

SMA Directional Coupler 10 dB 500 MHz to 12.4 GHz Rated to 30 Watts

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 MC0512A-10 is a 10 dB directional coupler that operates from 500 MHz to 12.4 GHz with 15 dB directivity minimum and can handle up to 30 Watts of CW power. The package interface has SMA inputs on all of the ports.

The MC0512A-10 is part of Fairview Microwave's family of directional/dual-directional couplers that offer coupling ratio 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.



Features:

- Directional Coupler
- 500 MHz to 12.4 GHz Frequency Range
- Coupling 10±1.25 dB
- Directivity > 15 dB
- Max Power 30W (CW)

Applications:

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

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	0.5		12.4	GHz
Impedance		50		Ohms
Coupling		10 ±1.25		dB
Freq. Sensitivity		±1		dB
Insertion Loss			2	dB
Directivity	15			dB
Main Line VSWR			1.22:1	
Sec. Line VSWR			1.22:1	
Input Power (CW)			30	Watts
Input Power (Peak)			3	kWatts

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	0.5 to 4	4 to 8	8 to 12.4			GHz
Insertion Loss, Typ	0.96	1.16	1.59			dB
Directivity, Typ	20	17	17			dB

Electrical Specification Notes:

Values specified at +25°C, sea level.

Coupling includes frequency sensitivity.

Power rating is specified for a load VSWR of 1.2:1 or better.

Mechanical Specifications

Size

Length	4.4 in [111.76 mm]
Width/Dia.	0.6 in [15.24 mm]
Height	0.38 in [9.65 mm]

Finish	Clear
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Fairview Microwave
 301 Leora Ln., Suite 100
 Lewisville, TX 75056
 Tel: 1-800-715-4396 / (972) 649-6678
 Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

Configuration

Input Connector	SMA Female
Output Connector	SMA Female
Coupled Connectors	SMA Female

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

Plotted and Other Data

Notes:

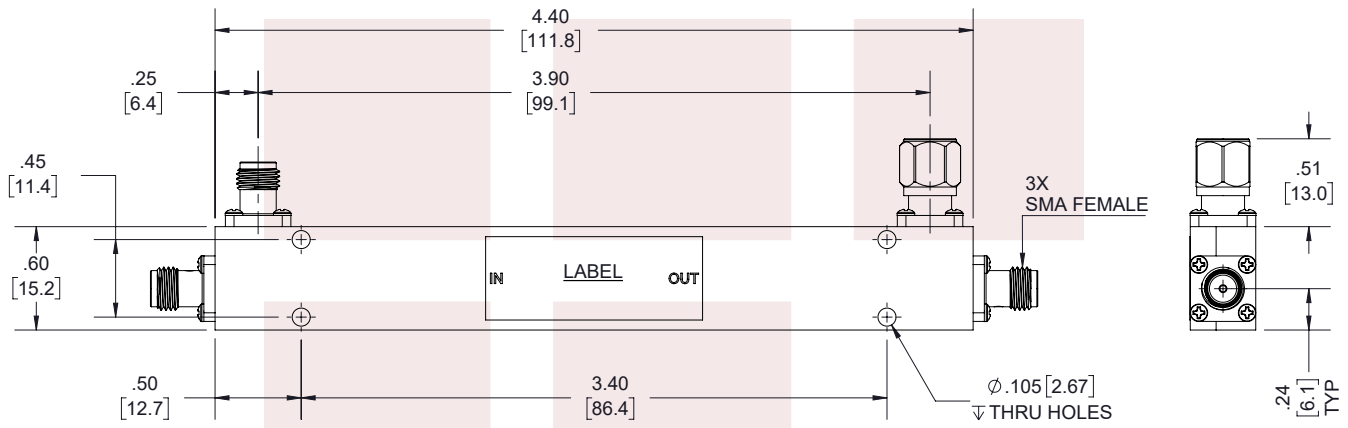
SMA Directional Coupler 10 dB 500 MHz to 12.4 GHz Rated to 30 Watts from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SMA Directional Coupler 10 dB 500 MHz to 12.4 GHz Rated to 30 Watts MC0512A-10](#)

URL: <https://www.fairviewmicrowave.com/sma-directional-standard-10-db-12.4-ghz-mc0512a-10-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	INITIAL RELEASE	6/29/2020	S.PONG



LABEL:

FAIRVIEW MICROWAVE
MC0512A-10
D/C: YYWW

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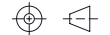
TITLE
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UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES: CABLE LENGTH (L) TOLERANCES:

.X = ± 2 [5.08]	FRACTIONS ± 1/32	L ≤ 12 [305] = +1 [25] / -0
.XX = ± 0.2 [5.1]	ANGLES ± 1°	12 [305] < L ≤ 60 [1524] = +2 [51] / -0
.XXX = ± 0.005 [0.13]		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. MC0512A-10	REV A
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T-Rev.D