



# PRODUCT SPECIFICATION



## High Directivity, Tight Tolerance, LGA Termination Directional Coupler CP0603V0836CNTR

### ITF TECHNOLOGY

The ITF 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 0603 X XXXX X N TR**  
 Type Frequency Sub-LGA Taped &  
 (MHz) Type Term. Reeled  
 Lead-Free

### 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

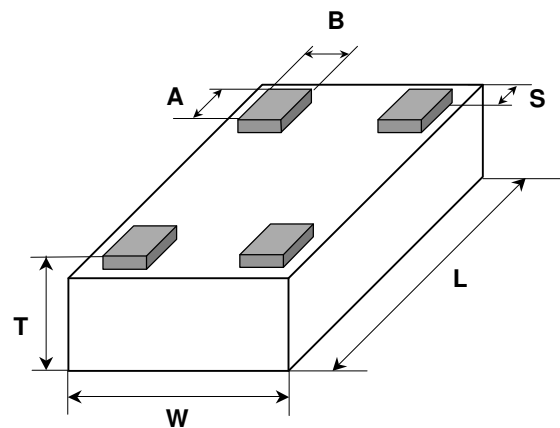
### TERMINATION:

Nickel/ Lead Free Solder coating (Sn100) compatible with automatic soldering technologies: reflow, wave soldering, vapor phase and manual.

### OPERATING TEMPERATURE:

-40°C to +85°C

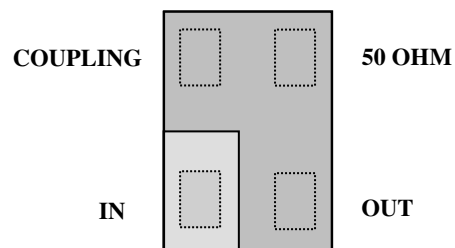
**DIMENSIONS** - mm (inches)  
(Bottom View)



|          |                           |
|----------|---------------------------|
| <b>L</b> | 1.6±0.1<br>(0.063±0.004)  |
| <b>W</b> | 0.84±0.1<br>(0.033±0.004) |
| <b>T</b> | 0.60±0.1<br>(0.024±0.004) |

|          |                              |
|----------|------------------------------|
| <b>A</b> | 0.36±0.05<br>(0.014±0.002)   |
| <b>B</b> | 0.20±0.05<br>(0.008±0.002)   |
| <b>S</b> | 0.055±0.055<br>(0.002±0.002) |

**TERMINALS** ( Top View)





**PRODUCT  
SPECIFICATION**



**Directional Coupler Type CP0603V0836CNTR**

| P/N             | FREQUENCY<br>[ MHz ] | COUPLING<br>[ dB ] | I. Loss<br>[ dB ] | R. Loss<br>[dB] | Directivity<br>[dB] |
|-----------------|----------------------|--------------------|-------------------|-----------------|---------------------|
| CP0603V0836CNTR | 836                  | -10.1±0.5          | -0.7 max          | -21 typ         | 14.5 typ            |

## 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) |
| Coupling (Coupler) → Connector 2 (Jig) | Out (Coupler) → Connector 4 (Jig)         |

#### To measure I.Loss connect:

|                                |                                |
|--------------------------------|--------------------------------|
| Connector1 (Jig) → Port1 (VNA) | Connector3 (Jig) → 50Ω         |
| Connector2 (Jig) → 50Ω         | Connector4 (Jig) → Port2 (VNA) |

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

|                                |                        |
|--------------------------------|------------------------|
| Connector1 (Jig) → Port1(VNA)  | Connector3 (Jig) → 50Ω |
| Connector2 (Jig) → Port2 (VNA) | Connector4 (Jig) → 50Ω |

#### To measure Isolation connect:

|                               |                                 |
|-------------------------------|---------------------------------|
| Connector1 (Jig) → 50Ω        | Connector3 (Jig) → 50Ω          |
| Connector2 (Jig) → Port2(VNA) | Connector4 (Jig) → Port1 (VNA). |

