

Directional Coupler 10 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-10-00500200-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		10 ± 1.0		dB
Frequency Sensitivity (Flatness)		± 0.75	± 1.0	dB
Mainline Loss ¹		0.6	0.9	dB
Directivity	23	25		dB
Main Line Return Loss	20	24		dB
Secondary Line Return Loss	20	23		dB
Input Power (CW) ²			50	Watts (CW)

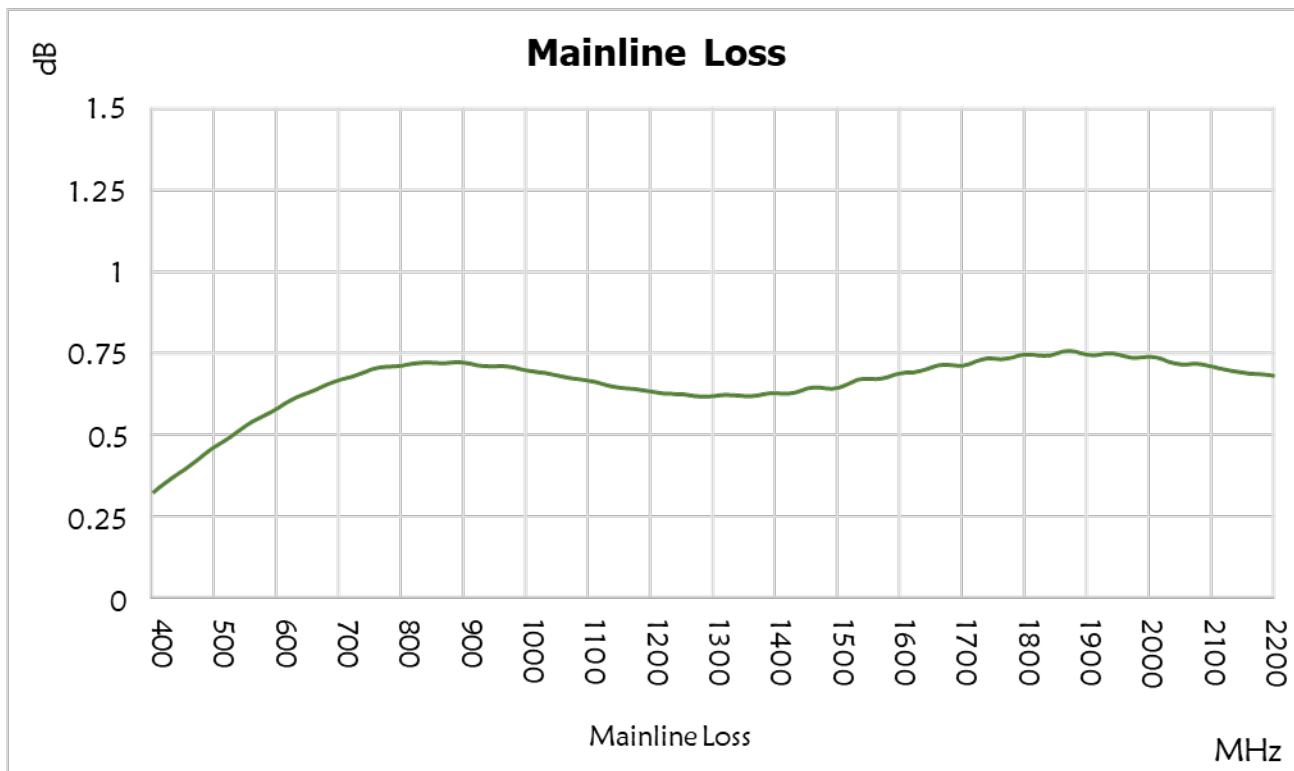
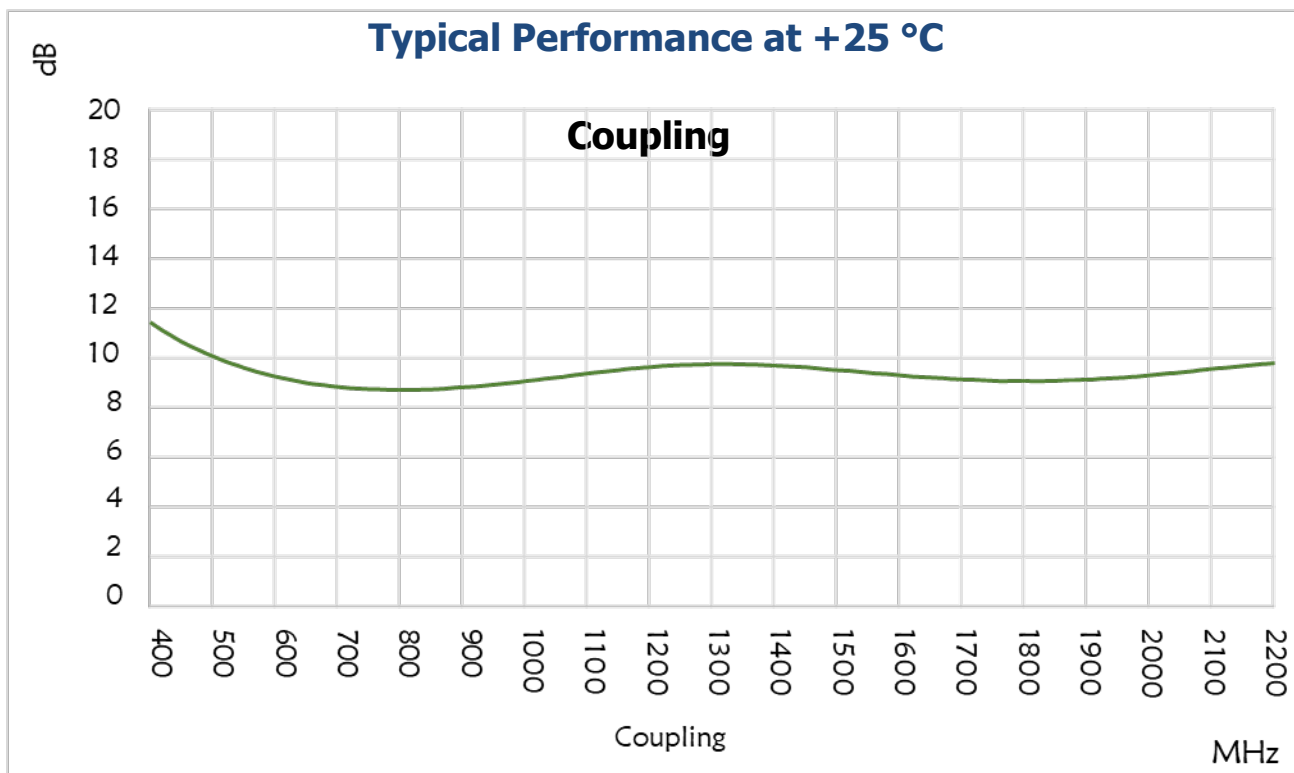
Mechanical

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

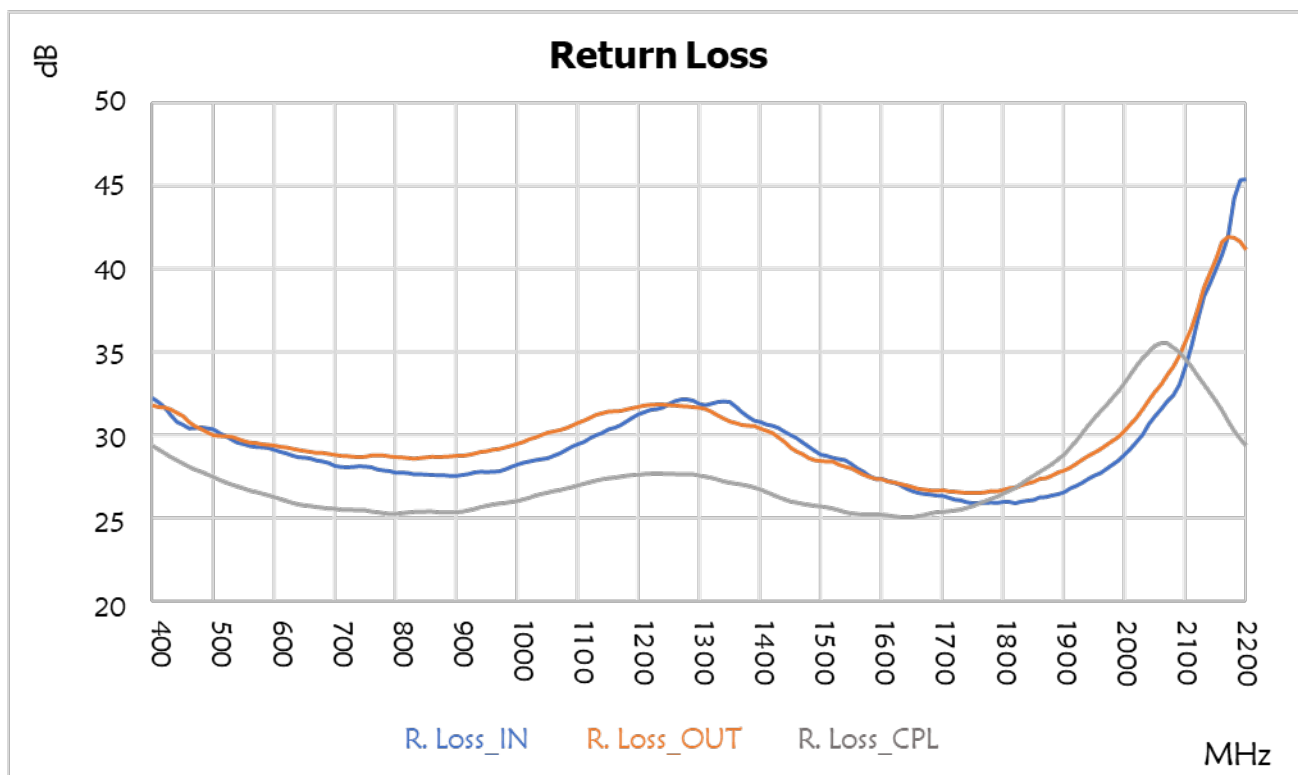
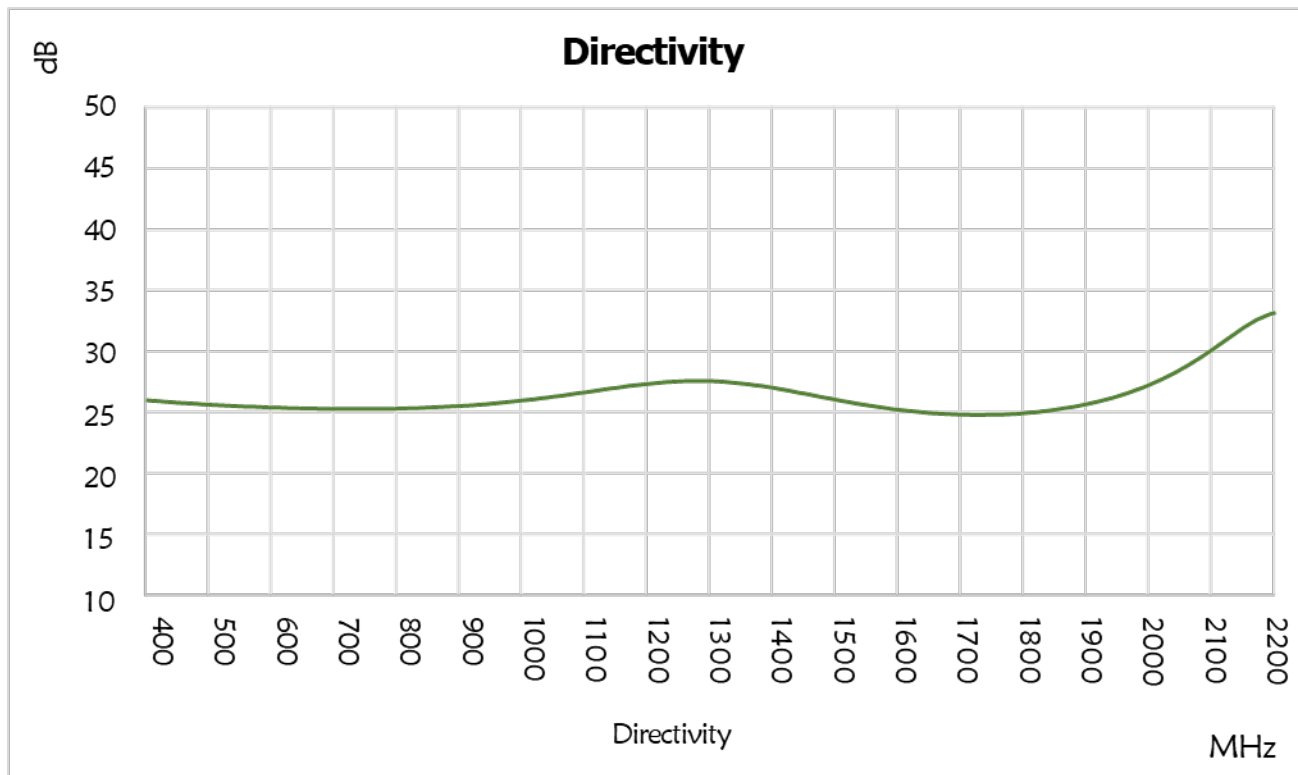
Materials

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.



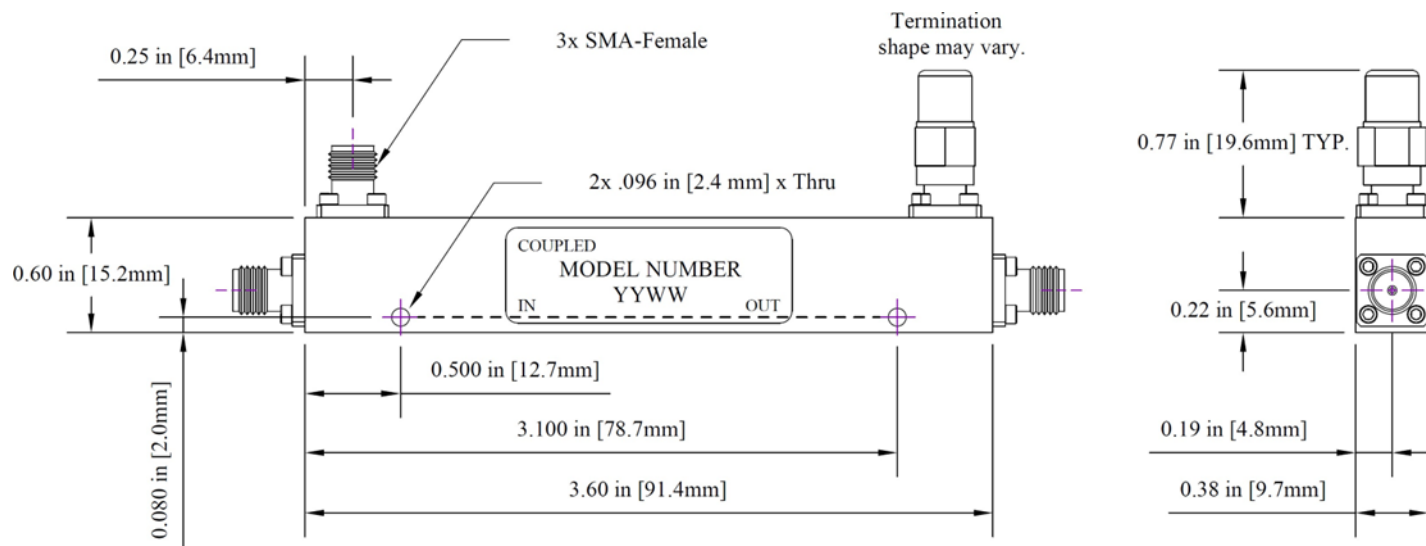
Typical Performance at +25 °C



Typical Performance at +25 °C

Frequency (MHz)	Return Loss (dB)			Mainline Loss (dB)		Coupling (dB)	Directivity (dB)
	In	Out	Cpl.	In-Out	In-Cpl.		
400	31.9	31.9	28.9	0.5	10.9	25.9	
500	30.1	29.4	27.1	0.6	9.8	25.6	
600	28.9	29.1	26.0	0.7	9.1	25.5	
700	27.9	28.4	25.7	0.7	8.8	25.5	
800	27.8	28.6	25.5	0.7	8.8	25.6	
900	27.7	29.0	25.5	0.7	9.0	26.0	
1000	28.5	30.0	26.3	0.7	9.2	26.7	
1100	29.7	31.4	27.3	0.7	9.6	27.5	
1200	31.6	32.2	27.7	0.6	9.8	27.9	
1300	31.7	31.4	27.4	0.7	9.9	27.4	
1400	30.8	29.7	26.3	0.6	9.7	26.3	
1500	28.8	28.7	25.6	0.7	9.5	25.4	
1600	27.4	27.2	25.1	0.7	9.3	25.0	
1700	26.5	26.7	25.4	0.8	9.2	25.0	
1800	26.2	27.2	27.0	0.8	9.2	25.6	
1900	26.7	28.4	29.9	0.7	9.2	27.0	
2000	29.3	31.6	34.7	0.7	9.5	29.6	
2100	36.3	39.2	33.3	0.7	9.7	33.7	
2200	43.4	39.5	28.7	0.7	9.9	33.0	

Outline Dimensions



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