

- 1.8 - 1.99 GHz
- HIGH POWER... 100 WATTS CW
- LOWEST LOSS
- HIGHEST ISOLATION
- BEST PHASE/AMPLITUDE BALANCE
- SURFACE MOUNT
- TAPE & REEL



TECHNICAL DESCRIPTION / APPLICATION

MULTI-MIX PICO™ Z-SERIES HYBRID JUNCTION

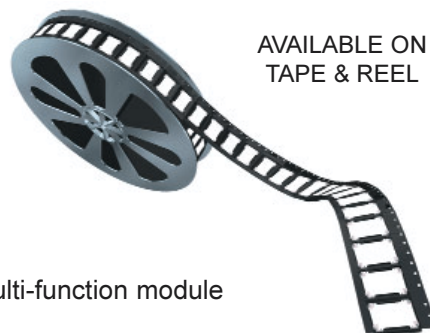
The Multi-Mix® HJD-Z series provides a 3 dB, hybrid junction with low insertion loss, high isolation, and high power handling in a small outline. Accurate phase and amplitude balance, make them ideal for use in PCS power amplifiers, beamforming networks, matching baluns, signal distribution and processing functions. They can also be used in monopulse receivers for processing signal feeds off the antenna. Hybrid junctions are often used as part of more complex divider/coupler, balance mixers, image reject mixers, single sideband modulators and antenna feed network assemblies.

HJD-Z hybrid junctions 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 HJD-Z 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:

- Small outline size
- High power... 100 Watts CW
- Cost effective for commercial wireless applications
- Operating temperature range -55°C to +85°C.
- Available on tape and reel
- Can be integrated with other Multi-Mix® components in a multi-function module



AVAILABLE ON
TAPE & REEL

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



ELECTRICAL

FREQUENCY	1.8 TO 1.99 GHz
ISOLATION	20 dB (MIN)
INSERTION LOSS	0.3 dB (MAX)
VSWR	1.35:1 (MAX)
AMPLITUDE BALANCE	± 0.25 dB (MAX)
PHASE BALANCE	± 5 Deg (MAX)
MAXIMUM INPUT POWER *	100W (MAX)

*CW input power, tested in fixture with heat sink at 25° C

MECHANICAL

SIZE / OUTLINE	0.18 x 0.18 x 0.11 inches
WEIGHT	0.003 oz.
RF INTERFACE*	Surface Mount

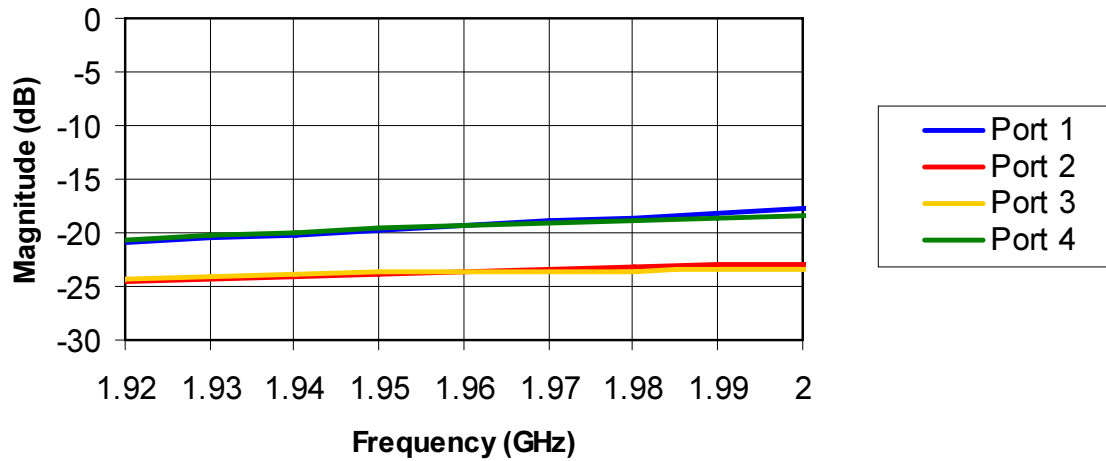
*Refer to layout guidelines for recommended RF interface.

ENVIRONMENTAL

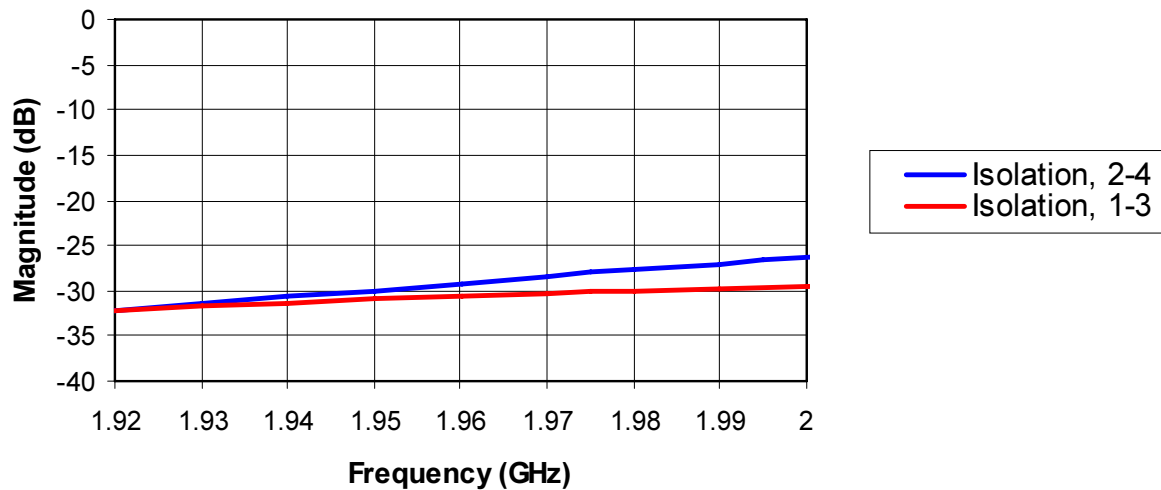
OPERATING TEMPERATURE RANGE	-55° To + 85°, C
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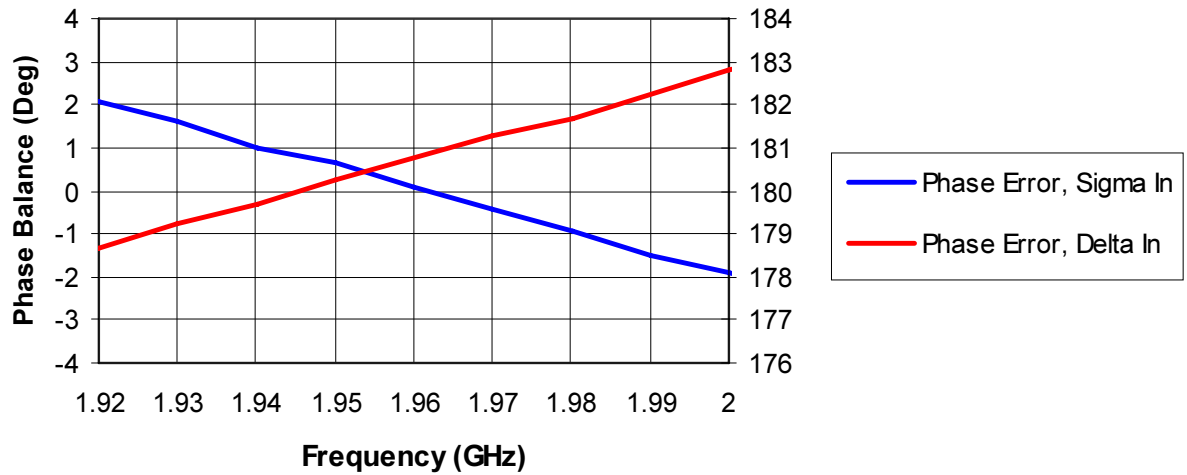
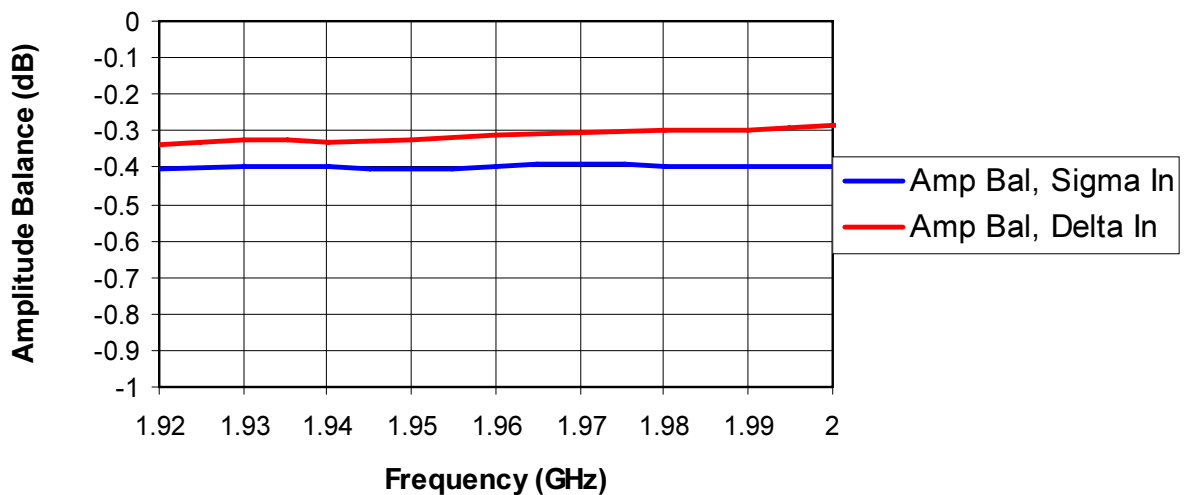
Return Loss



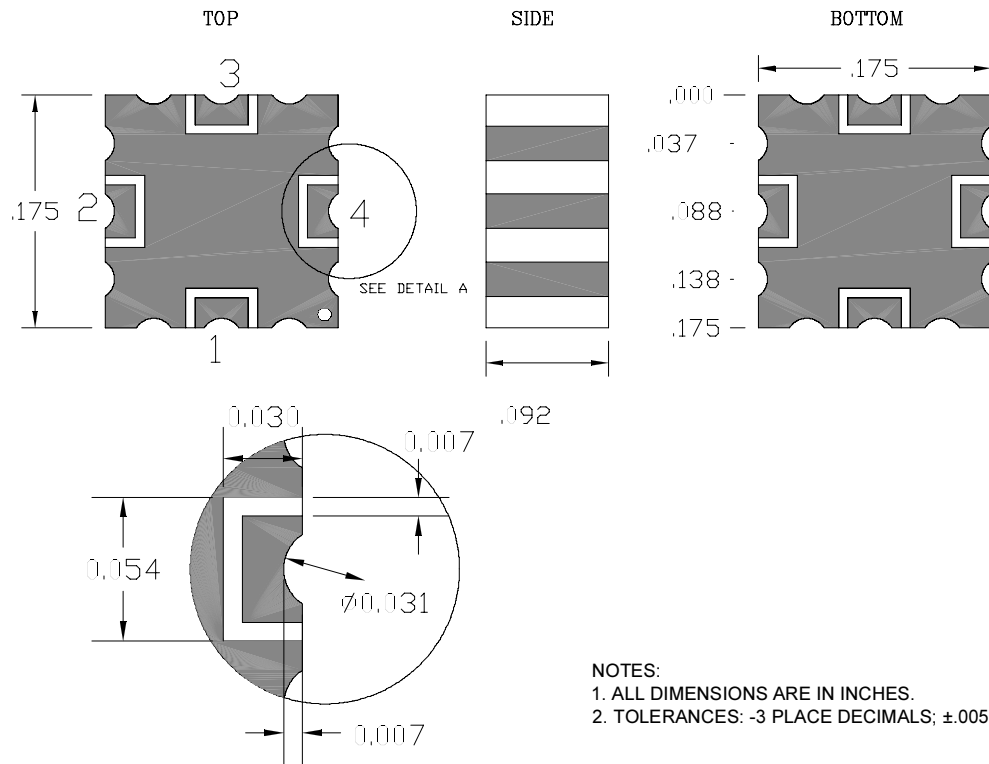
Isolation



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Phase Balance**Amplitude Balance**

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- NOTES:
 1. ALL DIMENSIONS ARE IN INCHES.
 2. TOLERANCES: -3 PLACE DECIMALS; $\pm .005$.

	Sigma In	Delta In
2 (Out)	0	0
3 (Sigma)	In	Isolated
4 (Out)	0	180
1 (Delta)	Isolated	In