

## Drop-In 90 Degree Hybrid Coupler from 100 MHz to 520 MHz Rated to 200 Watts

The FMCP1029 operates from 100 MHz to 500 MHz and can handle 150 watts of power with 16 dB isolation. The package is 3.3 inch by 1.5 inch with gold plated silver leads and can be attached to a heat sink and PCB by screws. Gold plated leads are resistant to oxidation for ease of soldering and ensuring superior electrical performance of 1.3:1 VSWR and an insertion loss of 0.5 dB.

The FMCP1029 is part of Fairview Microwave's family of 90 degree hybrid couplers in drop-in packages. These couplers feature small drop-in packages that can handle power up to 1,000 Watts. They are available in both narrow and broad bandwidths. These quadrature hybrids are excellent for any situation to either equally split an input signal into two paths with a 90 degree phase shift between them or to combine signals while maintaining high isolation between them.

### Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	100		520	MHz
Impedance		50		Ohms
Phase Difference		90		Degrees
Insertion Loss			0.45	dB
Isolation	17			dB
VSWR			1.3:1	
Amplitude Balance		0.75		dB
Phase Balance		5		Degrees
Input Power (CW)			200	Watts

### Mechanical Specifications

#### Size

Length	3.3 in [83.82 mm]
Width	0.29 in [7.37 mm]
Height	1.5 in [38.1 mm]
Weight	0.0112 lbs [5.08 g]
Body Plating Specification	MIL-DTL-5541

#### Configuration

RF Connector Type	Pin
Contact Material and Plating	Silver, Gold

### Environmental Specifications

#### Temperature

Operating Range	-55 to +85 deg C
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### Compliance Certifications (see [product page](#) for current document)

### Plotted and Other Data

Notes:



### Features:

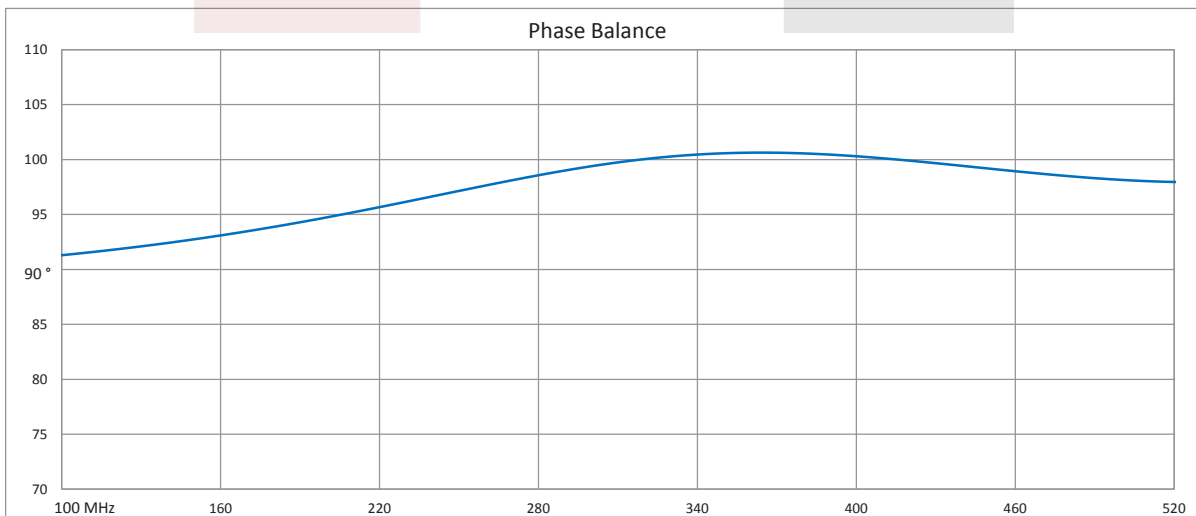
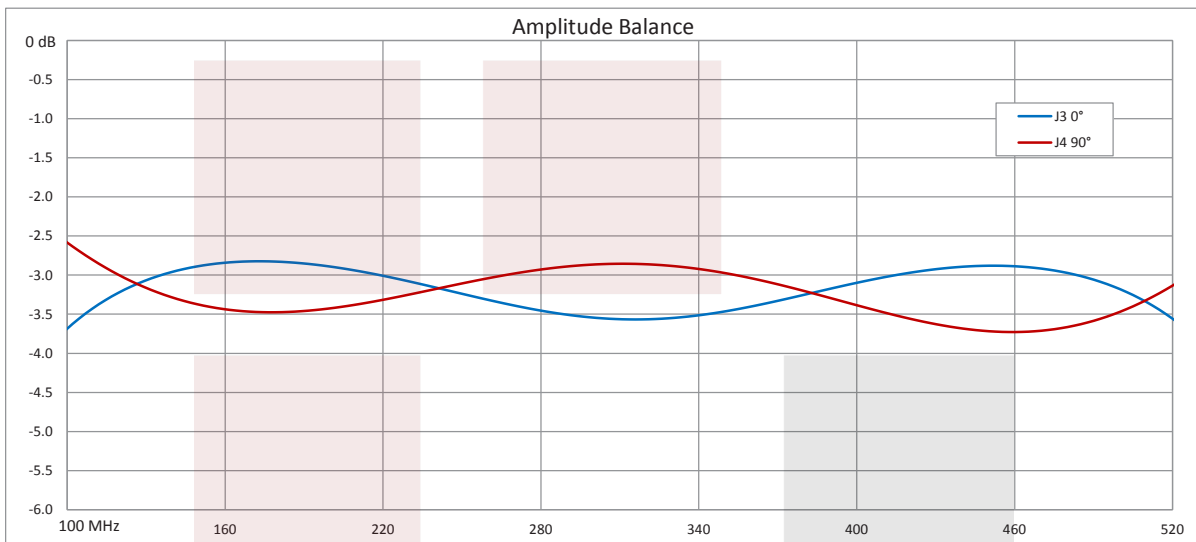
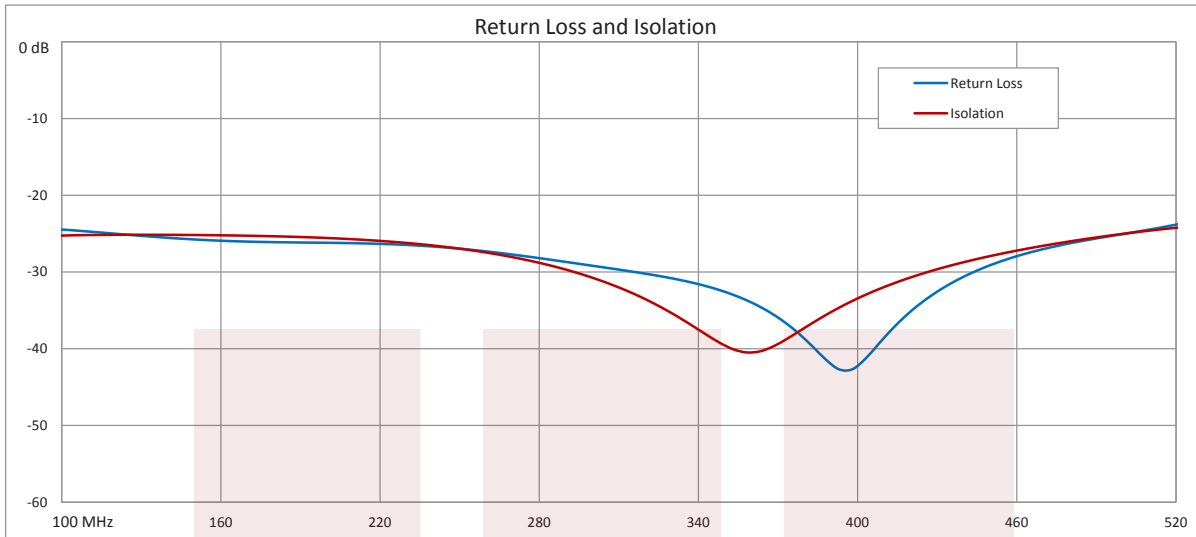
- High Power
- 16 dB isolation
- 100 MHz to 500 MHz Frequency Range
- Gold Plated Silver Leads
- 3.3 inch by 1.5 inch package
- Clear Chem Film Per MIL-DTL-5541

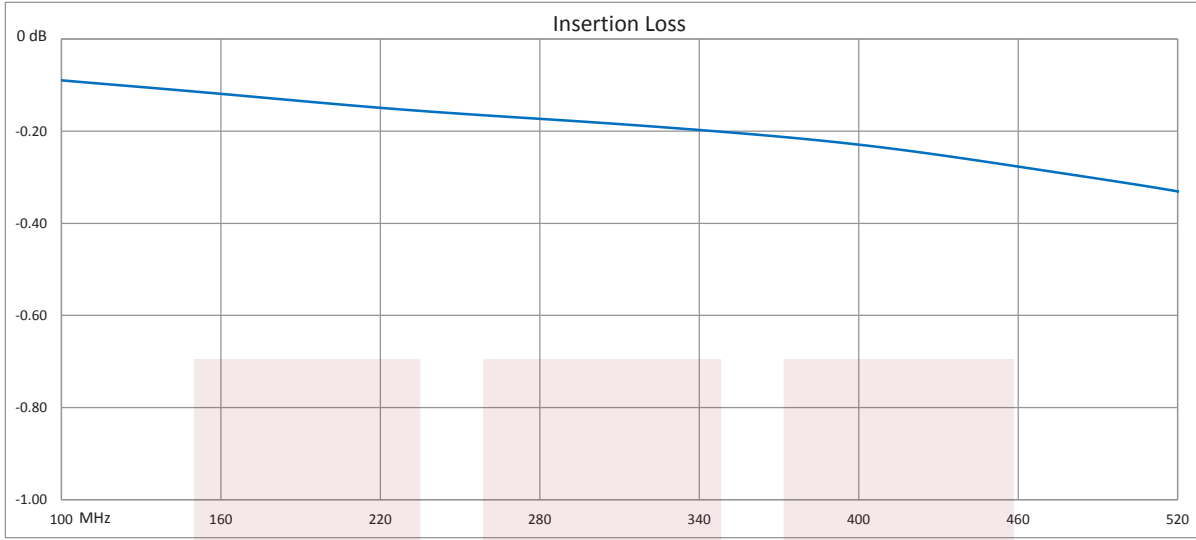
### Applications:

- Test and measurement
- Military Communications
- Commercial Communications
- Wireless Communications
- SATCOM
- Military Electronic Systems

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**Typical Performance Data**





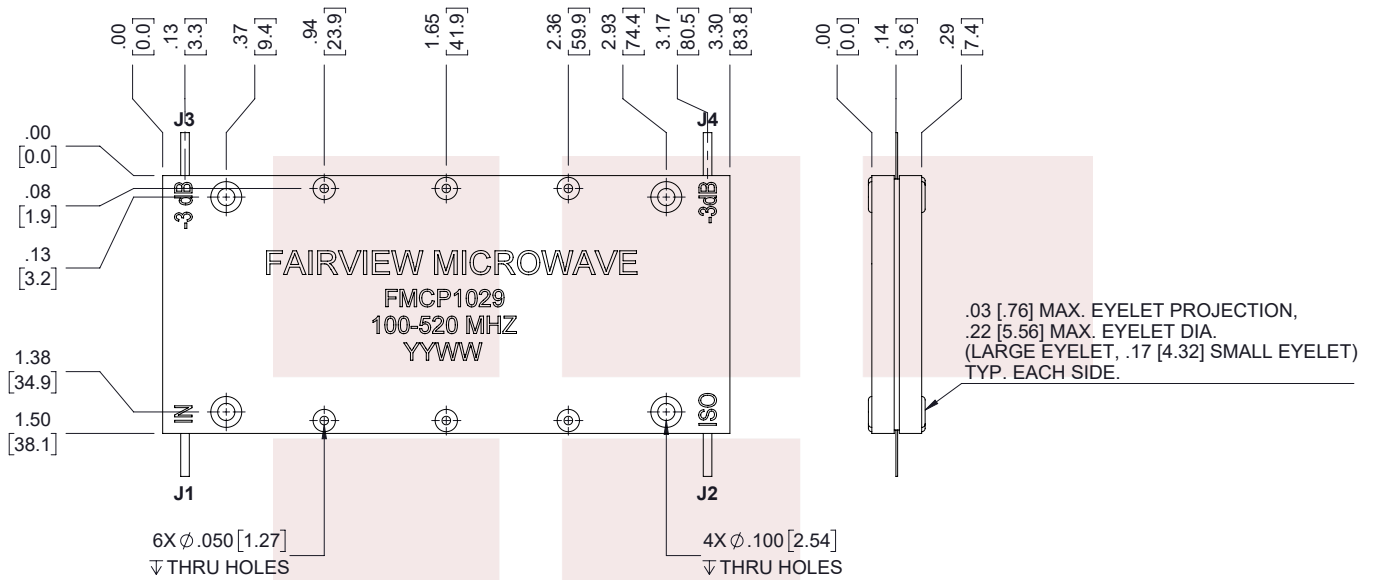
Drop-In 90 Degree Hybrid Coupler from 100 MHz to 520 MHz Rated to 200 Watts from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Drop-In 90 Degree Hybrid Coupler from 100 MHz to 520 MHz Rated to 200 Watts FMCP1029](#)

URL: <https://www.fairviewmicrowave.com/pin-90-degree-hybrid-coupler-100-520-mhz-200-watts-fmcp1029-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PCR FMCP1029	3/25/2021	S.PONG

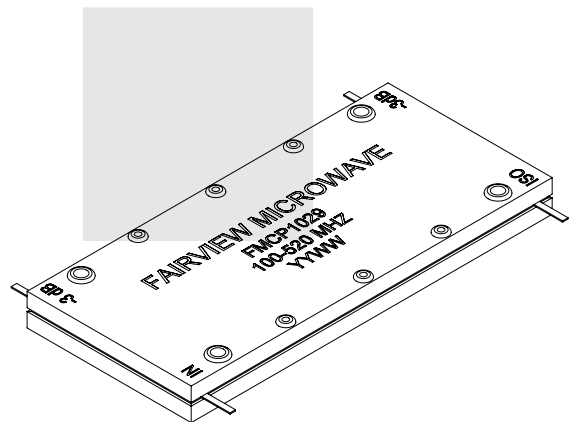


.03 [ .76] MAX. EYELET PROJECTION,  
.22 [5.56] MAX. EYELET DIA.  
(LARGE EYELET, .17 [4.32] SMALL EYELET)  
TYP. EACH SIDE.

PORT CONFIGURATION				
INPUT	J1	J2	J3	J4
J1	----	ISOLATION	-3dB < 0°	-3dB < -90°
J2	ISOLATION	----	-3dB < -90°	-3dB < 0°
J3	-3dB < 0°	-3dB < -90°	----	ISOLATION
J4	-3dB < -90°	-3dB < 0°	ISOLATION	----

**NOTES:**

- LEAD MATERIAL: GOLD PLATED 99.99% PURE SILVER  
.055 [1.27] THICK X .05 [1.27] WIDE X .150 [3.81] MIN. LONG.



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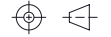
TITLE  
Drop-In 90 Degree Hybrid Coupler from 100 MHz to 520 MHz Rated to 200 Watts

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES: CABLE LENGTH (L) TOLERANCES:

X = ±.2 [5.08] FRACTIONS L ≤ 12 [305] = +1 [25] / -0  
XX = ±.02 [.51] ± 1/32 12 [305] < L ≤ 60 [1524] = +2 [51] / -0  
.XXX = ±.005 [.13] ANGLES ± 1° 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0  
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0  
300 [7620] < L = +5% / -0

THIRD-ANGLE PROJECTION



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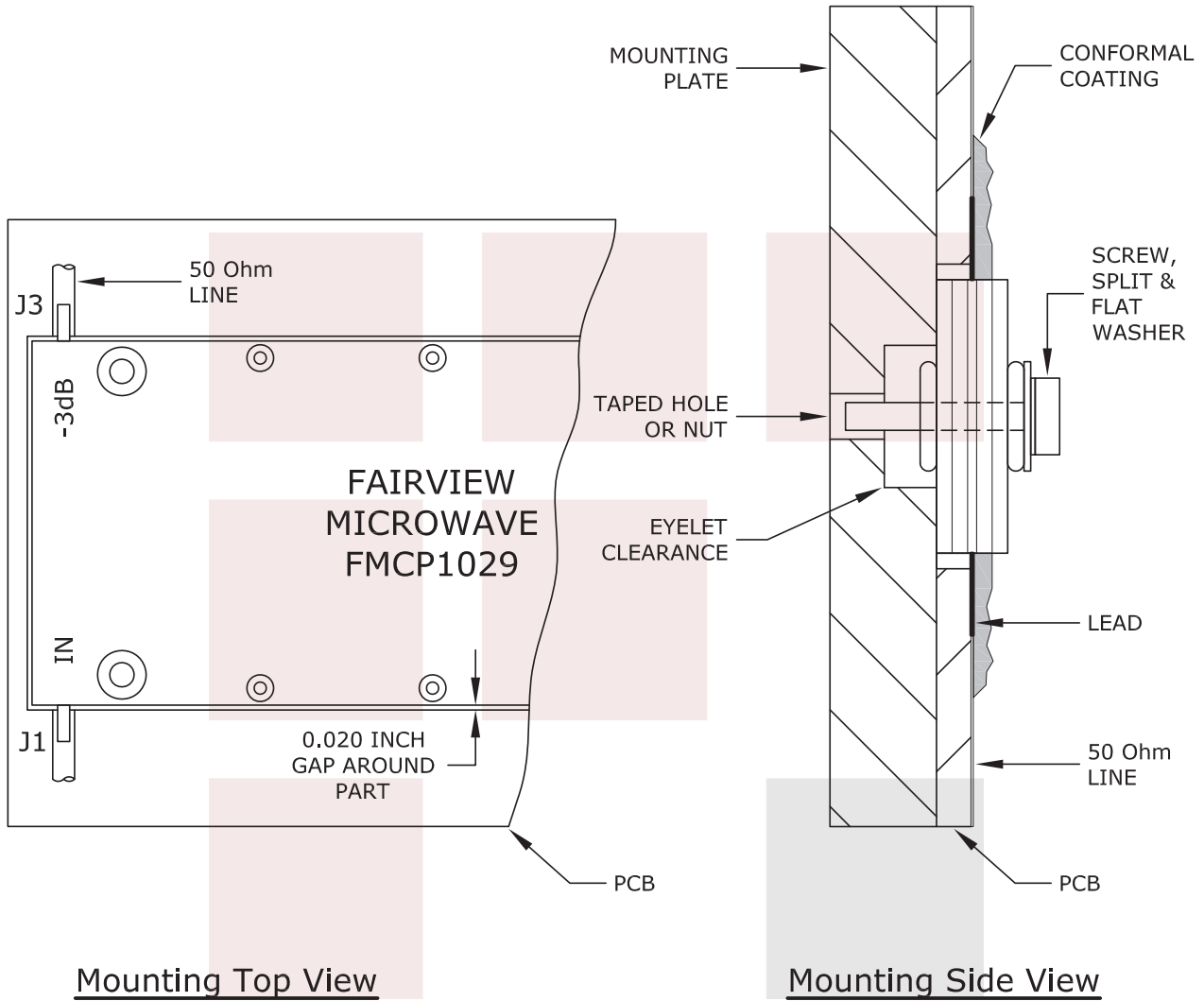
SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

SIZE A	CAGE CODE 3FKR5	DRAWN BY K.DANG	ITEM NO. FMCP1029	REV A
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T-Rev.D



- NOTE:**
1. CONFORMAL COATING IS RECOMMENDED AT THE LEAD / 50 Ohm LINE INTERFACE FOR HIGH POWER APPLICATIONS TO PREVENT VOLTAGE ARCING.
  2. TO INSURE PROPER GROUNDING THE BOTTOM PLATE OF COUPLER MUST LAY FLAT ON MOUNTING SURFACE. PLEASE ALLOW CLEARANCE FOR ALL EYELET PROJECTIONS IN BASE PLATE.
  3. SOLDER LEADS TO 50 Ohm LINES USING LEAD FREE OR Sn63 ALLOY.
  4. TORQUE STAINLESS STEEL SCREW, SPLIT AND FLAT WASHER TO 2.5 in-lbs.

<b>FAIRVIEW MICROWAVE INC.</b> ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM		NOTES: 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm].			
TITLE Drop-In 90 Degree Hybrid Coupler from 100 MHz to 520 MHz Rated to 200 Watts		DWG NO FMCP1029		CAGE CODE 3FKR5	
CAD FILE	061616	SHEET	SCALE	N/A	SIZE A 2233