MULTI-MIX® MICROTECHNOLOGY

ILC-3SH-2.0G

IN-LINE MULTICOUPLERS

REV: 008, 09/21/01

- 1.8 - 2.0 GHz
- LOW LOSS
- LOW VSWR
- HIGH ISOLATION
- SURFACE MOUNT
- TAPE & REEL

TECHNICAL DESCRIPTION / APPLICATION

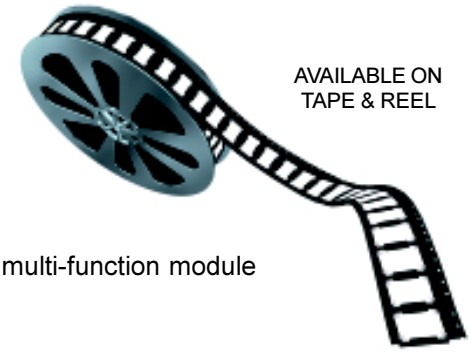
MULTI-MIX PICO™ SH SERIES IN-LINE MULTICOUPLERS

The Multi-Mix PICO™ ILC-SH series provides a power divider and combiner function with low insertion loss, high isolation, and high power handling in a small outline. The ILC series are composed of serial connected multi-couplers with each coupler having a different nominal coupling value. Equal split loss is maintained at all of the coupled ports, since the direct-path loss of previous couplers is added. Each of the paths through a divider / combiner pair have equal insertion phase, but the individual port paths do not. Accurate phase and amplitude balance make them ideal for applications involving power amplifiers, signal distribution and processing.

ILC-SH in-line multicouplers are fusion bonded multilayer stripline assemblies. The fusion bonding process yields a homogeneous monolithic dielectric structure with reliability, ruggedness, and electrical performance that is superior to conventional adhesive bonding techniques.

The ILC-SH series is an easy to install SMD designed specifically for the full spectrum of wireless applications. The high stability ceramic filled PTFE dielectrics utilized in these components are compatible with common substrates such as FR-4, G-10, and polyamide. The wrap around ground plane provides excellent EM shielding.

Additional benefits include:



AVAILABLE ON TAPE & REEL

- Available on tape and reel
- Cost effective for commercial wireless applications
- Small outline size
- Operating temperature range –55°C to +85°C.
- Can be integrated with other Multi-Mix® components in a multi-function module

RELIABILITY

The product family has passed environmental screening including Thermal shock, Burn-in, Acceleration, Vibration, Mechanical Shock, Moisture Resistance, Resistance to Solder Heat, and Thermal Cycling Life Test (>1000 cycles).

THE MULTI-MIX® PROCESS

Multi-Mix® is a manufacturing process based on fluoropolymer composite substrates that are fusion bonded together into a multilayer structure. The fusion bonding process yields a homogeneous monolithic structure with superior performance at microwave and millimeter wave frequencies. The bonded layers can contain embedded semiconductors, MMICs, etched resistors, circuit patterns, and plated-through vias to form a SMD module that requires no additional packaging and is suitable for automated assembly.

THE MULTI-MIX MICROTECHNOLOGY® GROUP IS ISO-9001 REGISTERED

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GENERAL SPECIFICATIONS

ELECTRICAL

FREQUENCY	1.8 TO 2.0 GHz
NOMINAL COUPLING	4.8 dB
INSERTION LOSS	0.25 dB (TYP), 0.35 dB (MAX)
VSWR	1.35:1 (TYP), 1.45:1 (MAX)
AMPLITUDE BALANCE	± 0.6 dB (TYP), ±0.8 dB (MAX)
ISOLATION	22 dB (MIN)
MAXIMUM INPUT POWER * OPTION 1 OPTION 2	 10 W (MAX) 100 W (MAX)

*CW input power, tested as a divider, internal load dissipation 375 mw max. for OPTION 1, 5 W max. for OPTION 2.

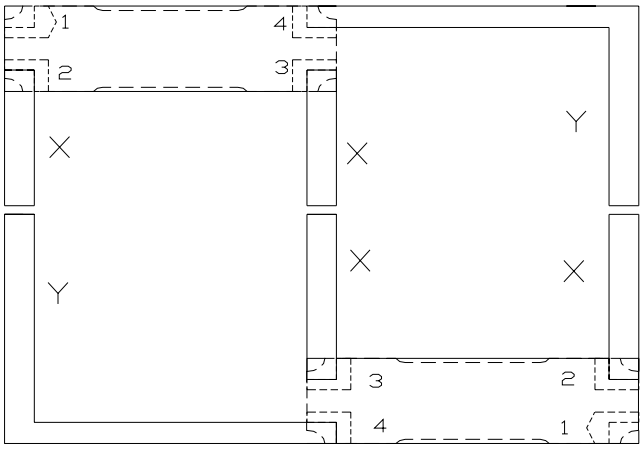
MECHANICAL

SIZE / OUTLINE	0.20 x 0.56 x 0.13 inches
WEIGHT	0.023 oz.
RF INTERFACE	Surface Mount

ENVIRONMENTAL

OPERATING TEMPERATURE RANGE	-55° To + 85°, C

Recommended mounting configuration for proper back to back phase cancellation
(Length calculation based on RO4003, 0.02 inches thick material.)



Where Y = X + 0.765 inches

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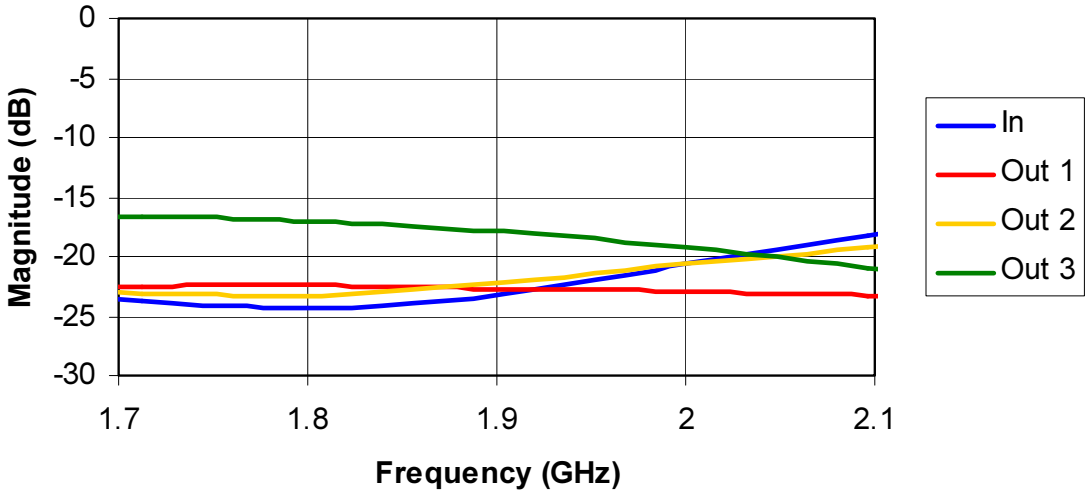
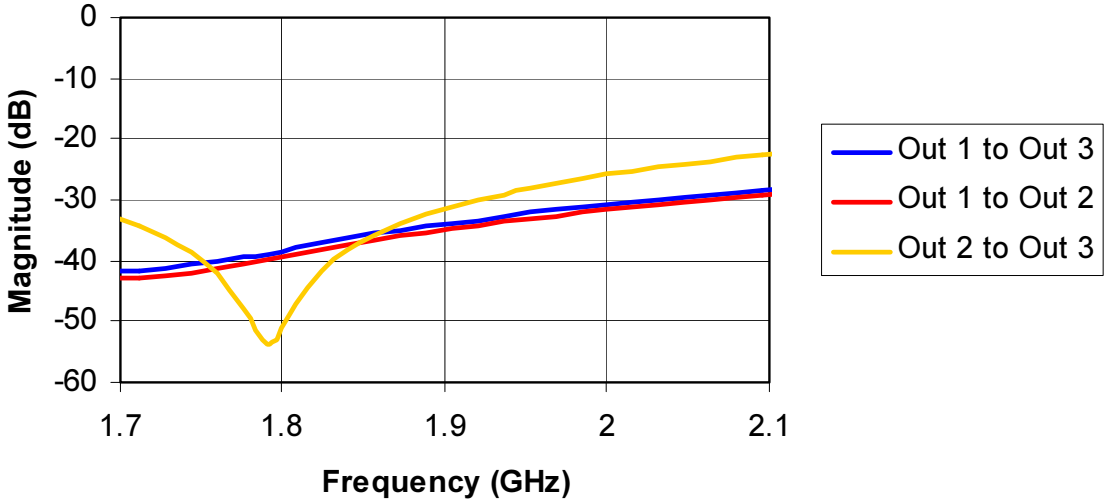
TYPICAL PERFORMANCE

Return Loss



Isolation



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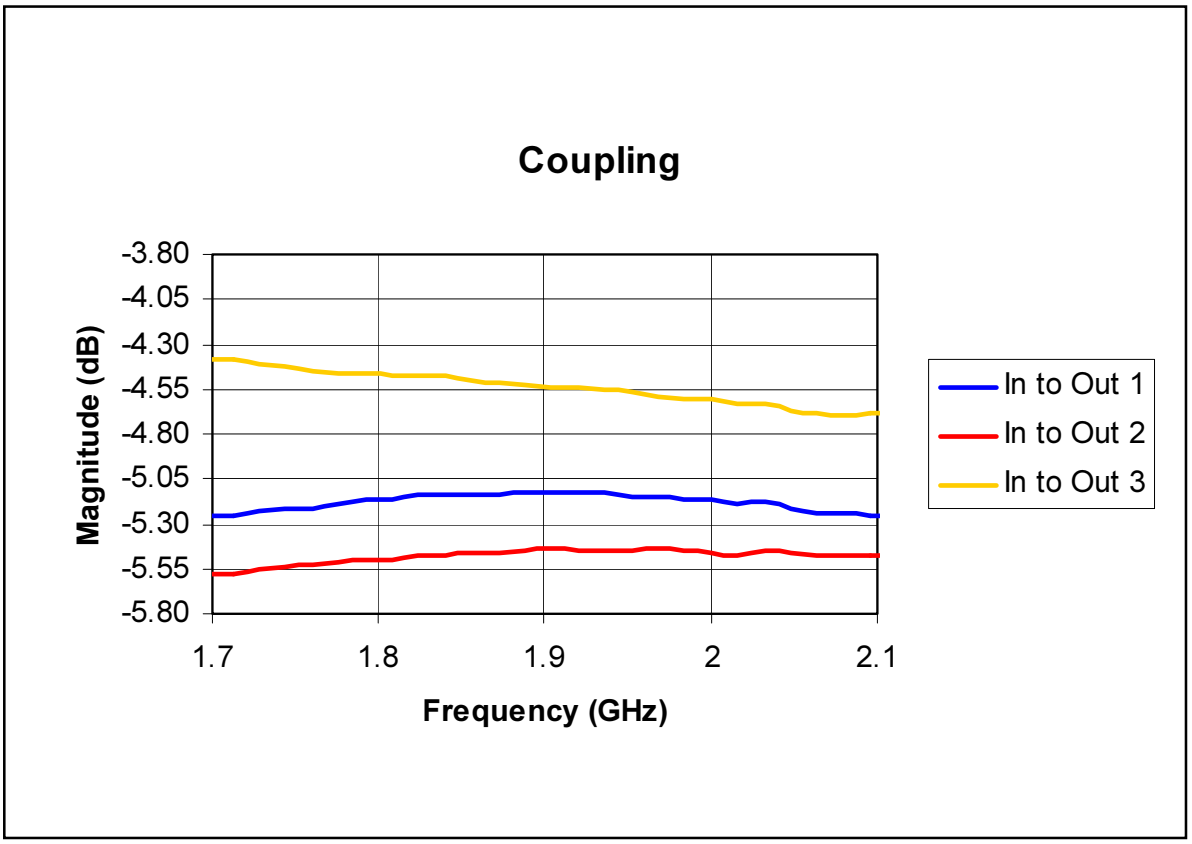
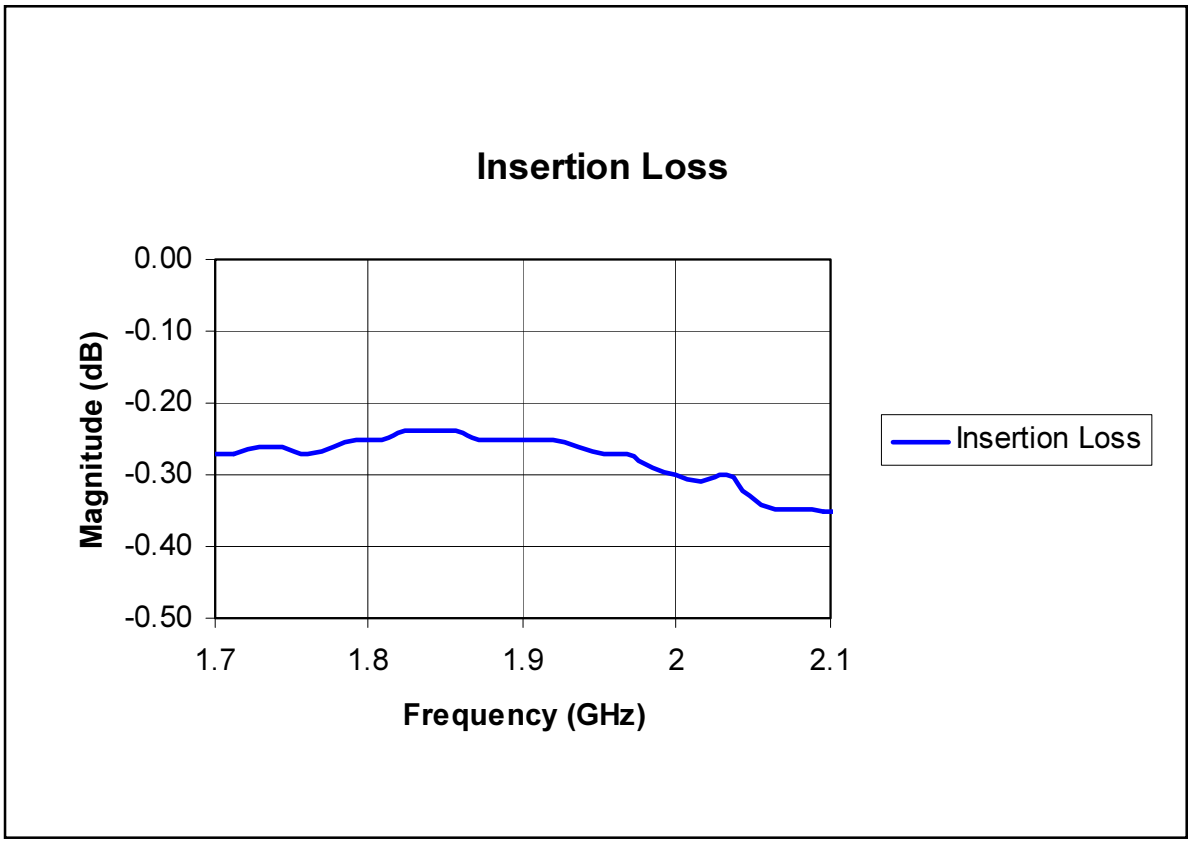
TYPICAL PERFORMANCE





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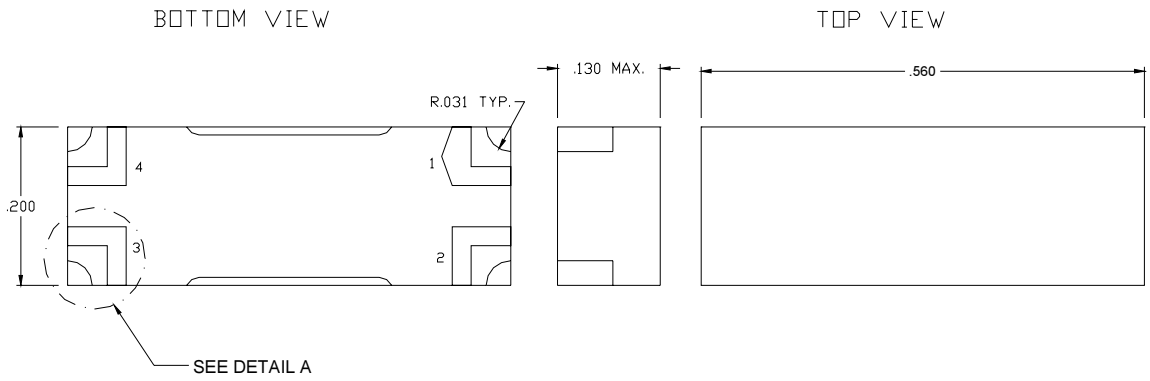
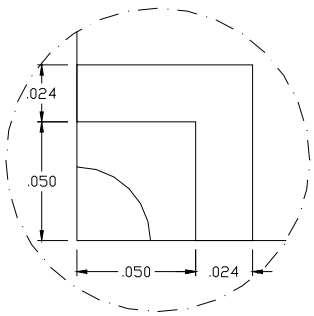
PACKAGE OUTLINE





DETAIL A
SCALE 3:1

PORT #	FUNCTION
1	IN
2	OUT
3	OUT
4	OUT

NOTES:
1. ALL DIMENSIONS IN INCHES.
2. TOLERANCES: +/- .010.

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