

1.0 mm Directional Coupler, 20 GHz to 110 GHz Rated to 1 Watt

Directional couplers are indispensable components for isolating, separating and combining signals. For example, they provide a simple way of sampling microwave signals. They also can make accurate attenuator measurements since reflections are eliminated. The FM2CP1162 is a directional coupler that operates from 20 to 110 GHz and can handle up to 1 Watt (CW) with 7 dB directivity minimum and 1.4:1 VSWR typical. The package interface uses 1.0 mm (W1) female connectors.

The FMCP1162 is part of Fairview Microwave's family of directional/dual-directional couplers that offer coupling ratios up to 50 dB with excellent performance featuring high directivity, low insertion loss and VSWR. They are available in both narrow and broad bandwidths and can be used in a wide variety of applications including signal sampling, VSWR measurements, power combining and distribution.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	20		110	GHz
Impedance		50		Ohms
Coupling		17 ±8		dB
Insertion Loss			5.5	dB
Directivity	7			dB
Isolation	23			dB
Input Power (CW)			1	Watt

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	20-25	25-50	50-65	65-80	80-110	GHz
Insertion Loss, Max	2.3	2.3	3.7	3.7	5.5	dB
Main Line VSWR, Max	1.4:1	1.9:1	1.9:1	1.9:1	1.9:1	
Directivity, Min	7	7	10	10	7	dB
Coupling, Typ	20	15	12.5	11	11	dB
Frequency Sensitivity, Typ ±5		±5	±3.5	±2	±2	dB
Isolation, Min	24	24	23	23	23	dB

Mechanical Specifications

Size

Length	1.23 in [31.24 mm]
Width/Dia.	0.354 in [8.99 mm]
Height	0.886 in [22.5 mm]
Weight	0.035 lbs [15.88 g]

Configuration

Package Type	Connectorized
Input Connector	1.0mm Female
Output Connector	1.0mm Female
Coupled Connectors	1.0mm Female



Features:

- Directional Coupler
- 20 GHz to 110 GHz Frequency Range
- 1.0 mm (W1) Connectorized Design
- Typical Coupling Value of 17±8 dB
- Max Power 1 Watt (CW)
- Directivity > 7 dB
- Typical VSWR of 1.4:1

Applications:

- Test and Measurement
- Military Communications
- Commercial Communications
- Wireless Communications
- SATCOM

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Environmental Specifications

Temperature

Operating Range +0 to +70 deg C
Storage Range -55 to +125 deg C

Humidity 95% at 40 °C, 96 hours, Test 103B, Condition B
Shock 100 G peak sawtooth, method 213, Condition B

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

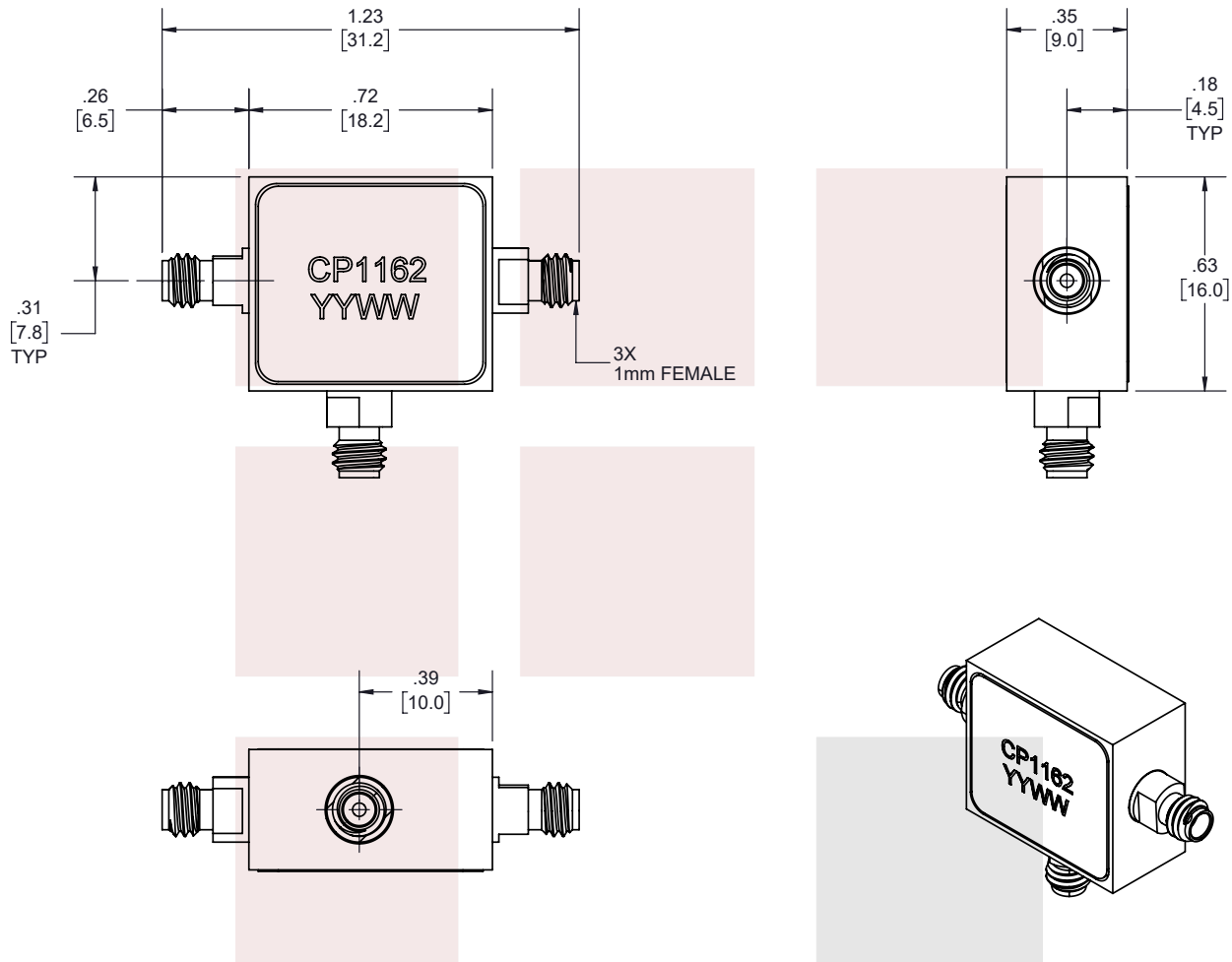
1.0 mm Directional Coupler, 20 GHz to 110 GHz Rated to 1 Watt from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [1.0 mm Directional Coupler, 20 GHz to 110 GHz Rated to 1 Watt FMCP1162](#)

URL: <https://www.fairviewmicrowave.com/1.0mm-0-db-20-ghz-to-110-ghz-fmcp1162-p.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/8/2022	S. PONG



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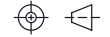
TITLE
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UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

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%L / -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. FMCP1162	REV A
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T-Rev.D