



- **Low Insertion Loss**
- **Excellent Selectivity**
- **Hermetic 13.3 X 6.5 mm Surface-mount Case**
- **Single-ended Input and Output**
- **Complies with Directive 2002/95/EC (RoHS)**

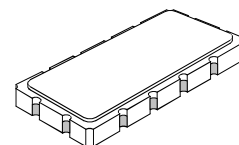


Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage Between any 2 Terminals	30	VDC
Storage Temperature Range	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260°C for 30 s	

PX1004-1

**82.2 MHz
SAW Filter**



SM13365-12

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_c	1	82.20			MHz
Passband Insertion Loss at f_c	IL	1, 2		3.0	5.5	dB
3 dB Passband	BW ₃		±25	±42		kHz
Amplitude Ripple over f_c ±15 kHz					1.0	dB _{p-p}
Group Delay Variation over f_c ±17 kHz	GDV				6.0	µs _{p-p}
Third-Order Intermod. for -20 dBm tones at f_c ±100 & 200 kHz					-95	dBm
Rejection f_c ±100 kHz		1, 2, 3	11	16		dB
f_c -1500 kHz to f_c -1600 kHz			65			
Ultimate				65		
Operating Temperature Range	T _A	1	-20		+70	°C

Impedance Matching to 50 Ω unbalanced	External L-C
Case Style	SM13365-12 13.3 X 6.5 mm Nominal Footprint
Lid Symbolization (YY=year, WW=week) See note 4	RFM PX1004-1 YYWW

Electrical Connections

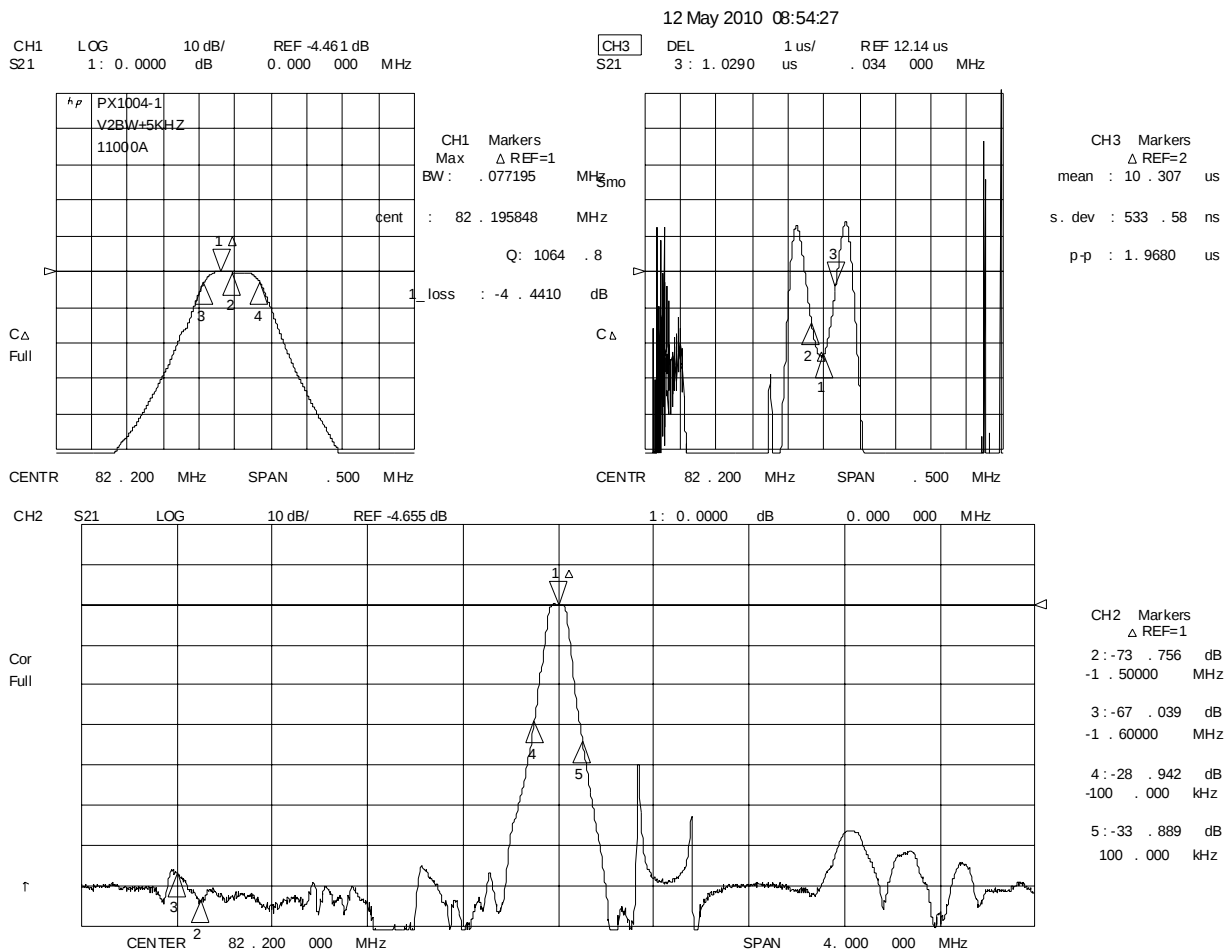
Connection	Terminals
Port 1 Hot	2
Port 1 Gnd Return	3
Port 2 Hot	8
Port 2 Gnd Return	9
Case Ground	All Others

Notes:

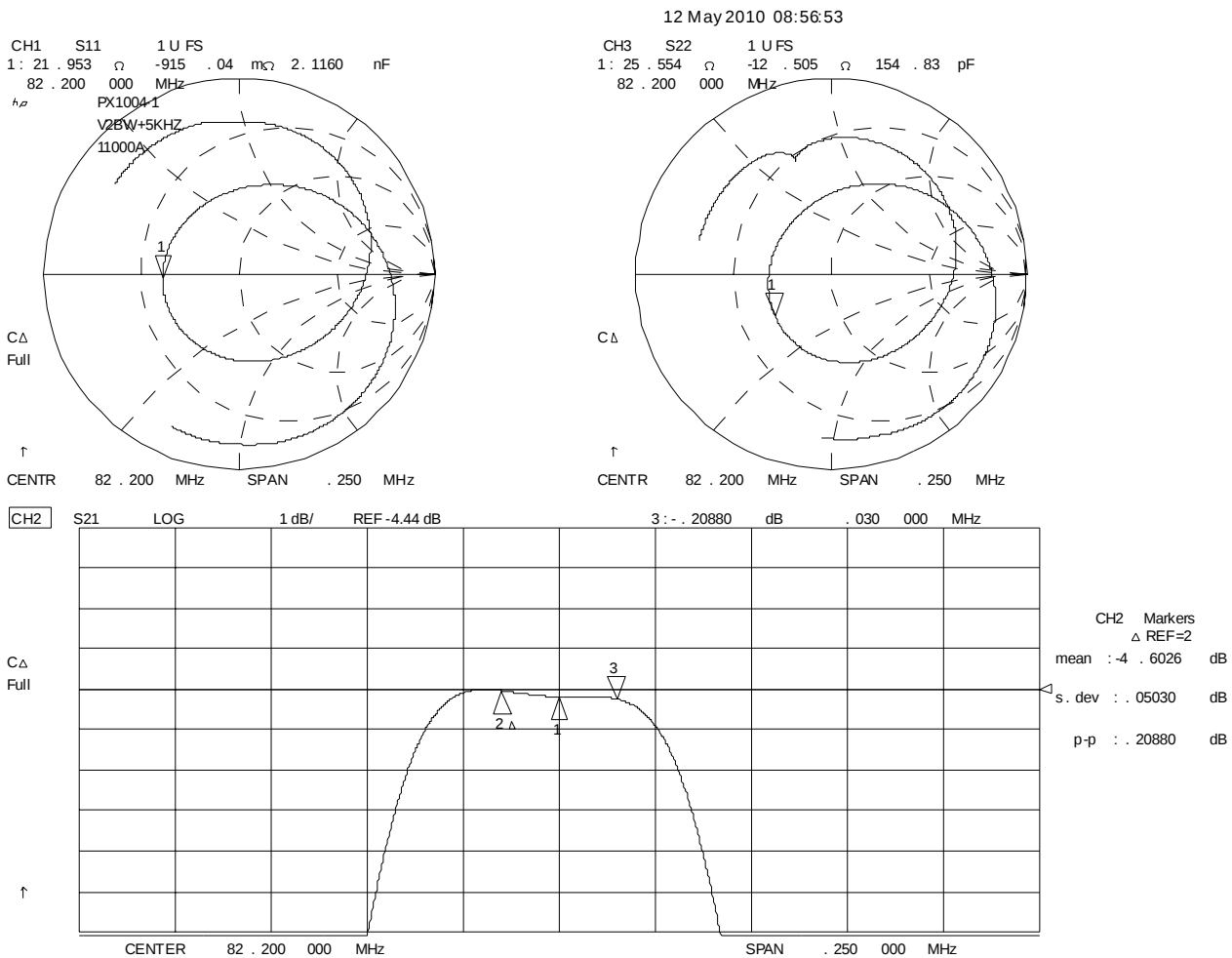
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, f_c .
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.
8. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
9. Electrostatic Sensitive Device. Observe precautions for handling.



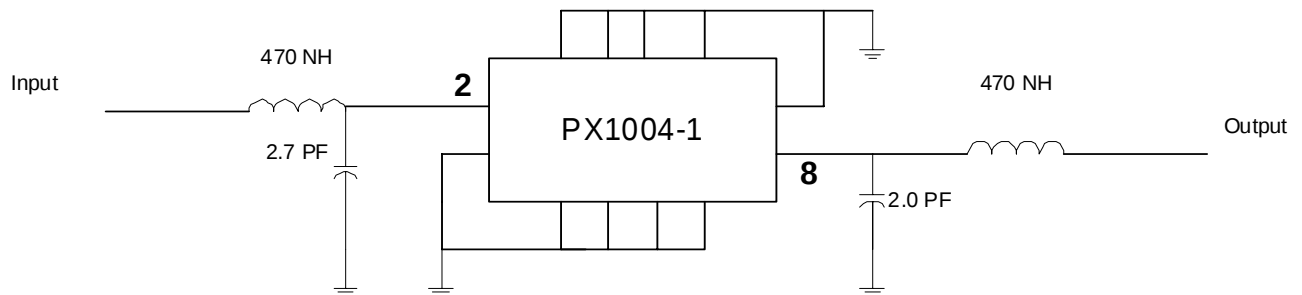
Amplitude and Group Delay Plots



Input/Output Impedance and Passband Amplitude Plots

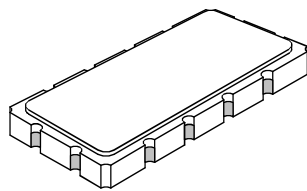


Filter Test Circuit



SM13365-12 Ceramic 12-Terminal Surface-Mount Case

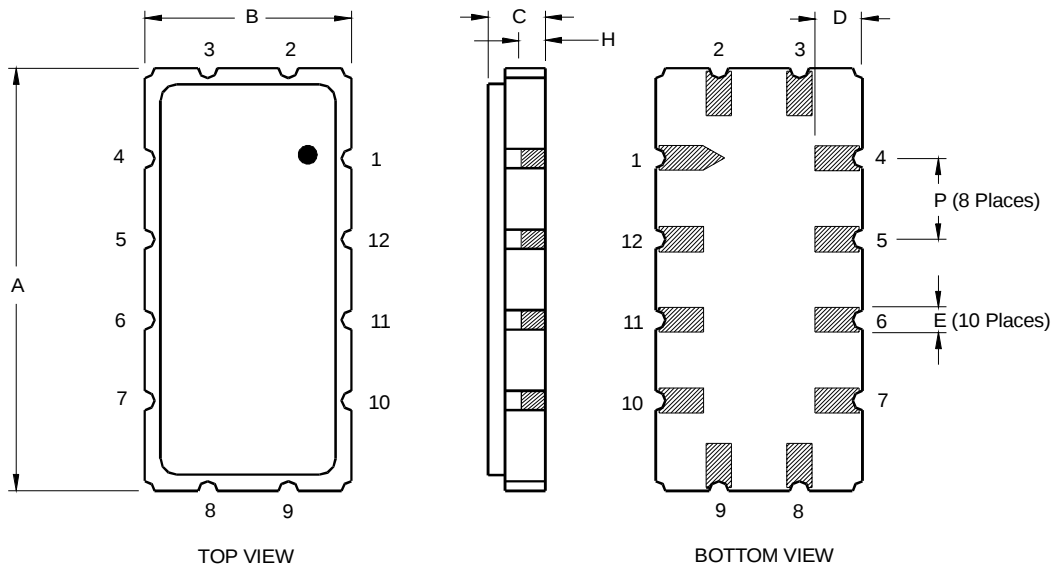
13.3 x 6.5 mm Nominal Footprint



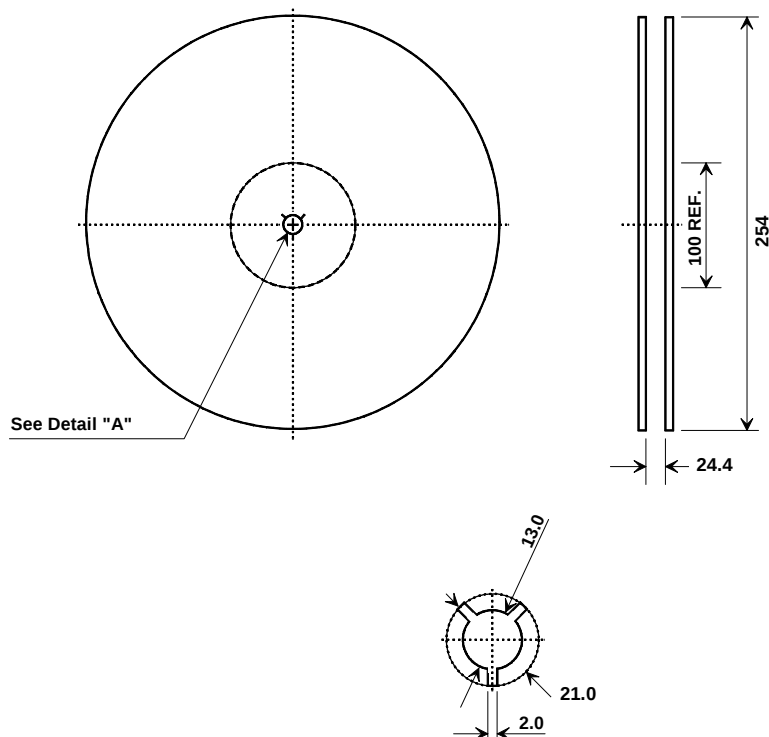
Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	13.08	13.31	13.60	0.515	0.524	0.535
B	6.27	6.50	6.80	0.247	0.256	0.268
C		1.91	2.00		0.075	0.079
D		1.50			0.059	
E		0.79			0.031	
H		1.0			0.039	
P		2.54			0.100	

Materials	
Solder Pad Plating	0.3 to 1.0 μ m Gold over 1.27 to 8.89 μ m Nickel
Lid Plating	2.0 to 3.0 μ m Nickel
Body	Al ₂ O ₃ Ceramic
Pb Free	

Electrical Connections		
Connection		Terminals
Port 1	Input	2
	Return	3
Port 2	Output	8
	Return	9
Ground		All others
Single-ended Operation		Return is ground



Tape and Reel Specifications



Quantity Per Reel
1000

COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	7.0 mm
Bo	13.8 mm
Ko	2.0 mm
Pitch	12.0 mm
W	24.0 mm

