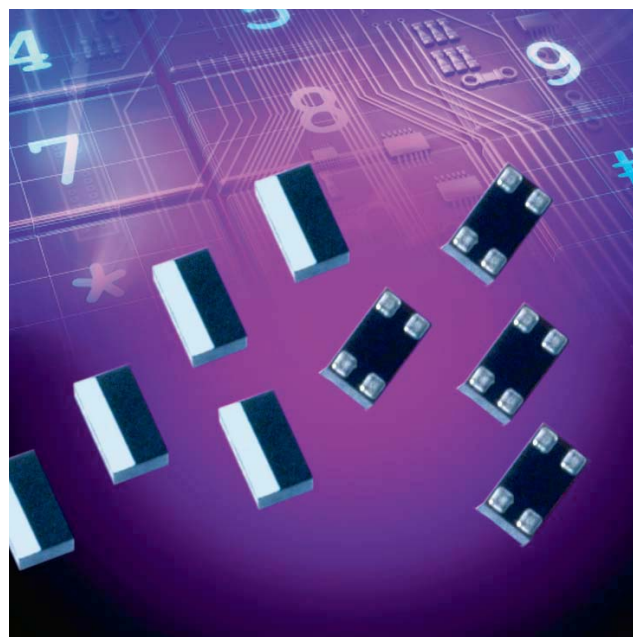


# Thin Film Directional Couplers

## Wide Band High Directivity



CP0402W2700FNTR



### ITF TECHNOLOGY

The ITF High Directivity Wide Band 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 Wide Band High Directivity Coupler displays a stable coupling factor over a wide frequency band.

### APPLICATIONS

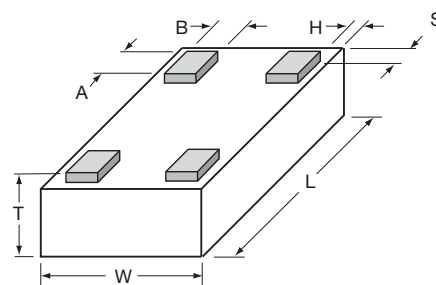
- Mobile communications
- Satellite TV receivers
- GPS
- Vehicle location systems
- Wireless LAN's

### LAND GRID ARRAY ADVANTAGES

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

### DIMENSIONS (Bottom View)

mm (inches)



L	1.00±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, H	0.05±0.05 (0.002±0.002)

### HOW TO ORDER

CP 0402 W XXXX X N TR

Type Wide Band Frequency (MHz) Sub-Type LGA Termination Sn100 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, I<sub>R</sub>, 4 hours

### TERMINATION

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

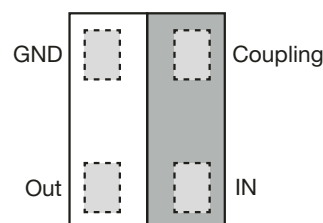
### OPERATING TEMPERATURE

-40°C to +85°C

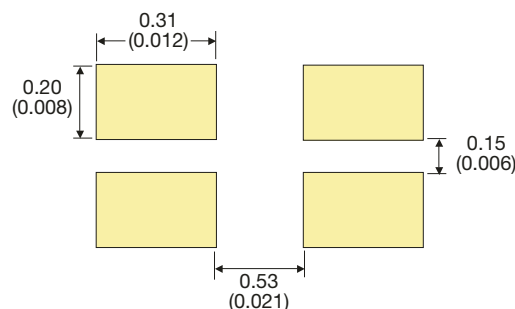
### POWER RATING

3W RF Continuous

### TERMINALS (Top View)



### Recommended Pad Layout Dimensions mm (inches)



# Thin Film Directional Couplers

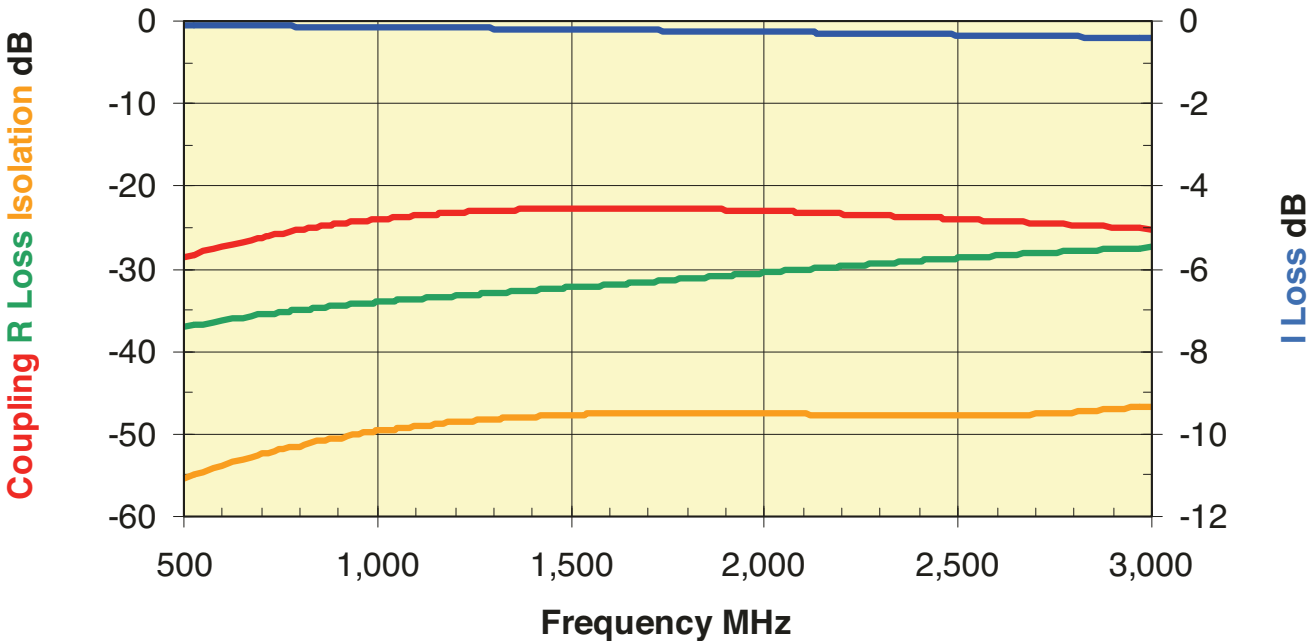
## Wide Band High Directivity



CP0402W2700FNTR

Directional Coupler Type CP0402W2700FNTR

P/N	Frequency [MHz]	Coupling [dB]	I. Loss max. [dB]	Return Loss [dB]	Directivity [dB]
CP0402W2700FNTR	700-2,700	24±2	0.3	18	20



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# Thin Film Directional Couplers

## Wide Band High Directivity

### CP0402W2700FNTR Test Jigs

#### GENERAL DESCRIPTION

These jigs are designed for testing the CP0402W2700FNTR 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 (0.010") 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:

GND (Coupler)	◀ Connector 1 (Jig)	IN (Coupler)	◀ Connector 3 (Jig)
Coupling (Coupler)	◀ Connector 2 (Jig)	Out (Coupler)	◀ Connector 4 (Jig)

##### To measure I. Loss connect:

Connector 3 (Jig) ◀ Port 1 (VNA)	Connector 2 (Jig) ◀ 50Ω
Connector 4 (Jig) ◀ Port 2 (VNA)	

##### To measure R. Loss and Coupling connect:

Connector 3 (Jig) ◀ Port 1 (VNA)	Connector 4 (Jig) ◀ 50Ω
Connector 2 (Jig) ◀ Port 2 (VNA)	

##### To measure Isolation connect:

Connector 4 (Jig) ◀ Port 1 (VNA)	Connector 2 (Jig) ◀ Port 2 (VNA)
Connector 3 (Jig) ◀ 50Ω	

