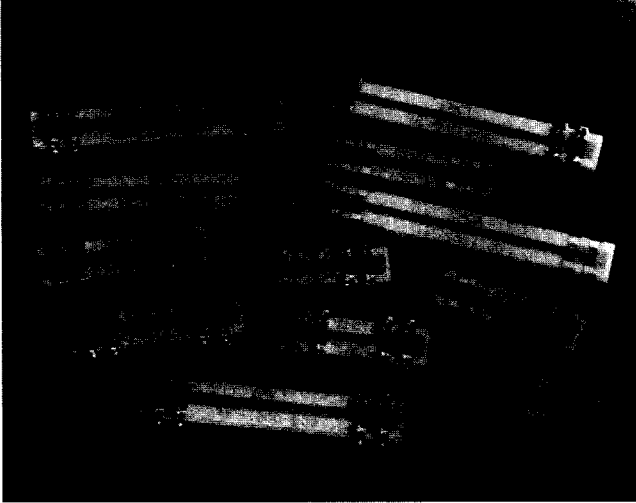


HYBRID COUPLERS



EMC's thick film quadrature hybrid 3 dB couplers (U.S. patent #5, 521, 563) offer high performance and low cost for a variety of applications. These include balanced amplifiers, power dividers and combiners, voltage variable PIN diode attenuators, balanced mixers and modulators, antenna feed networks, and signal detection and injection. Our standard models offer exceptional value in the cellular, Global Positioning System (GPS), and Personal Communications Network (PCN) frequency bands. We package these couplers on tape and reel or magazines for automated pick and place installation. Options include onboard port terminations, edge clips, and pretinning. All parts can be customized to meet special requirements.

EMC's thick film process offers the following advantages over competing technologies:

- High Power Handling - 250 watts
- Small Size
- Low Cost in Production Quantities
- Rugged Construction
- Superior Temperature Stability
- Integrated Crossovers - No wire bonds
- Surface Mountable

90° HYBRID COUPLERS

SPECIFICATIONS:

Power Handling: 250 watts continuous; on board terminations 2 watts maximum
 Material: Alumina
 Operating Temperature Range: -55°C to +125°C
 Termination Material: Platinum silver

3 dB QUADRATURE HYBRID COUPLERS

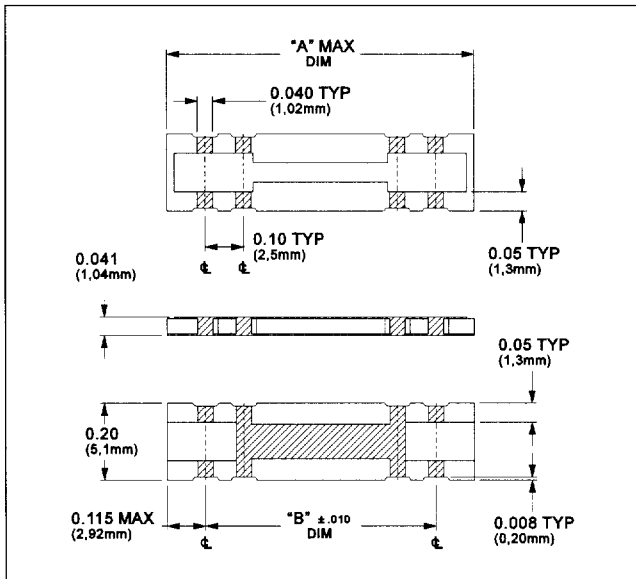
Model Number	Frequency (MHz)	VSWR Max	Insertion Loss (dB)	Amplitude Balance (dB)	Phase Balance Max (deg)	Isolation Min (dB)	"A" Dimension (inches)	"B" Dimension (inches)
HF-900-200	800-1000	1.25	0.35	± 0.4	± 2.0	20	1.41	1.20
HF-1200-800	800-1600	1.30	0.5	± 0.5	± 4.0	18	1.21	1.00
HF-1500-1000	1000-2000	1.30	0.5	± 0.5	± 4.0	17	0.81	0.60
HF-2050-700	1700-2400	1.30	0.5	± 0.5	± 4.0	18	0.71	0.50

OPTIONS:

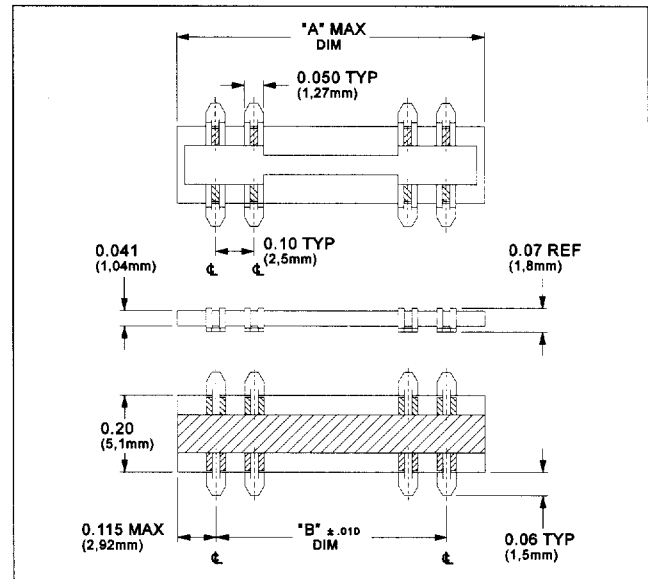
- Edge clips available. Add suffix "E" to part number.
- Pretinning available on bottom side only. Add suffix "S" to part number.
- Onboard terminations available on special order.

▶ See Application Note 002 on page 83.

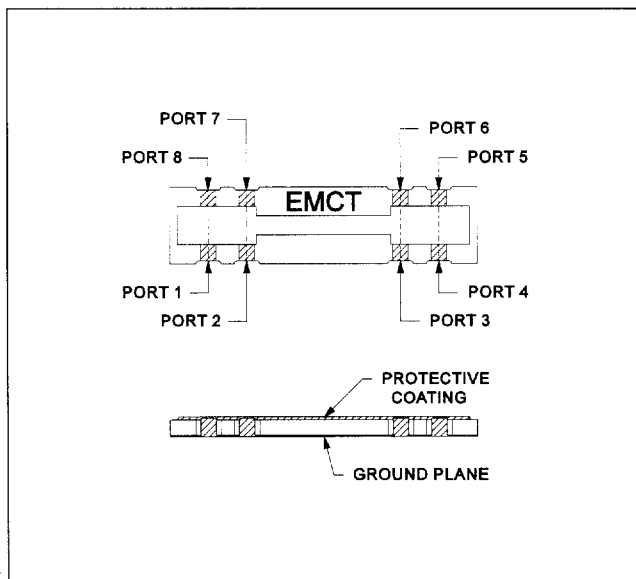
HYBRID COUPLERS



Planar & Pretinned Couplers



Couplers with Edge Clips



PORT DESIGNATIONS

SERIES HF

C = -3 dB Coupled (0°)

D = -3 dB Direct (90°)

I = Isolated

Ports	1	4	5	8
1	-	I	D	C
4	I	-	C	D
5	D	C	-	I
8	C	D	I	-

Ports 2, 3, 6, and 7 connected to ground.

► See page 76 for tabulated dimensions.