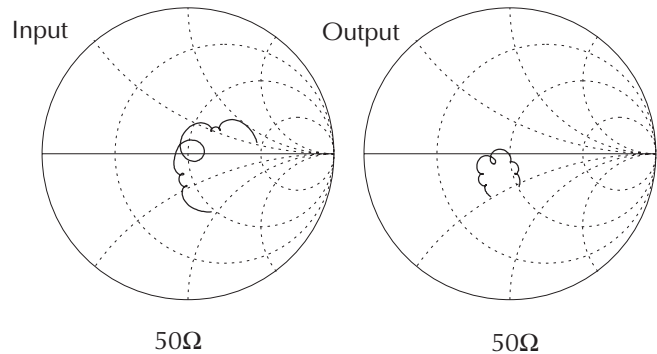
Horizontal: 500 kHz/Div  
Vertical: 8 dB/Div



Horizontal: 180 kHz/Div  
Vertical: 1 dB/Div



Horizontal: 5 MHz / Div  
Vertical: 10 dB / Div



**Specifications**

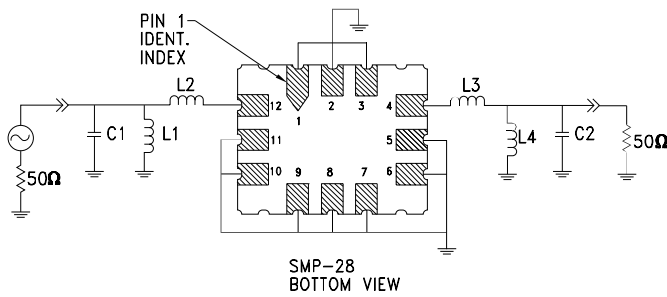
Parameter	Unit	Minimum	Typical	Maximum
Center Frequency, $f_0$	MHz	-	210.38	-
Insertion Loss	dB	-	7.2	9
5 dB Lower Frequency	MHz	-	209.7	209.75
5 dB Upper Frequency	MHz	211.01	211.1	-
33 dB Lower Frequency	MHz	209.13	209.26	-
33 dB Upper Frequency	MHz	-	211.51	211.63
Attenuation at 209.13 MHz	dB	33	42	-
Attenuation at 211.63MHz	dB	33	48	-
Attenuation at 208.33 MHz	dB	33	43	-
Attenuation at 212.43 MHz	dB	33	40	-
Amplitude Variation over the $f_0 \pm .300$ MHz	dB p-p	-	0.5	1.2
Phase Ripple over the $f_0 \pm .615$ MHz	deg rms	-	2	3.5
Ultimate Rejection	dB	40	50	-
Substrate Material	-	-	Quartz	-
Operating Temperature Range	°C	-30	25	80
Storage Temperature Range	°C	-55	25	125

**Notes**

- (1) Sawtek's production specifications reflect the typical performance in a 50 ohm single-ended system. Similar performance can be achieved in source and load impedances ranging from 50 to 1000 ohms.
- (2) The typical insertion loss may vary slightly depending on actual source and load impedances, matching configuration and PC board layout.
- (3) Inductors with  $\pm 2\%$  tolerance may be required.
- (4) In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature.

**Matching Configurations**

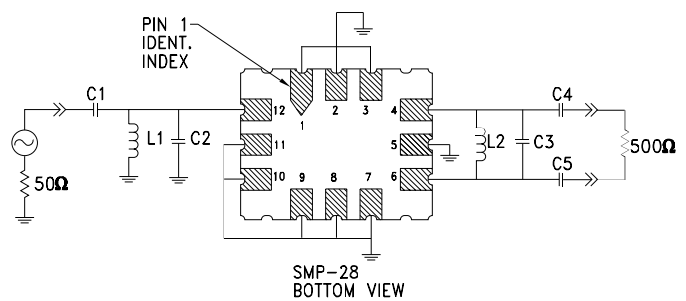
**50Ω Single-ended**



L1 = 12 nH, L2 = 39 nH, L3 = 30 nH,  
L4 = 12 nH, C1 = TBD, C2 = TBD

A trimmer Capacitor may be needed for L1 & L4  
depending on PCB parasitics

**50Ω Single-ended / 500Ω Balanced**

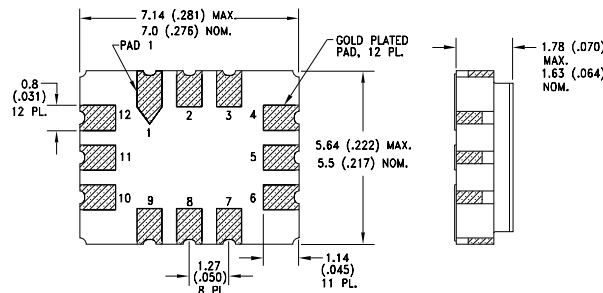


L1 = 40 nH, L2 = 45 nH, C1 = 3.8 pf  
C2 = TBD, C3 = TBD, C4 = 4.2 pf, C5 = 4.2 pf

A trimmer Capacitor may be needed for L1 & L2  
depending on PCB parasitics

**Package Outline**

**SMP-28B**



Dimensions shown are in millimeters (inches).