

# 90° HYBRID COUPLER

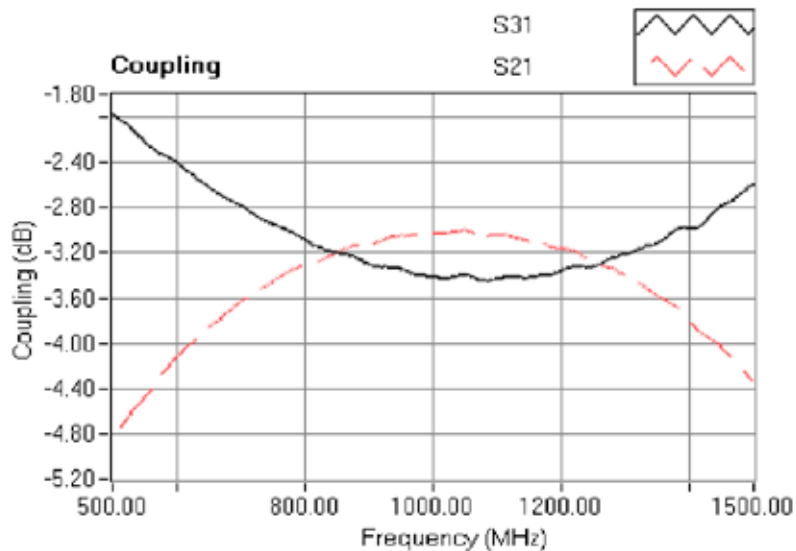
## SYNSTRIIP® MODEL: MSQ-8012

WIDE BANDWIDTH

800 - 1200 MHz

### FEATURES:

- ▶ Synstrip Technology™
- ▶ Small Package Size, Surface Mount
- ▶ REL-PRO® Patented Technology
- ▶ Building Block For:
  - Power Amplifiers
  - Image Rejection Mixers
  - I & Q / SSB Modulators
  - Phase Shifters & More...



### SPECIFICATIONS (Rev. B 01/27/10)

|                          |                |      |
|--------------------------|----------------|------|
| Frequency                | 800 - 1200 MHz |      |
| Insertion Loss (dB) *    | Min.           | Max. |
|                          | 0.2            | 0.25 |
| Amplitude Unbalance (dB) | Typ.           | Max. |
|                          | ±0.3           | ±0.4 |
| Phase Unbalance (Deg.)   | Typ.           | Max. |
|                          | 2.0            | 3.0  |

|                                                                            |                              |      |
|----------------------------------------------------------------------------|------------------------------|------|
| Isolation (dB)                                                             | Typ.                         | Min. |
|                                                                            | 22                           | 18   |
| Power Rating                                                               | 150 Avg. Watts (CW Max.)     |      |
| Impedance                                                                  | 50 Ohms (Nom.)               |      |
| VSWR                                                                       | 1.2:1 (Typ.) / 1.25:1 (Max.) |      |
| Operating Temperature Range                                                | -55 to +85 °C                |      |
| * The insertion loss is measured at the midpoint of the two output levels. |                              |      |

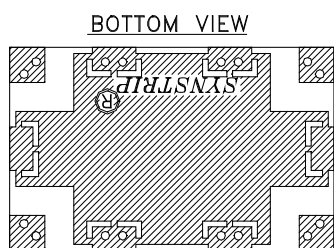
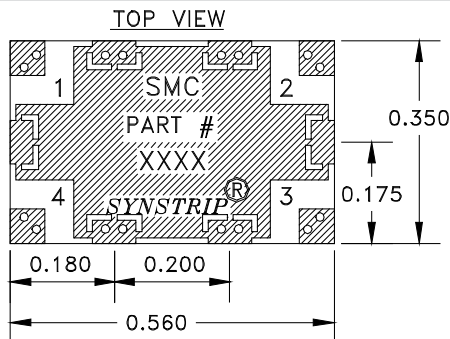
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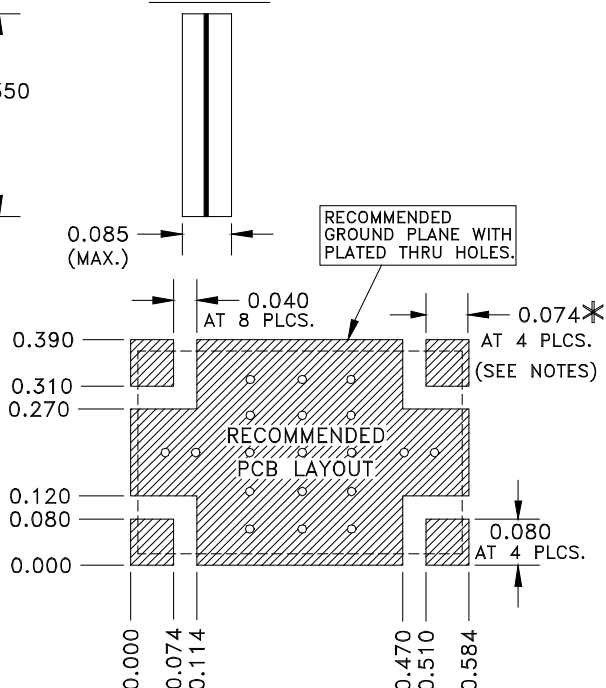
**800 - 1200 MHz**

Package # 227LF



HATCHED AREA IS METALIZATION.

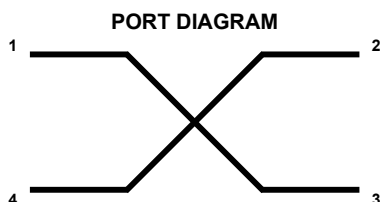
**SIDE VIEW**



**IMPORTANT NOTES:**

- 1) THE WIDTH OF THE LIVE PADS SHOULD CORRESPOND TO 50 OHM FOR THE DI-ELECTRIC CONSTANT AND THICKNESS OF THE CHOSEN PC BOARD MATERIAL. THE GIVEN VALUE(\*) CORRESPONDS TO  $\epsilon_r=3.38$  & THICKNESS=0.032" (ROGERS RO 4003).
- 2) THE COUPLER SHOULD BE SOLDER ATTACHED TO THE RECOMMENDED PC BOARD LAYOUT FOR ACHIEVING SPECIFIED PERFORMANCE.

PACKAGE MOUNTING: SEE APPLICATION NOTE AN7200



**PHASING DIAGRAM**

| OUT<br>IN | 1    | 2    | 3    | 4    |
|-----------|------|------|------|------|
| 1         |      | ISO  | -90° | 0°   |
| 2         | ISO  |      | 0°   | -90° |
| 3         | -90° | 0°   |      | ISO  |
| 4         | 0°   | +90° | ISO  |      |

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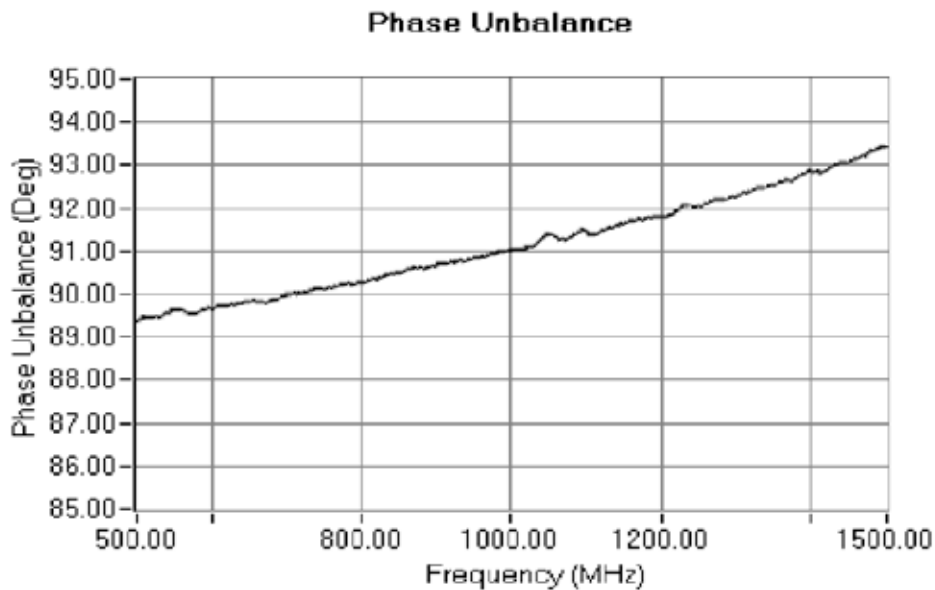
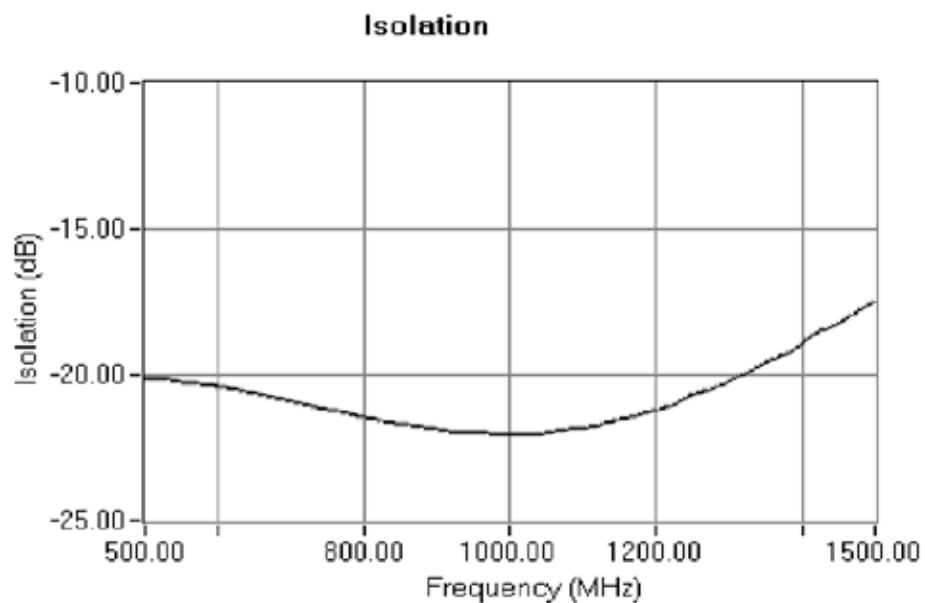
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Data @ 25°C

PERFORMANCE PLOTS

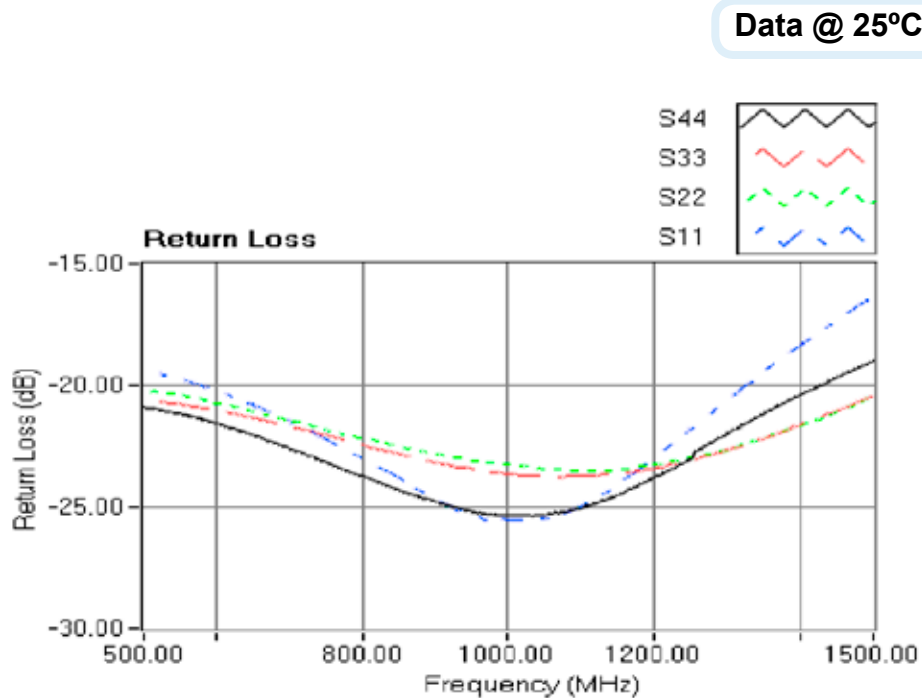


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PERFORMANCE PLOTS