

# Coaxial Hybrids (90°)

0.5 to 18 GHz (Standard & Multi-Octave)

## Features

- Miniature Size
- High isolation
- Low VSWR
- 0.5-18GHz
- Octave and Multi-Octave Bandwidth
- Operating temp. 105°C (125°C storage)
- Qualified to MIL environments
- RF shielded
- Stripline construction
- Delivery from stock

## Terminology

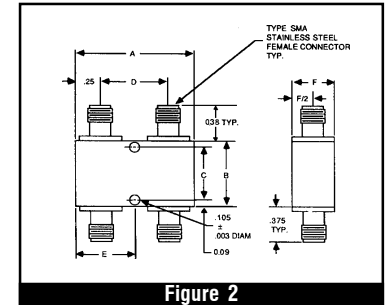
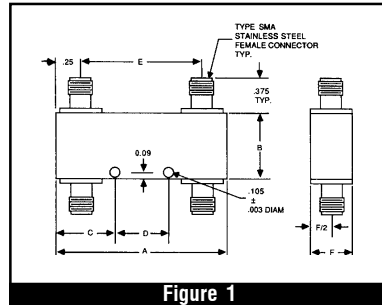
**Coupling Loss** - True loss measured from input port to 0° relative phase output port (Note: DC open circuit between input port and coupled output port).

**Thru Loss** - True loss measured from input port to -90° relative phase output port (Note: DC short circuit between input port and thru output port).

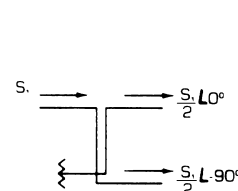
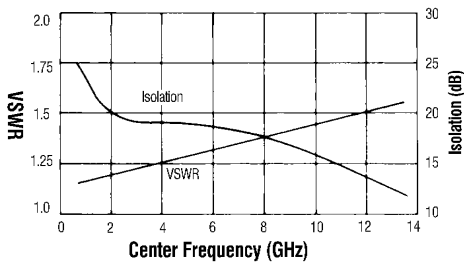
**Isolation** - Attenuation measured between two output ports when remaining ports are terminated in 50 ohms.

## MIDISCO Series MDC 7200

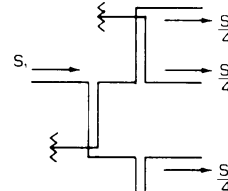
coaxial hybrids are used for non reflective PIN attenuators, switching networks, digital phase shifters, bi-phase modulators, antenna feed networks, double port reflective gain amplifiers, mixers, paralleled amplifiers, power dividers, as well as combiners. When you apply a signal to one of the ports of a 90° hybrid, that signal is equally divided at the two opposite ports with a relative phase shift of 90°. Upon terminating the opposite ports, high isolation is obtained between the two adjacent ports. These characteristics display the versatility of the 90° Hybrid. Note the various applications shown in the diagrams below. All units have high isolation, low VSWR and meet MIL environments. Delivery is from stock.



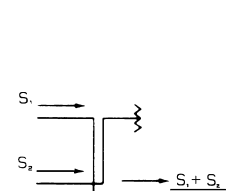
Octave band VSWR and isolation specifications as a function of center frequency



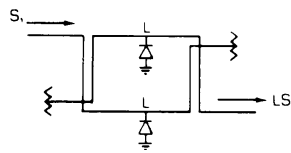
2 Way Power Divider



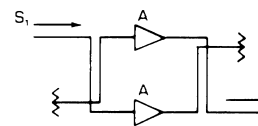
4 Way Power Divider



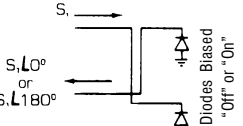
Signal Combiner (3dB Loss)



Non Reflective Pin Attenuator



Paralleled Amplifiers



Bi-Phase Modulator

Model Number	Freq. Range (GHz)	Coupling † or Thru Loss (dB)	Frequency Sensitivity (dB)	VSWR (max.)	Isolation (dB) min	Input Power		Fig.	A	B	C	D	E	F
						Average (W)	Peak (kW)							
Octave Models														
MDC7223	0.5-1	3.1 ±0.6	±0.5	1.10	28	50	3	1	3.060	0.500	0.840	1.370	2.560	0.380
MDC7224	1-2	3.1 ±0.6	±0.5	1.10	28	50	3	1	1.780	0.500	0.640	0.500	1.280	0.380
MDC7225	2-4	3.1 ±0.6	±0.5	1.20	22	50	3	2	1.150	0.500	0.314	0.580	0.660	0.380
MDC7266	2.6-5.2	3.1 ±0.6	±0.5	1.25	20	50	3	2	1.000	0.500	0.314	0.500	0.500	0.380
MDC7226	4-8	3.2 ±0.7	±0.5	1.30	18	50	3	2	1.000	0.500	0.314	0.500	0.500	0.380
MDC7227	6-12.4	3.2 ±0.7	±0.5	1.35	18	50	3	2	1.000	0.500	0.314	0.500	0.500	0.380
MDC7288	7.5-16	3.4 ±0.9	±0.6	1.45	15	40	2	2	1.000	0.580	0.392	0.500	0.500	0.380
MDC7228	12-18	3.4 ±1.0	±0.7	1.50	15	40	1	2	1.000	0.580	0.392	0.500	0.500	0.380
Multi-Octave Models														
MDC7267	2-8	3.3 ±0.80	±0.40	1.30	17	30	3	1	2.600	0.750	0.670	1.260	2.030	0.440
MDC7277	4-12.4	3.3 ±0.80	±0.40	1.40	15	20	2	1	1.720	0.600	0.610	0.500	1.220	0.500
MDC7278	7-18	3.5 ±1.25	±0.75	1.50	13	20	1	2	1.000	0.580	0.392	0.500	0.500	0.380

† Includes frequency sensitivity.

Dimensions are in inches