



CERAMIC

# High Pass Filter

## HFCQ-2902+

Mini-Circuits

50Ω 29 to 39 GHz

### THE BIG DEAL

- Standard small 1008 (2.5mm x 2.0mm) case style
- Low Insertion Loss – Passband 1.5 dB typical
- Shielded construction preventing filter from de-tuning
- Reduced footprint area by employing LGA (land grid array)
- Surface mountable pick and place standard case style
- Patent pending



Generic photo used for illustration purposes only

CASE STYLE: NL1008C-6

#### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### APPLICATIONS

- Test and Measurement

### PRODUCT OVERVIEW

The HFCQ-2902+ LTCC High Pass Filter achieves a miniature size and high repeatability of performance by utilizing a proprietary LTCC material system and distributed filter topology. The typical passband loss at 29.0 – 39.0 GHz is as low as 1.5 dB, with typical stopband rejections at 25 dB up to 21.9 GHz. This model handles up to 1W RF input power, and provides a wide operating temperature range from -55 to +125°C. Utilizing a proprietary LTCC material system and a distributed filter topology, this filter is able to achieve repeatable performance on a lot-to-lot basis.

### KEY FEATURES

Feature	Advantages
Cost effective	LTCC is scalable technology that is cost effective due to ease of production in high quantities.
Small size (2.5mm x 2.0mm)	Allows for high layout density of circuit boards, while minimizing effects of parasitics.
Surface Mountable	Suitable for very high volume automated assembly process.

REV. OR  
NPO-002619  
HFCQ-2902+  
CGD/CP/AM  
032125





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### ELECTRICAL SPECIFICATIONS<sup>1</sup> AT 25°C

Parameter	F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Stop Band	DC-F1	0.1 - 15	30	40	—	dB
	F1-F2	15 - 21.9	18	25	—	dB
Pass Band	F3-F4	29 - 39	—	1.5	2.75	dB
	F3-F4	29 - 39	—	13	—	dB

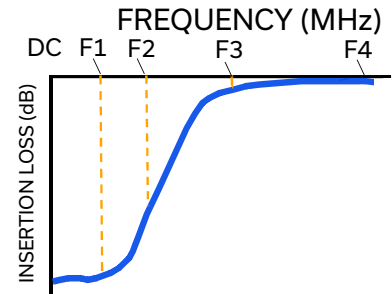
1. Measured on Mini-Circuits Test Board TB-HFCQ-2902C+ with connectors and feedlines de-embedded.

### MAXIMUM RATINGS

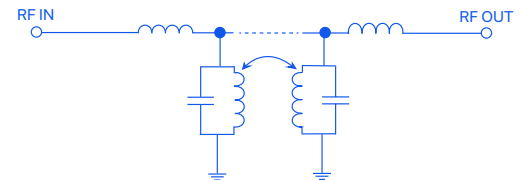
Parameter	Ratings
Operating temperature	-55°C to +125°C
Storage temperature	-55°C to +125°C
RF Power Input	1W

Permanent damage may occur if any of these limits are exceeded.

### TYPICAL FREQUENCY RESPONSE



### FUNCTIONAL SCHEMATIC





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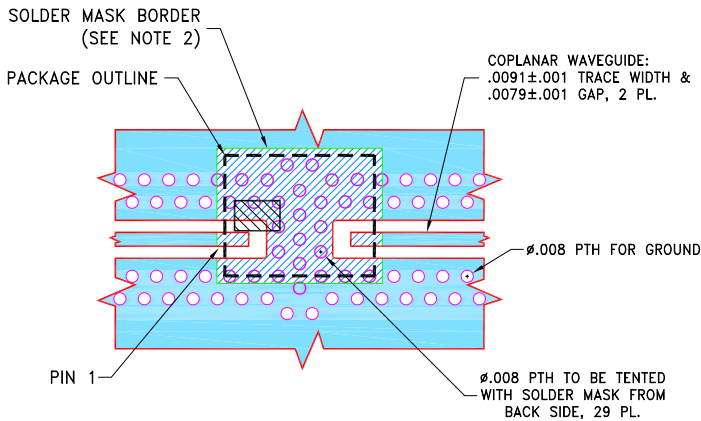
# HFCQ-2902+

### PAD CONNECTIONS

INPUT	1
OUTPUT	2
GROUND	3

PRODUCT MARKING: UP

### DEMO BOARD MCL P/N: TB-HFCQ-2902C+ SUGGESTED PCB LAYOUT (PL-707)

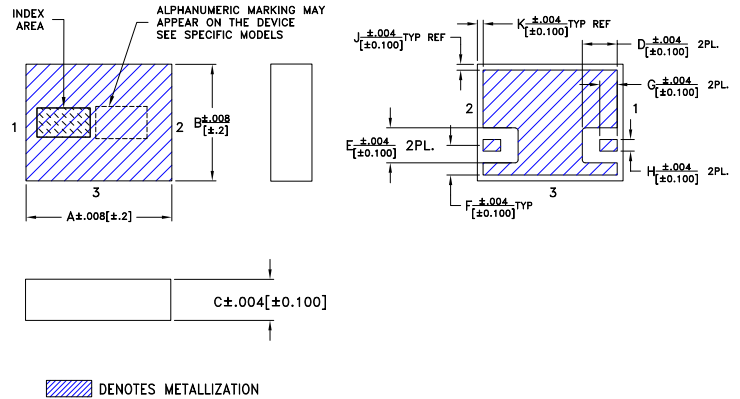


**NOTES:**

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR MEGTRON-7 R5785(N); DIELECTRIC THICKNESS: .0049±.001; CLOTH STYLE: 2116; COPPER: HVLP/HVLP. FOR OTHER MATERIALS LINE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. SOLDER MASK OPENING FOR COMPONENT SOLDERING HAS BEEN INCREASED AGAINST PCB LAND PATTERN RECOMMENDATIONS PER NL1008C-6 AND CAN BE DEVIATED FROM THIS DRAWING TO COMPLY WITH CUSTOMERS' DESIGN RULES.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

### OUTLINE DRAWING



### OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	F	G	H	J	K	wt
.098	.079	.028	.024	.024	.020	.012	.008	.004	.004	grams
2.49	2.01	0.71	0.6	0.6	0.51	0.3	0.2	0.1	0.1	.019