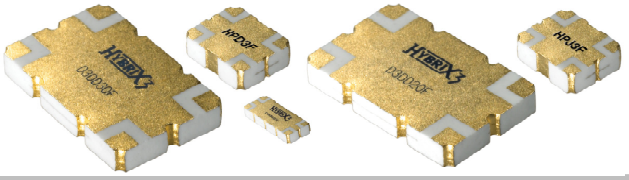
LTCC QUADRATURE HYBRID COUPLERS



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FEATURES

- Low Profile Surface Mount Package
- High Power
- Low Case Junction Resistance
- Low Insertion Loss
- Excellent Amplitude and Phase Balance
- High Isolation
- RoHS Compliant
- Tape and Reel for High Volume Production
- 100% RF Tested

APPLICATIONS

- Power Amplifiers
- Signal Distribution Networks
- Antenna Feeds
- Switch Networks
- High Power Combiners/Splitters
- Phase Shifters

GENERAL DESCRIPTION

The HAP3F is a high performance 3dB hybrid coupler in a surface mount package. This low profile coupler handles up to 300 watts of CW power. The HAP3F is designed for those demanding applications where low loss, excellent amplitude and phase balance are required.

The HAP3F is manufactured with materials that have thermal expansion characteristics compatible with industry standard board materials like RO3003, RO4350, FR4 and others. The couplers are available in a RoHS complaint finish and packaged in both reel and tube.

ELECTRICAL SPECIFICATIONS*

3dB HYBRID COUPLER							
Frequency MHz	Isolation dB (min)	Insertion Loss dB (max)	VSWR (max)	Amplitude Balance dB (max)	Phase Error °	Power Handling ** Watts CW	Operating Temperature °C
2300-2700	20	0.12	1.2	0.3	90 ± 3	300	-55 to +125

Specification Notes:

* Measured on Florida RF Labs test fixture. Specifications are subject to change without notice.
** Power rating is specified at 95˚C base temperature

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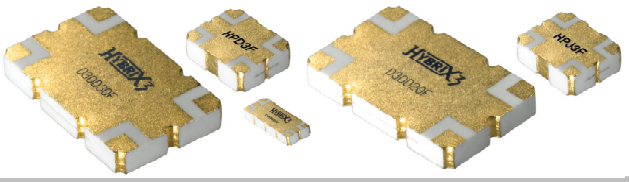

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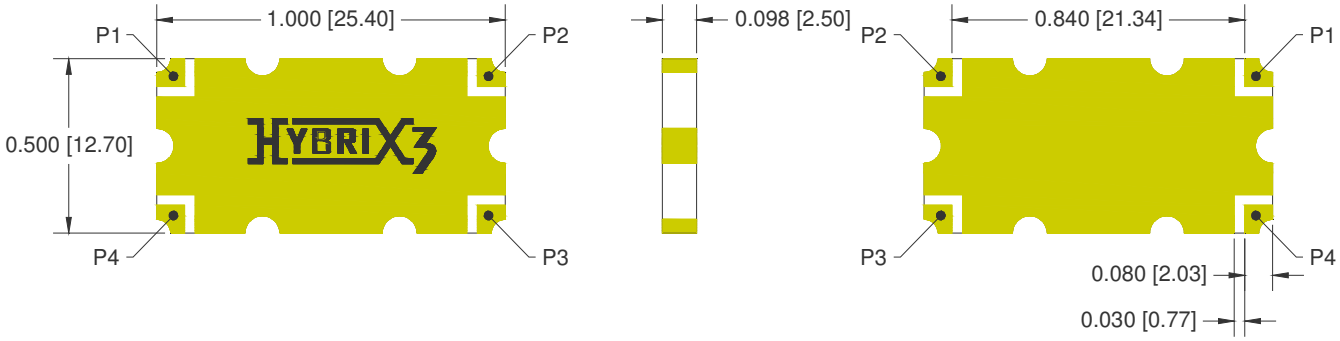
COUPLER PIN CONFIGURATION AND MECHANICAL OUTLINE

PORTS	P1	P2	P3	P4
P1	-	ISO	-90°	0°
P2	ISO	-	0°	-90°
P3	-90°	0°	-	ISO
P4	0°	-90°	ISO	-



COMMONLY USED ATTACHMENT MATERIALS

Material	Composition	Thermal Conductivity (Watts/cm/°C)	Melting Temperature (°C)
Gold-Tin Solder	80% Gold / 20% Tin	0.58	280
Lead-Free Solder	99.3% Tin – 0.7% Copper	N/A	227
Lead-Free Solder	96.5% Tin / 3.5% Silver	0.33	221
Lead-Free Solder	96.5% Tin / 3% Silver / 0.5% Copper	N/A	217 - 220
Sn63 Solder	63% Tin / 37% Lead	0.49	183