ISO 9001

PRODUCT SPECIFICATION

THIN FILM OPERATION

CP0402A4596ELTR High Directivity LGA Termination Directional Couplers

ITF TECHNOLOGY

The ITF High Directivity LGA Coupler is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Coupler is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

APPLICATIONS:

- Mobile communications
- Satellite TV receivers
- GPS
- Vehicle location systems
- Wireless LAN's

Land Grid Array Advantages:

- Inherent Low Profile
- Self Alignment during Reflow
- Excellent Solderability
- Low Parasitics
- Better Heat Dissipation

PART NUMBER CODE:

CP	0402	X	XXXX	X	L	TR
		Type	Frequency (MHz)	Sub-Type	LGA Term	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:

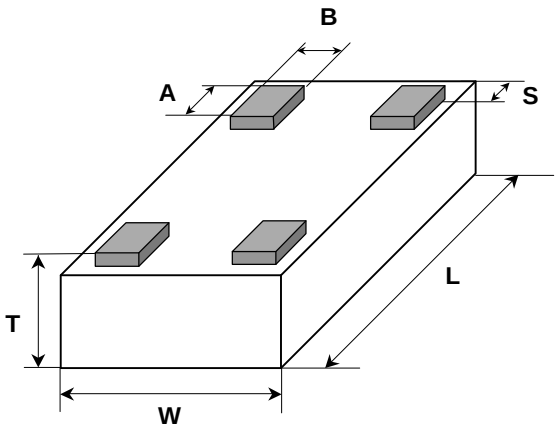
Nickel/ Solder coating compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

OPERATING TEMPERATURE:

-40°C to +85°C

DIMENSIONS - mm (inches)

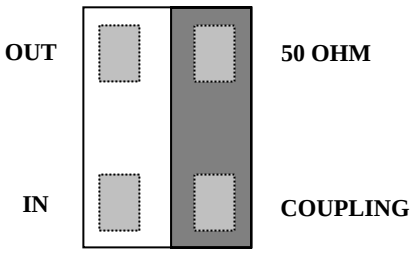
(Bottom View)



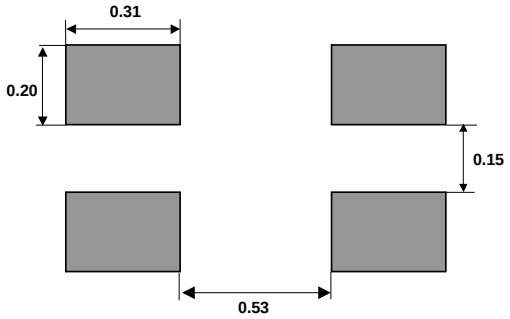
L	1.0±0.05 (0.040±0.002)
W	0.58±0.04 (0.023±0.002)
T	0.35±0.05 (0.014±0.002)

A	0.20±0.05 (0.008±0.002)
B	0.18±0.05 (0.007±0.002)
S	0.05±0.05 (0.002±0.002)

TERMINALS (Top View)



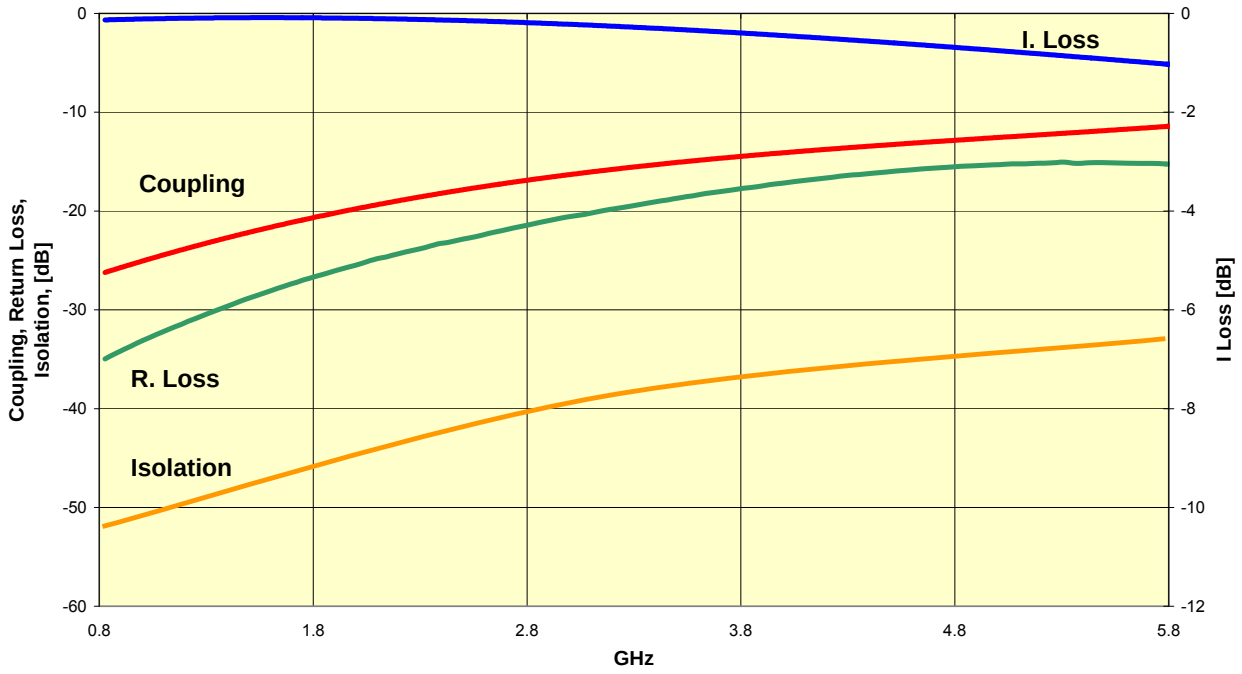
Recommended Pad Layout (mm)



Directional Coupler Type CP0402A4596ELTR

P/N	FREQUENCY [Mhz]	COUPLING [dB]	I. Loss max. [dB]	R.Loss [dB]	Directivity [dB]
CP0402A4596ELTR	4596	-12.3±1	-0.8	-15 typ.	15 typ.

CP0402A4596ELTR



CP0402 / CP0603 High Directivity Couplers Test Jigs

GENERAL DESCRIPTION

These jigs are designed for testing the CP0402 and CP0603 High Directivity Couplers 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 0.254mm from the microstrips.
The substrate used is Neltec's NH9338ST0254C1BC.
The connectors are SMA type (female), 'Johnson Components Inc.' Product P/N: 142-0701-841.
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

When measuring a component, it can be either soldered or pressed using a non-metallic stick until all four ports touch the appropriate pads. Set the VNA to the relevant frequency band. Connect the VNA using a 10dB attenuator on the jig terminal connected to port 2. Follow the VNA's instruction manual and use the calibration jig to perform a full 2-Port calibration in the required bandwidths.

Place the coupler on the measurement jig as follows:

Input (Coupler) ➔ Connector 1 (Jig). Termination (Coupler) ➔ Connector 3 (Jig).
Output (Coupler) ➔ Connector 2 (Jig). Coupling (Coupler) ➔ Connector 4 (Jig).

To measure I.Loss connect:

Connector1 (Jig) ➔ Port1 (VNA) Connector3 (Jig) ➔ 50Ω
Connector2 (Jig) ➔ Port2 (VNA) Connector4 (Jig) ➔ 50Ω.

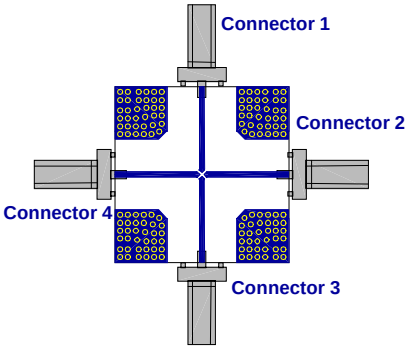
To measure R.Loss and Coupling connect:

Connector1 (Jig) ➔ Port1(VNA) Connector3 (Jig) ➔50Ω
Connector2 (Jig) ➔ 50Ω Connector4 (Jig) ➔ Port2 (VNA).

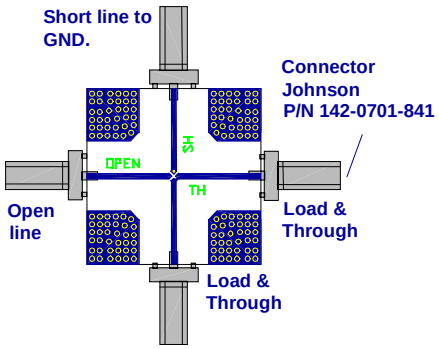
To measure Isolation connect:

Connector1 (Jig) ➔ 50Ω Connector3 (Jig) ➔ 50Ω
Connector2 (Jig) ➔ Port1(VNA) Connector4 (Jig) ➔ Port2 (VNA).

Measurement Jig



Calibration Jig



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

AVX:
CP0402A4596ELTR