

Directional Coupler 6 dB SMA Female 500 MHz to 2 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.

Model APTDC-06-00500200-SMA operates from 500 MHz to 2 GHz with broadband flat coupling response, high directivity, and excellent return loss performance.

Specifications	Min	Typ	Max	Min
Frequency	500		2000	MHz
Impedance		50		Ohm
Coupling		6.0 ± 1.0		dB
Frequency Sensitivity (Flatness)		± 0.75	± 1.25	dB
Mainline Loss ¹			2.0	dB
Directivity	18	23		dB
Main Line Return Loss	19	23		dB
Secondary Line Return Loss	19	22		dB
Input Power (CW) ²			1	Watts (CW)

Mechanical

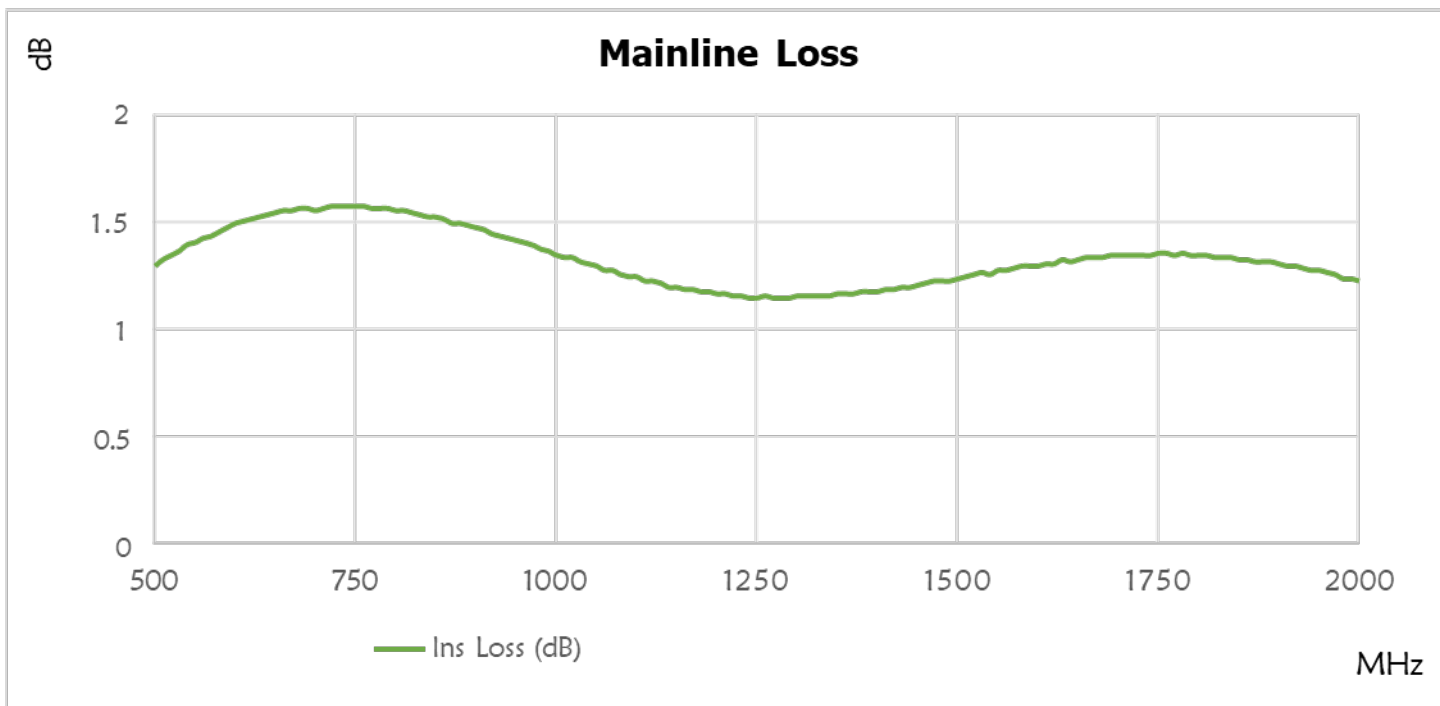
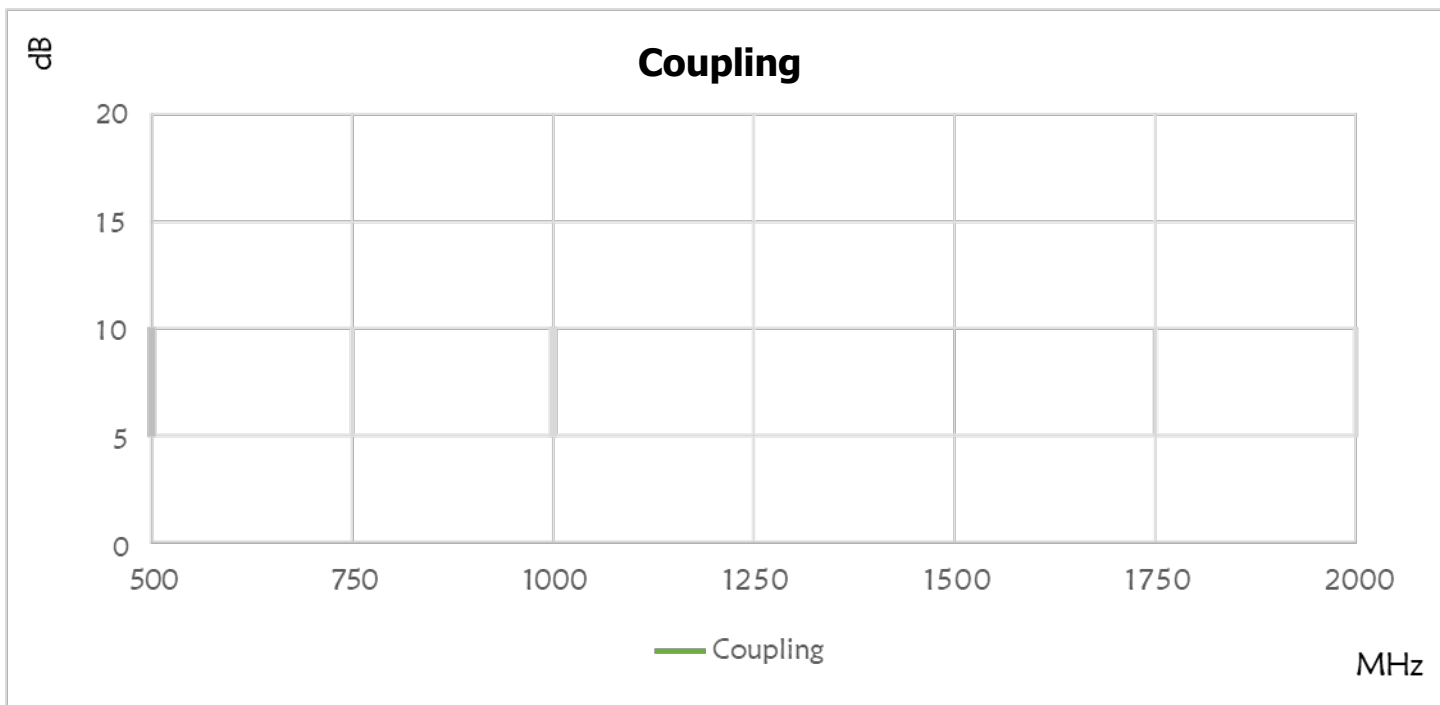
Connector Interface	SMA-Female
Operating Temperature ²	-55 to +85 °C
Storage Temperature	-55 to +100 °C
Weight Estimate	1.5 oz (42 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

Materials

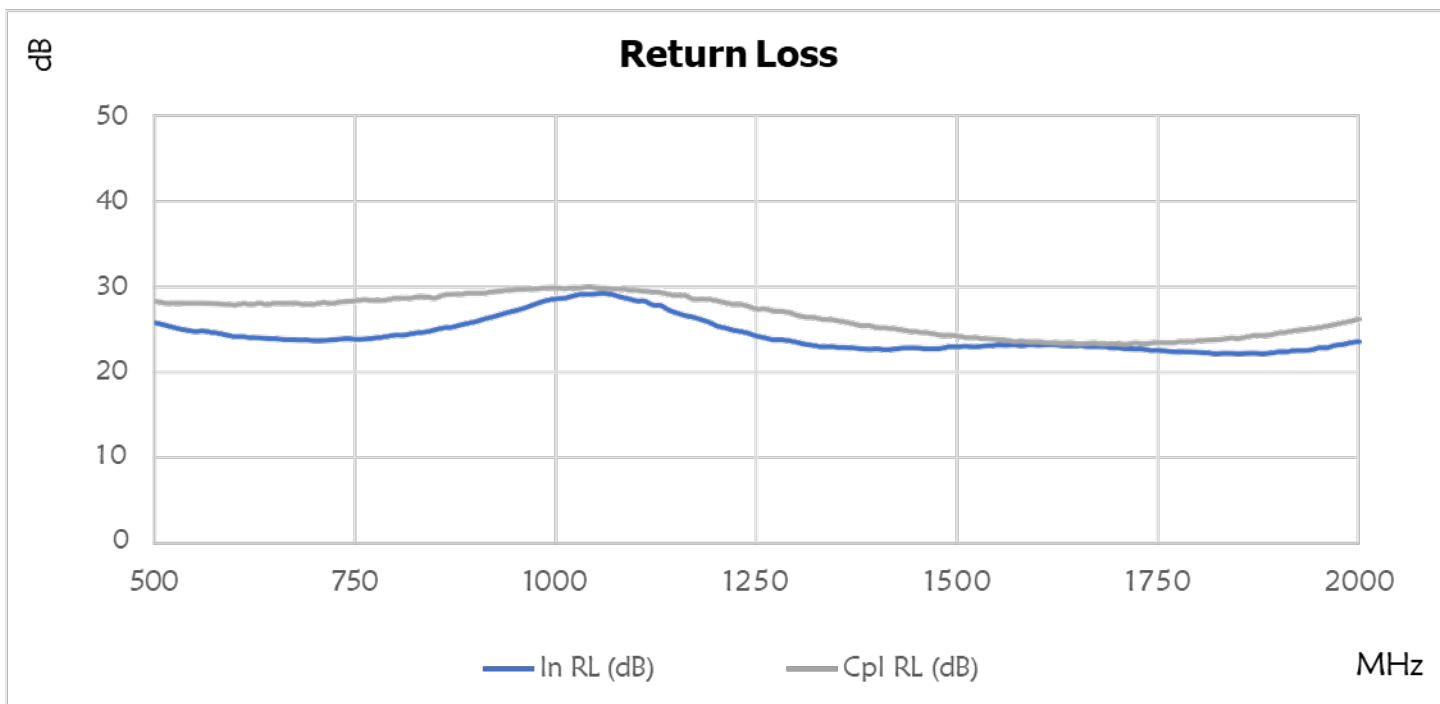
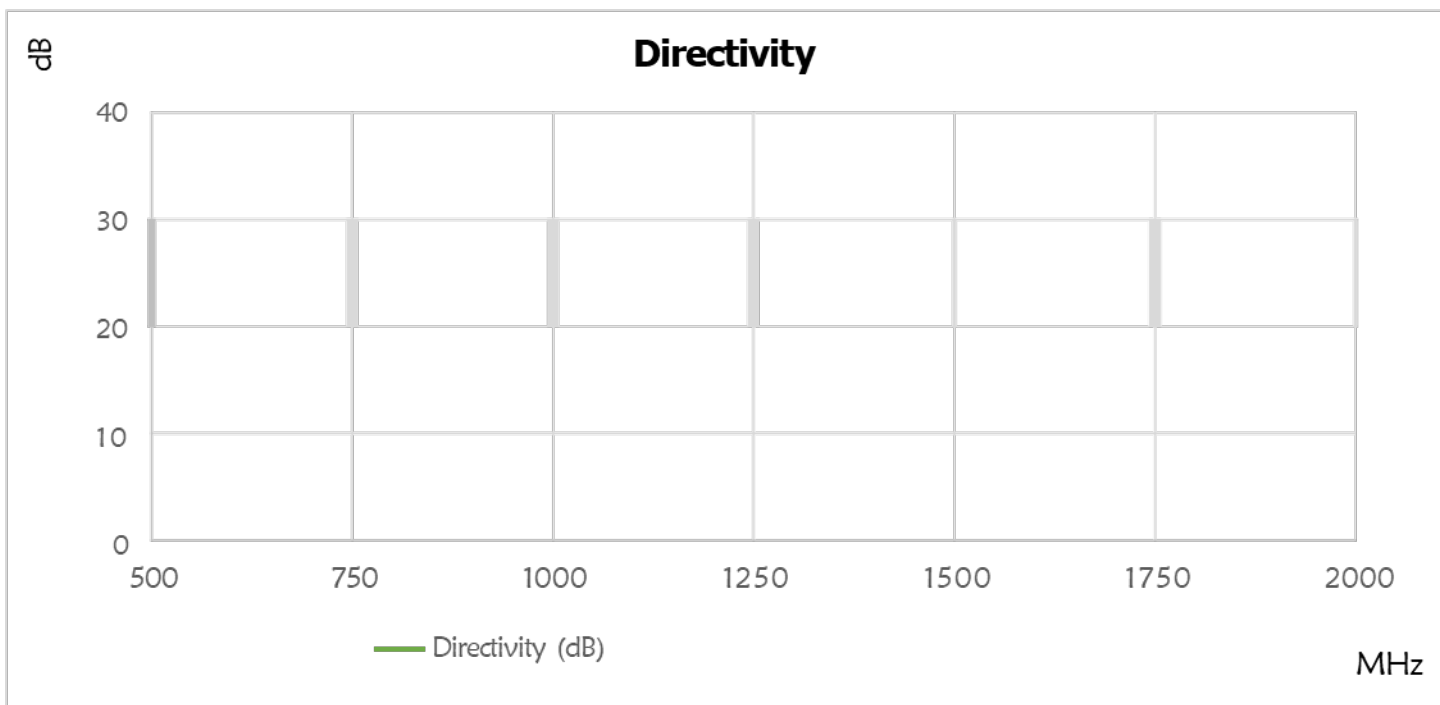
RoHS /REACH Compliant ³	Yes
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Gray Paint

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.

Typical Performance at +25 °C



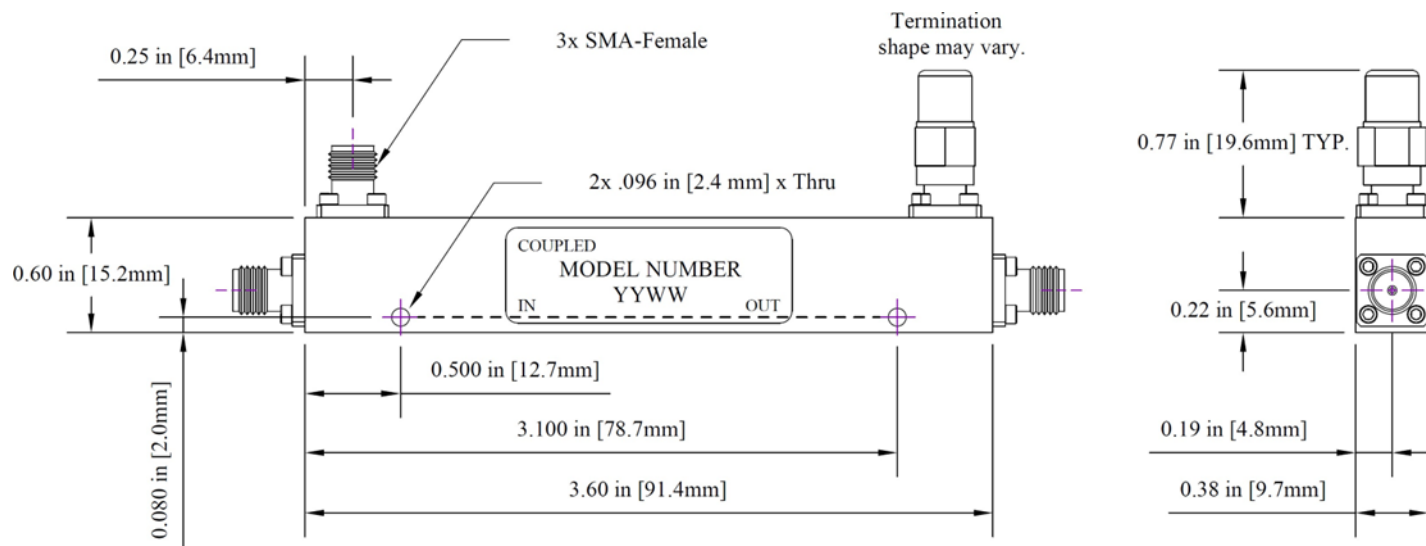
Typical Performance at +25 °C



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Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl.	Directivity (dB)
	In	Out	Cpl.			
500	25.9	28.0	28.4	1.3	6.3	29.5
550	24.9	27.6	28.1	1.4	6.0	29.1
600	24.3	27.4	27.9	1.5	5.7	28.6
650	24.1	27.5	28.2	1.6	5.6	28.1
700	23.9	27.7	28.1	1.6	5.5	27.7
750	24.0	27.7	28.4	1.6	5.6	27.2
800	24.5	28.0	28.8	1.6	5.6	26.8
850	25.1	28.4	28.8	1.5	5.7	26.4
900	26.0	28.8	29.3	1.5	5.9	26.0
950	27.3	29.4	29.7	1.4	6.0	25.6
1000	28.7	29.7	29.9	1.4	6.2	25.3
1050	29.2	30.4	29.9	1.3	6.4	25.1
1100	28.4	30.5	29.6	1.3	6.6	25.0
1150	27.0	30.6	29.0	1.2	6.8	25.0
1200	25.5	30.0	28.4	1.2	6.9	25.1
1250	24.4	28.8	27.5	1.2	7.0	25.3
1300	23.6	28.2	26.8	1.2	7.0	25.5
1350	23.1	27.2	26.1	1.2	7.0	25.8
1400	22.9	26.3	25.3	1.2	7.0	26.0
1450	23.0	25.6	24.8	1.2	6.9	26.1
1500	23.2	25.0	24.4	1.2	6.8	26.1
1550	23.3	24.5	24.0	1.3	6.7	26.0
1600	23.3	24.2	23.7	1.3	6.6	25.8
1650	23.3	24.1	23.5	1.3	6.5	25.5
1700	23.0	24.1	23.5	1.4	6.5	25.2
1750	22.7	24.4	23.6	1.4	6.4	24.9
1800	22.5	24.9	23.8	1.4	6.5	24.5
1850	22.4	25.3	24.1	1.3	6.5	24.2
1900	22.5	26.3	24.7	1.3	6.6	24.0
1950	23.0	27.4	25.3	1.3	6.7	23.8
2000	23.7	28.8	26.3	1.2	6.9	23.7

Outline Dimensions



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