

- 1.75 - 5.0 GHz
- LOWEST LOSS
- HIGHEST ISOLATION
- BEST PHASE/AMPLITUDE BALANCE
- TAPE & REEL



TECHNICAL DESCRIPTION / APPLICATION

MULTI-MIX[®] QUAD HYBRIDS

The Multi-Mix[®] QHD series provides a 3 dB coupler with low insertion loss, low VSWR, and high isolation. Accurate phase and amplitude balance make them ideal for applications involving IQ networks, power amplifiers, signal distribution and processing.

QHD quad hybrids 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 QHD 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:

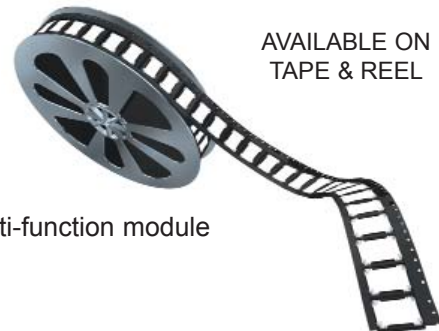
Available on tape and reel

Cost effective for commercial wireless applications

Industry standard size

Temperature stable from -65° to $+125^{\circ}$ C.

Can be integrated with other Multi-Mix[®] components in a multi-function module



AVAILABLE ON
TAPE & REEL

RELIABILITY

All QHD series components are 100% tested. The product family has passed environmental screening per MIL-TSD-202 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 ready for pick and place.

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



U.S. patent 6,099,677 and other patents pending.

ELECTRICAL

FREQUENCY RANGE	1.75 TO 5.0 GHz
INSERTION LOSS	0.6 dB (MAX)
AMPLITUDE BALANCE	+/- 0.4 dB (MAX)
PHASE BALANCE	±5° (MAX)
ISOLATION	25 dB (MIN)
VSWR (ALL PORTS)	1.2:1 (MAX)
INPUT POWER (CW @ 1.3:1 OUTPUT VSWR)	30 W (TYP)

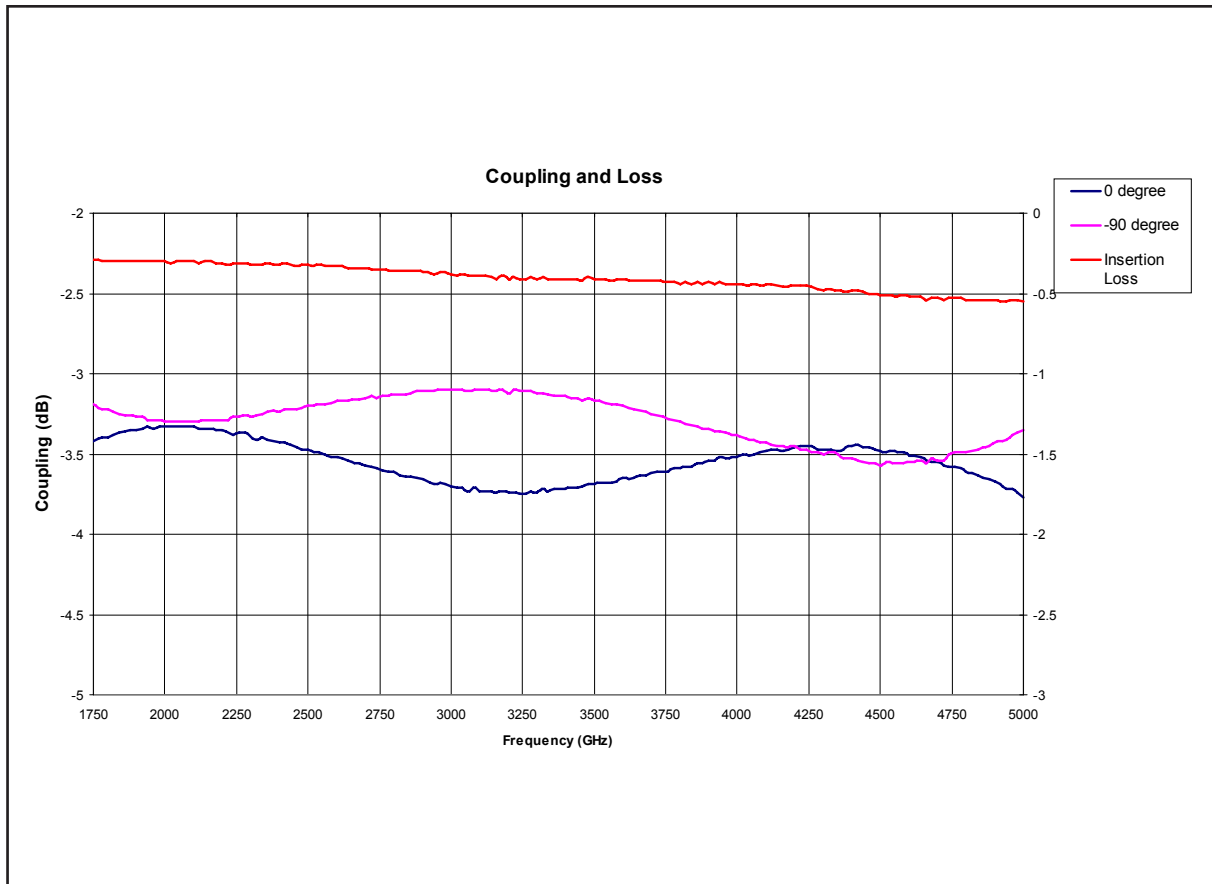
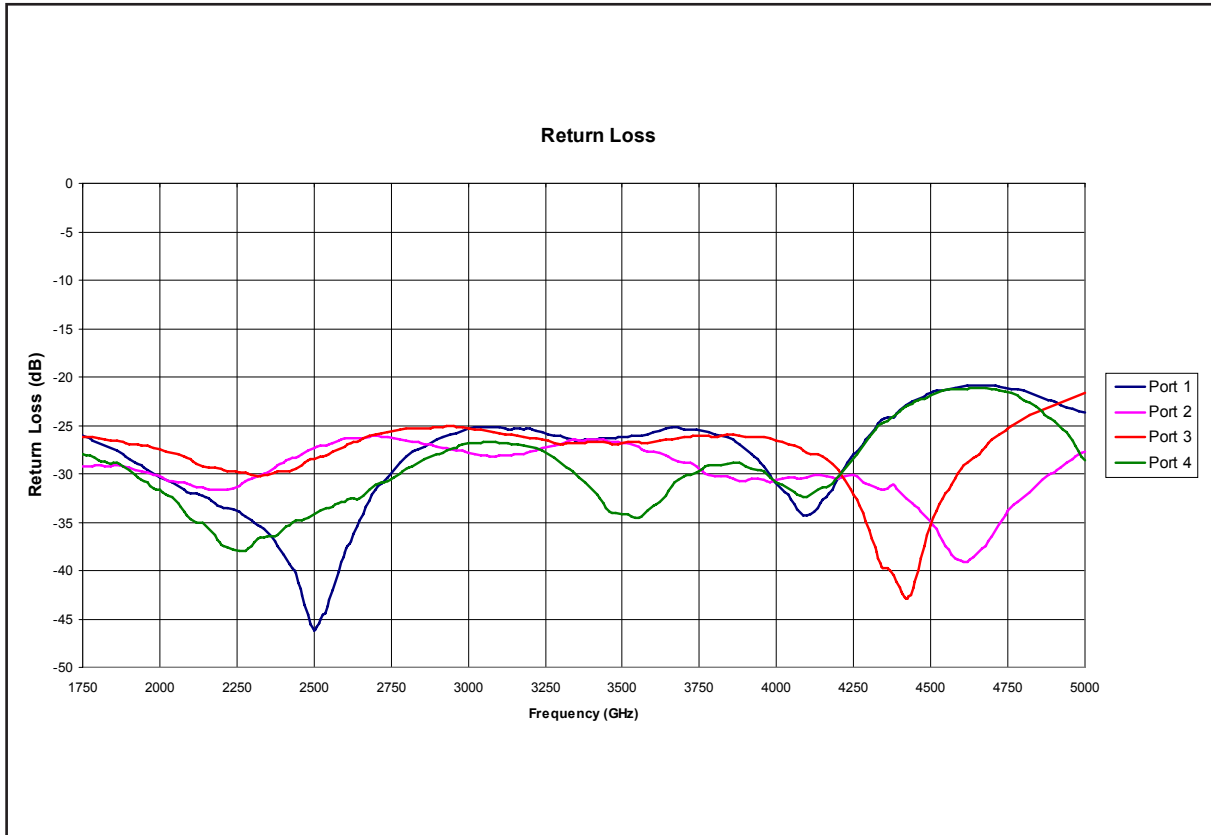
MECHANICAL

SIZE / OUTLINE	1.60 x 0.75 x 0.065 inches
WEIGHT	0.13 oz.
RF INTERFACE	Gold Plated CPW Launch (Surface Mount also available)

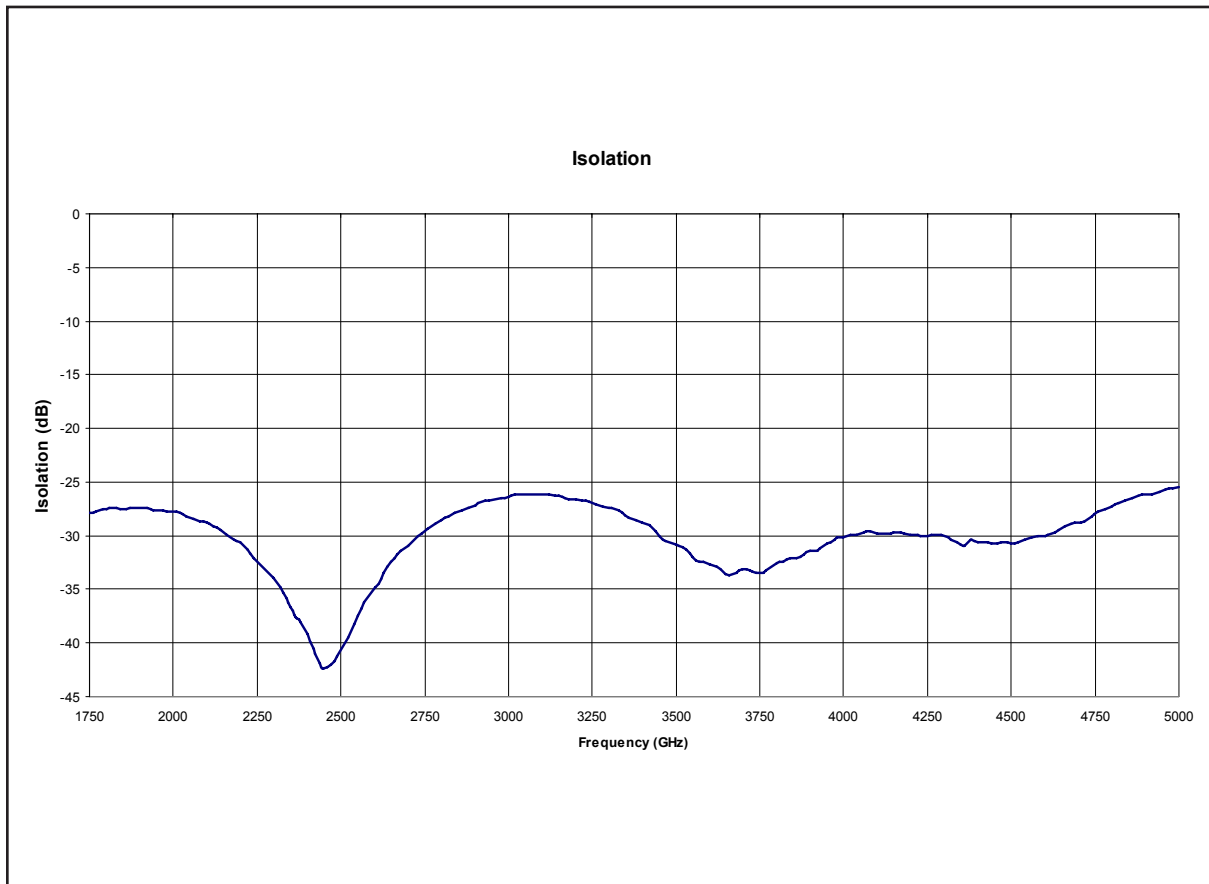
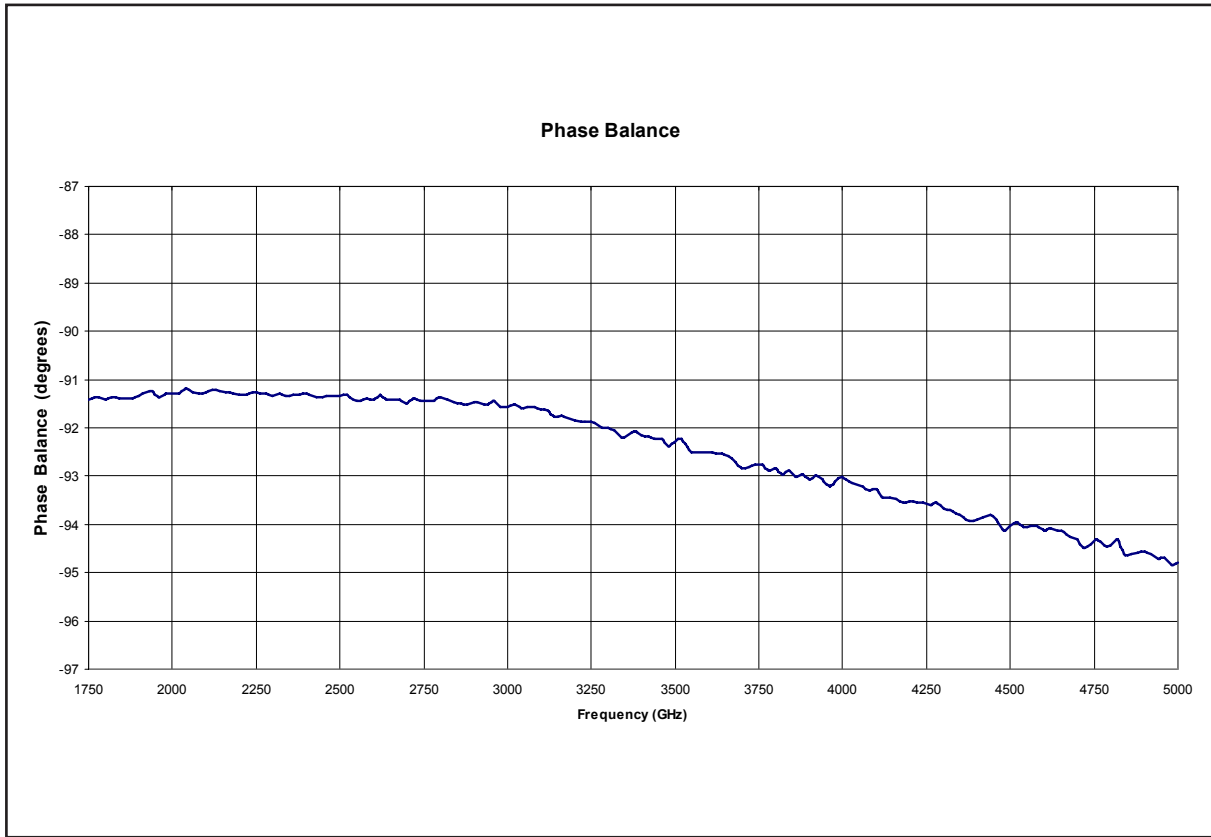
ENVIRONMENTAL

OPERATING TEMPERATURE RANGE	-55° To + 85°, C
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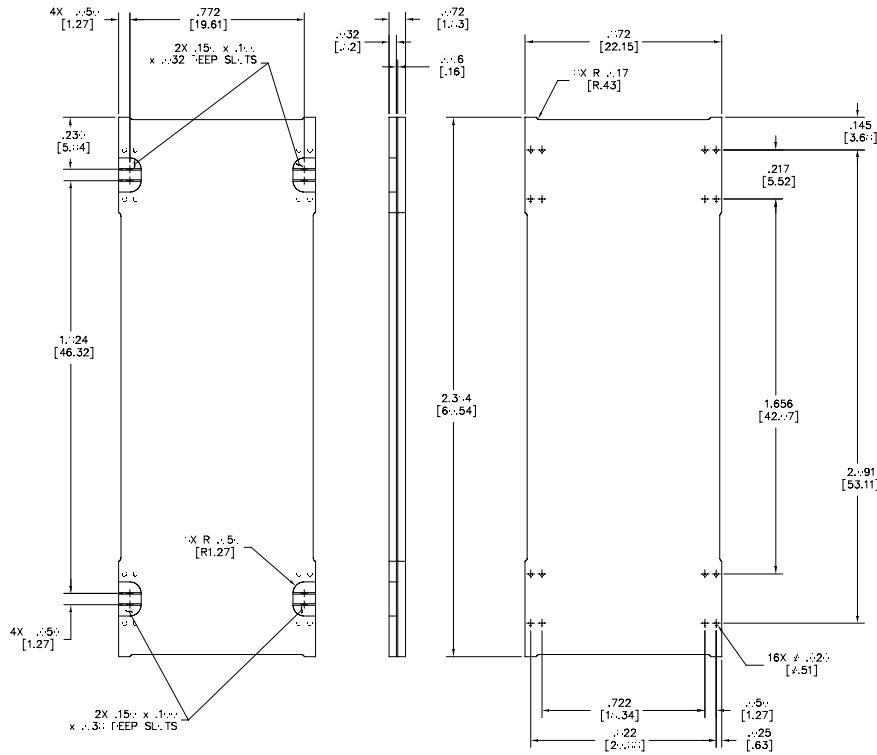
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- NOTES
- TOLERANCES ON ANGLES ±5°, ON 2 PLACE DECIMALS ±.01, ON 3 PLACE DECIMALS (FEATURE LOCATIONS/AREA OF PART) ±.02, ON 3 PLACE DECIMALS (FEATURE LOCATIONS/AREA OF PART) ±.05, ON 4 PLACE DECIMALS ±.0005.
 - MAX. IS LARGEST DIMENSION ALLOWED.
 - DIMENSIONS = INCHES [mm]
 - METRIC EQUIVALENTS ARE TO THE NEAREST .01mm.

NOTES:

Signals applied to any port will split equally between the opposite pair with the adjacent port remaining isolated. The phase relationship is - 90° to the port directly opposite and 0° to the port on the diagonal.