APTDC-30-06001800-SMA

Directional Coupler 30 dB SMA Female 6 to 18 GHz

Directional Couplers Technical Data Sheet

Product Description

Directional couplers are important components for use in isolating, separating, replicating, and combining microwave signals. They can serve as accurate attenuator measurements as they eliminate reflections. They are incredibly useful in sampling RF signals for use in detectors, gain control and feedback loops.

The APTDC-30-06001800-SMA is part of AmpliTech's catalog of single and dual directional couplers that offer a wide range of coupling values and frequency ranges.

Specifications	Min	Typ	Max	Min
Frequency	6		18	GHz
Impedance		50		Ohm
Coupling		30	± 2.0	dB
Frequency Sensitivity (Flatness)		± 0.5	± 1.5	dB
Mainline Loss[1]		0.4	0.6	dB
Directivity	11	14		dB
Return Loss (In and Out)	15	21		dB
Return Loss (Coupling)	14	19		dB
Input Power (CW)[2]			50	Watts (CW)

Mechanical

Connector Interface	SMA-Female
Operating Temperature[2]	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight Estimate	0.8 oz (22.7 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

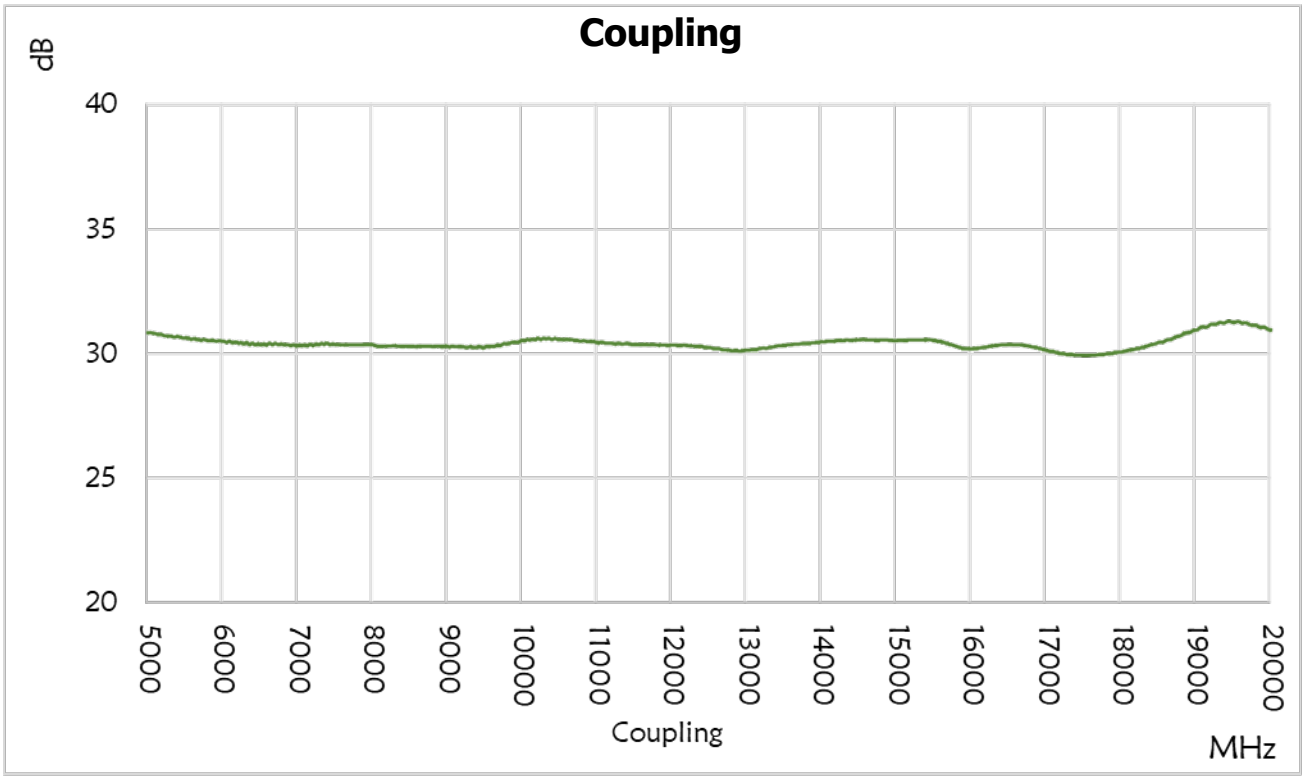
Materials

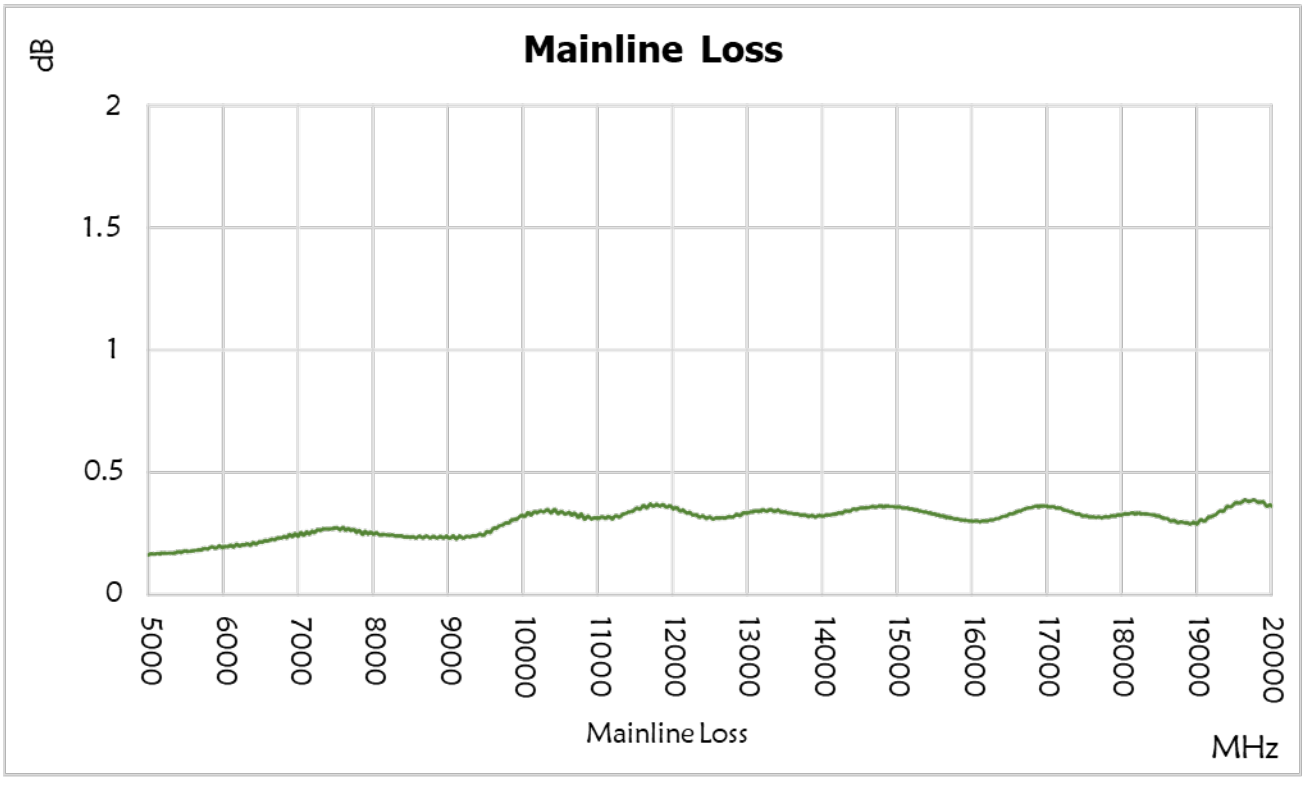
RoHS /REACH Compliant[3]	Yes
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Gray Paint

1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR
3. Electrical specifications at +25 °C only.
4. To the best of our knowledge at the time of publication.
5. Non-RoHS solder is available upon request.

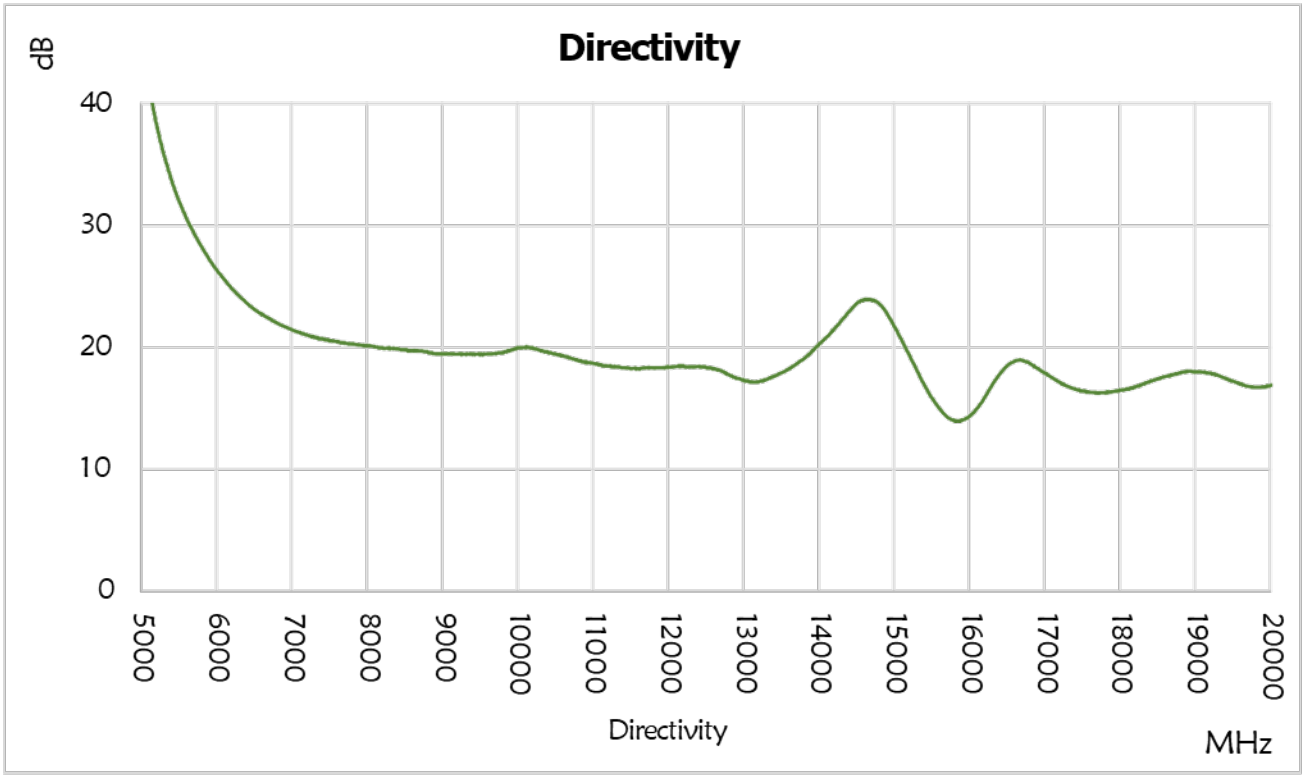
155 Plant Ave Hauppauge, New York 11716 • Tel: 631-521-7831 • Fax: 631-521-7871
Website: www.amplitechinc.com • Email: info@amplitechinc.com

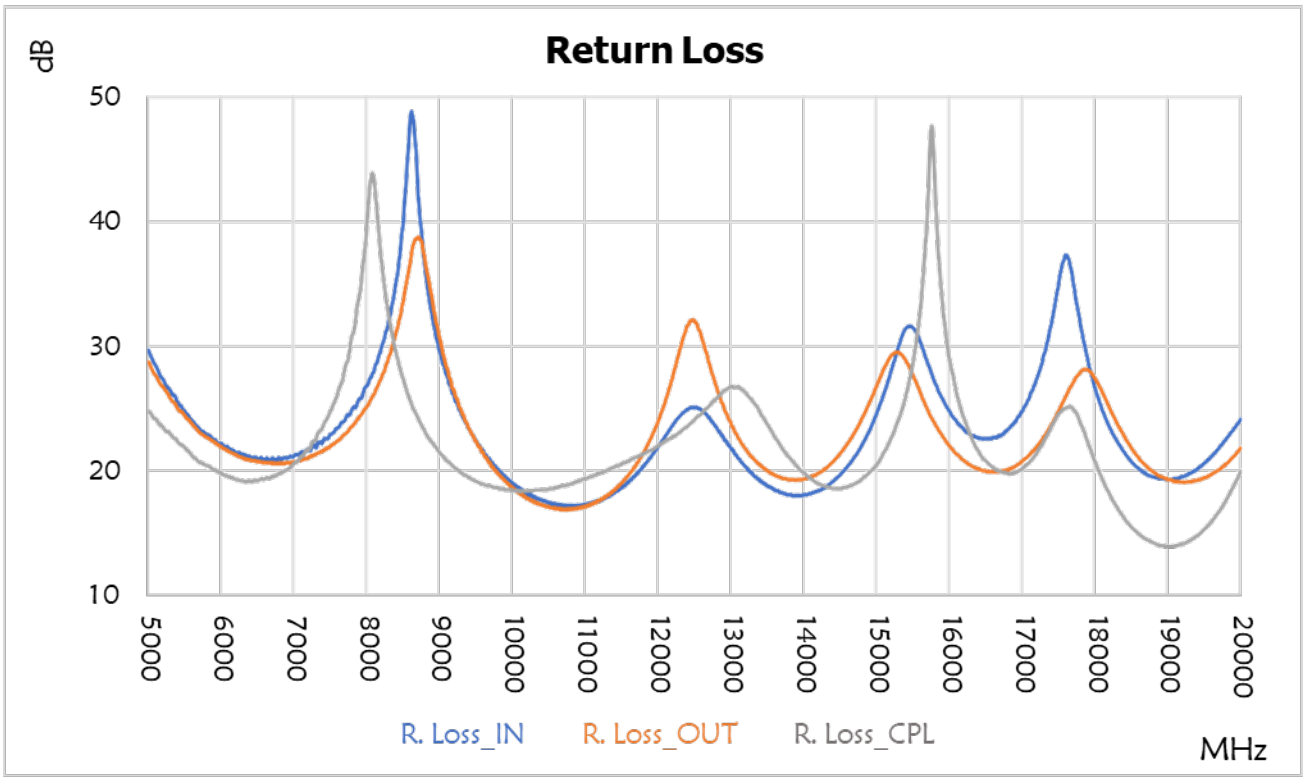
Typical Performance at +25 °C





Typical Performance at +25 °C



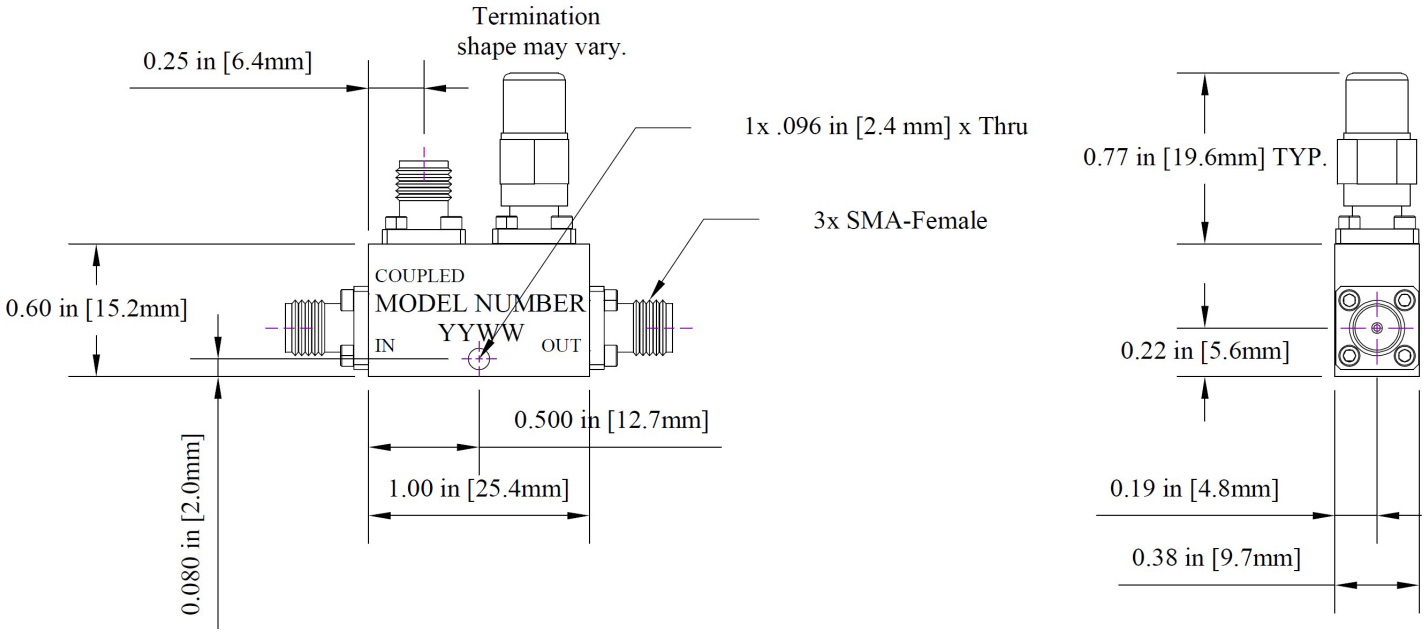


155 Plant Ave Hauppauge, New York 11716 • Tel: 631-521-7831 • Fax: 631-521-7871
Website: www.amplitechinc.com • Email: info@amplitechinc.com

Typical Performance at +25 °C

Frequency (MHz)	Return Loss (dB) In	Return Loss (dB) Out	Cpl.	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl.	Directivity (dB)
5000	29.4	28.0	24.9	0.2	30.9	42.5
5500	24.5	23.8	21.7	0.1	30.6	30.9
6000	22.4	21.9	19.7	0.4	30.6	25.8
6500	20.6	20.9	19.4	0.0	30.2	22.9
7000	21.8	21.0	20.7	0.4	30.4	21.3
7500	23.4	22.3	25.1	0.2	30.4	20.6
8000	26.7	26.0	42.0	0.2	30.4	20.2
8500	43.8	36.3	26.8	0.3	30.2	19.9
9000	28.7	29.6	21.3	0.1	30.2	19.5
9500	23.0	22.4	19.1	0.6	30.7	19.7
10000	19.1	18.6	18.4	0.1	30.3	19.8
10500	17.3	16.9	18.6	0.5	30.9	19.8
11000	16.8	16.8	19.4	0.4	30.3	18.8
11500	18.8	19.4	20.7	0.2	30.5	18.4
12000	22.5	25.5	22.2	0.4	30.5	18.4
12500	24.9	30.5	24.4	0.3	30.1	18.4
13000	21.1	22.4	26.8	0.5	30.3	17.3
13500	18.4	19.5	23.5	0.2	30.3	18.3
14000	18.1	19.5	19.8	0.4	30.6	20.8
14500	20.1	22.1	18.6	0.4	30.6	24.0
15000	25.5	28.0	20.7	0.4	30.6	20.9
15500	31.1	26.6	29.8	0.3	30.5	15.2
16000	24.5	21.7	28.3	0.3	30.2	15.0
16500	22.4	19.8	20.7	0.4	30.5	19.3
17000	25.0	21.2	20.4	0.4	30.1	17.7
17500	37.2	25.7	24.8	0.3	29.9	16.6
18000	25.6	26.6	20.4	0.3	30.1	16.7
18500	20.4	21.2	15.3	0.3	30.5	17.8
19000	19.5	19.4	14.0	0.3	30.9	18.0
19500	21.0	19.8	15.5	0.4	31.4	17.1
20000	24.8	22.4	20.4	0.4	31.1	17.3

Outline Dimensions



Dimensions are in inches, [mm] shown for convenience.
Tolerances on 2-pl decimals: ±.03. 3-pl decimals: ± .015.

155 Plant Ave Hauppauge, New York 11716 • Tel: 631-521-7831 • Fax: 631-521-7871
Website: www.amplitechinc.com • Email: info@amplitechinc.com