Thin-Film RF/Microwave Filters
Low Pass – Harmonic Lead-Free
LP0402N Series – LGA Termination

RFAP TECHNOLOGY
The LP0402N Series Harmonic Low Pass Filter is based on the proprietary RFAP Thin-Film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The RFAP Harmonic Low Pass Filter is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

APPLICATIONS
- Wireless communications
- Wireless LAN's
- GPS
- WiMAX

LAND GRID ARRAY ADVANTAGES
- Inherent Low Profile
- Self Alignment during Reflow
- Excellent Solderability
- Low Parasitics
- Better Heat Dissipation

HOW TO ORDER

LP	0402	N	XXXX	X	N	TR
Style	**Size**	**Type**	**Frequency** MHz	**Sub-Type**	**Termination** LGA Lead Free	**Taped & Reeled**

QUALITY INSPECTION
Finished parts are 100% tested for electrical parameters and visual characteristics. Each production lot is evaluated on a sample basis for:

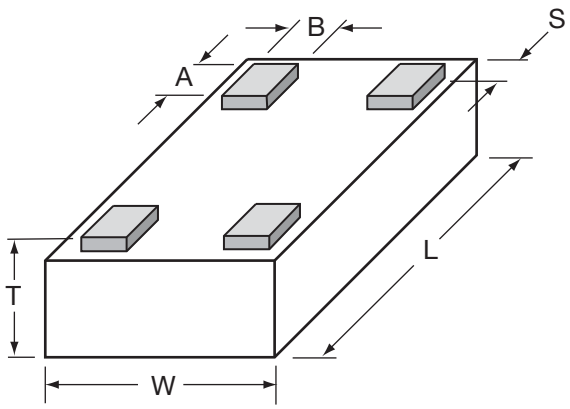
- Static Humidity: 85°C, 85% RH, 160 hours
- Endurance: 125°C, IR, 4 hours

TERMINATION
Nickel/Lead-Free solder coating compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT

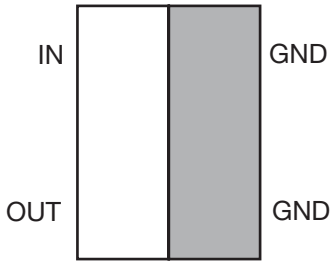
RoHS COMPLIANT

DIMENSIONS: millimeters (inches)
(Bottom View)

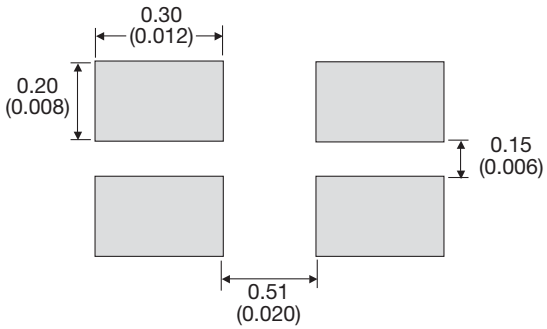


L	1.0±0.05 (0.040±0.002)	A	0.20±0.06 (0.008±0.002)
W	0.58±0.04 (0.023±0.002)	B	0.18±0.05 (0.007±0.002)
T	0.35±0.5 (0.014±0.002)	S	0.05±0.05 (0.002±0.002)

TERMINALS (TOP VIEW)



RECOMMENDED PAD LAYOUT (MM)



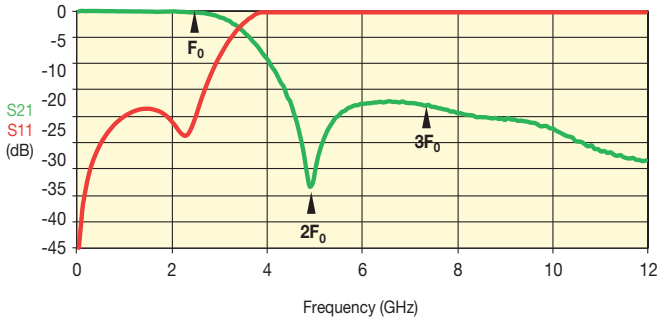
ELECTRICAL CHARACTERISTICS
(Guaranteed over –40°C to +85°C Operating Temperature Range)

P/N	Frequency Band [MHz]	I. Loss [dB]	R. Loss [dB]	Attenuation @ $2xF_0$ [dB]	Attenuation @ $3xF_0$ [dB]
LP0402N2442ANTR	2400-2484	0.35 typ 0.5 max	20	30	17
LP0402N2690ANTR	2640-2740	0.35 typ 0.5 max	20	30	20
LP0402N3500ANTR	3400-3600	0.3 typ 0.5 max	19	30	20
LP0402N5200ANTR	5500-5350	0.2 typ 0.5 max	19	30	20
LP0402N5500ANTR	5350-5650	0.2 typ 0.5 max	15	30	–
LP0402N5800ANTR	5600-6000	0.2 typ 0.5 max	16	25	–

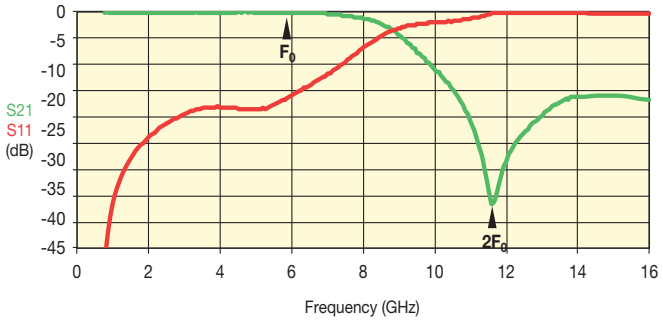
NOTE: Additional Frequencies Available Upon Request

RoHS COMPLIANT

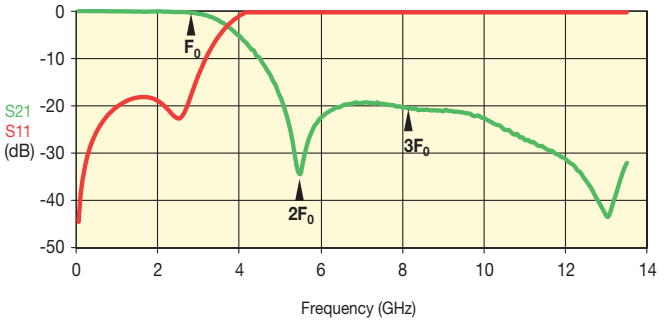
LP0402N2442ANTR



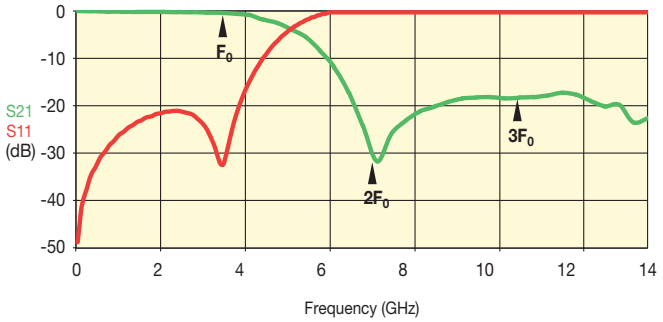
LP0402N5800ANTR



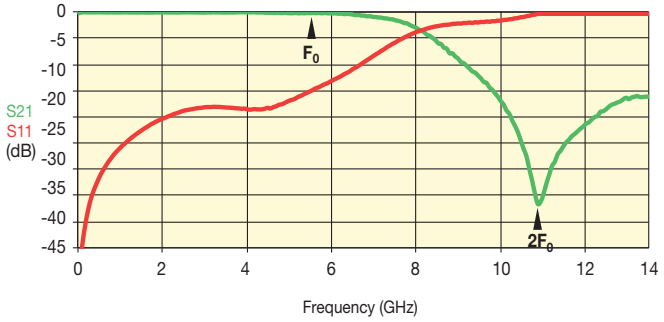
LP0402N2690ANTR



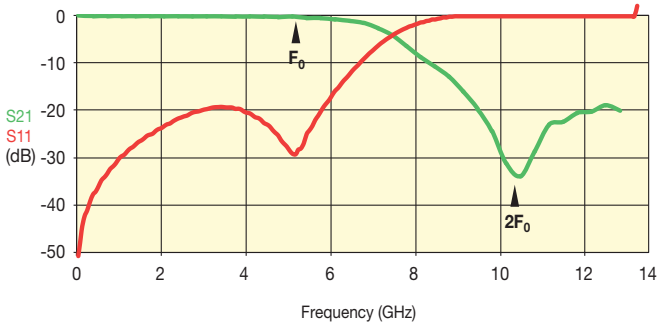
LP0402N3500ANTR



LP0402N5500ANTR



LP0402N5200ANTR



TEST JIG FOR LP0402 LOW PASS FILTER

GENERAL DESCRIPTION

These jigs are designed for testing the LP0603 LGA Low Pass Filters using a Vector Network Analyzer.

They consist of a dielectric substrate, having 50Ω microstrips as conducting lines and a bottom ground plane located at a distance of 0.127mm from the microstrips.

The substrate used is Neltec's NH9338ST0127C1BC (or similar).

The connectors are SMA type (female), 'Johnson Components Inc.' Product P/N: 142-0701-841 (or similar).

Both a measurement jig and a calibration jig are provided.

The calibration jig is designed for a full 2-port calibration, and consists of an open line, short line and through line. LOAD calibration can be done by a 50Ω SMA termination.

MEASUREMENT PROCEDURE

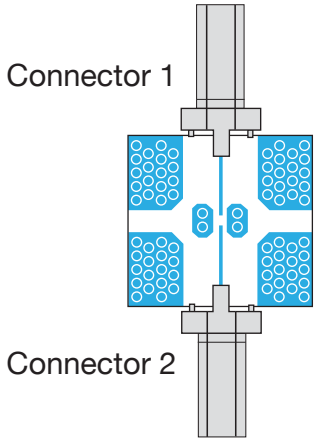
Follow the VNA's instruction manual and use the calibration jig to perform a full 2-Port calibration in the required bandwidths.

Solder the filter to the measurement jig as follows:

Input (Filter)	➧ Connector 1 (Jig)	GND (Filter) ➧ GND (Jig)
Output (Filter)	➧ Connector 2 (Jig)	GND (Filter) ➧ GND (Jig)

Set the VNA to the relevant frequency band. Connect the VNA using a 10dB attenuator on the jig terminal connected to port 2 (using an RF cable).

Measurement



Calibration Jig