

Dual Directional Coupler, 2-18GHz, 20dB, SMA-Female

WMDDC-2-18-20dB-S

Description

WMDDC-2-18-20dB is a true dual directional coupler that covers 2 to 18GHz with excellent return loss, coupling flatness and high directivity. Its advantage is a smaller and more lightweight housing than two independent couplers. It eliminates reflections caused by additional cabling. Improved performance over separate couplers due to the lack of interconnections and cable between. Insertion loss 0.85dB typical. Directivity 16dB typical. Return loss 17dB typical.



Photo is representative.

Specifications	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range	--	2	--	18	GHz
Impedance	--	--	50	--	Ohm
Coupling	--	--	20 ± 0.4	±1.5	dB
Frequency Sensitivity (Flatness)	--	--	±0.29	±1.0	dB
Mainline Loss ¹	2-12.4 12.4-18	--	0.85 1.08	1.20 1.70	dB
Directivity	2-12.4 12.4-18	15.0 12.0	16.6 13.5	--	dB
Isolation	2-12.4 12.4-18	--	36.6 23.5	--	dB
Return Loss (Main Line)	--	14.0	17.7	--	dB
Return Loss (Secondary Line)	--	14.0	17.4	--	dB
Input Power (CW) ²	--	--	--	50	Watts

Mechanical

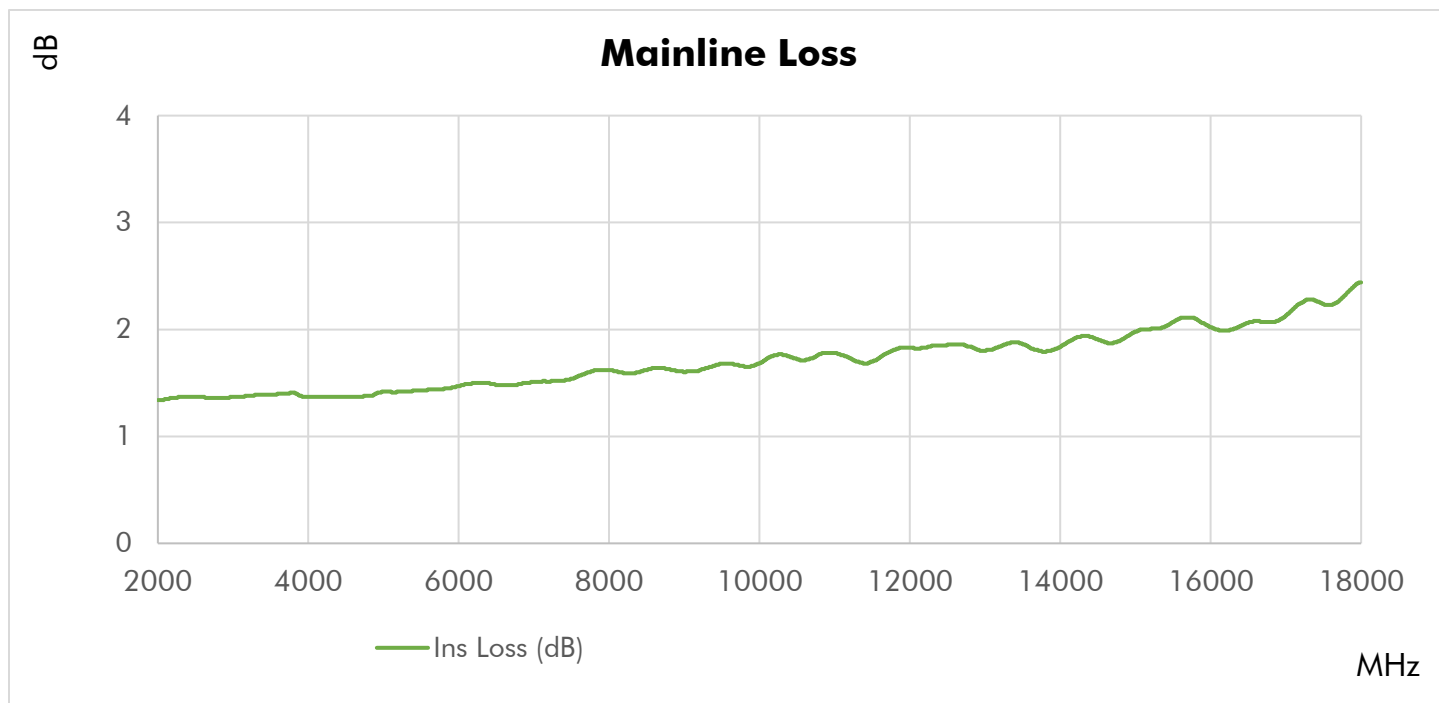
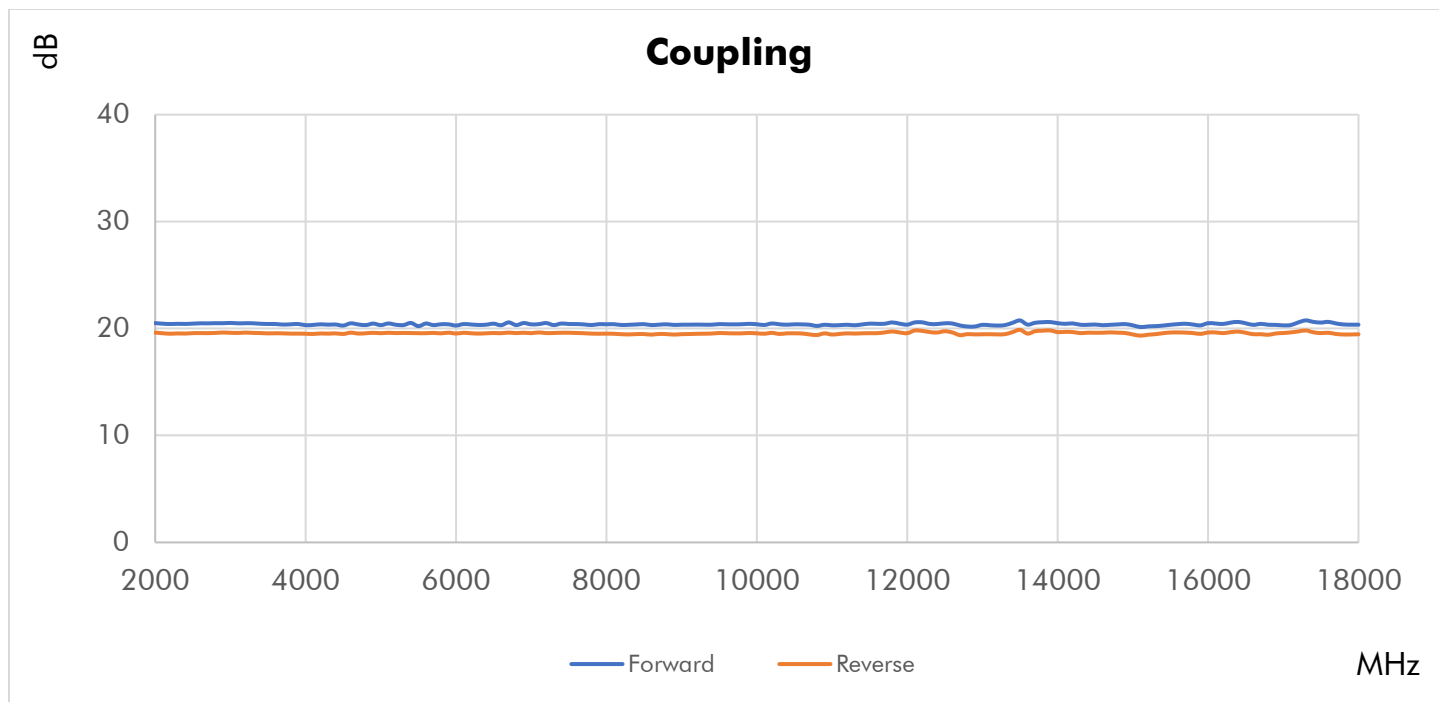
Connector Interface	SMA-Female
Operating Temperature ³	-40 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	3.1 oz (89 g)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

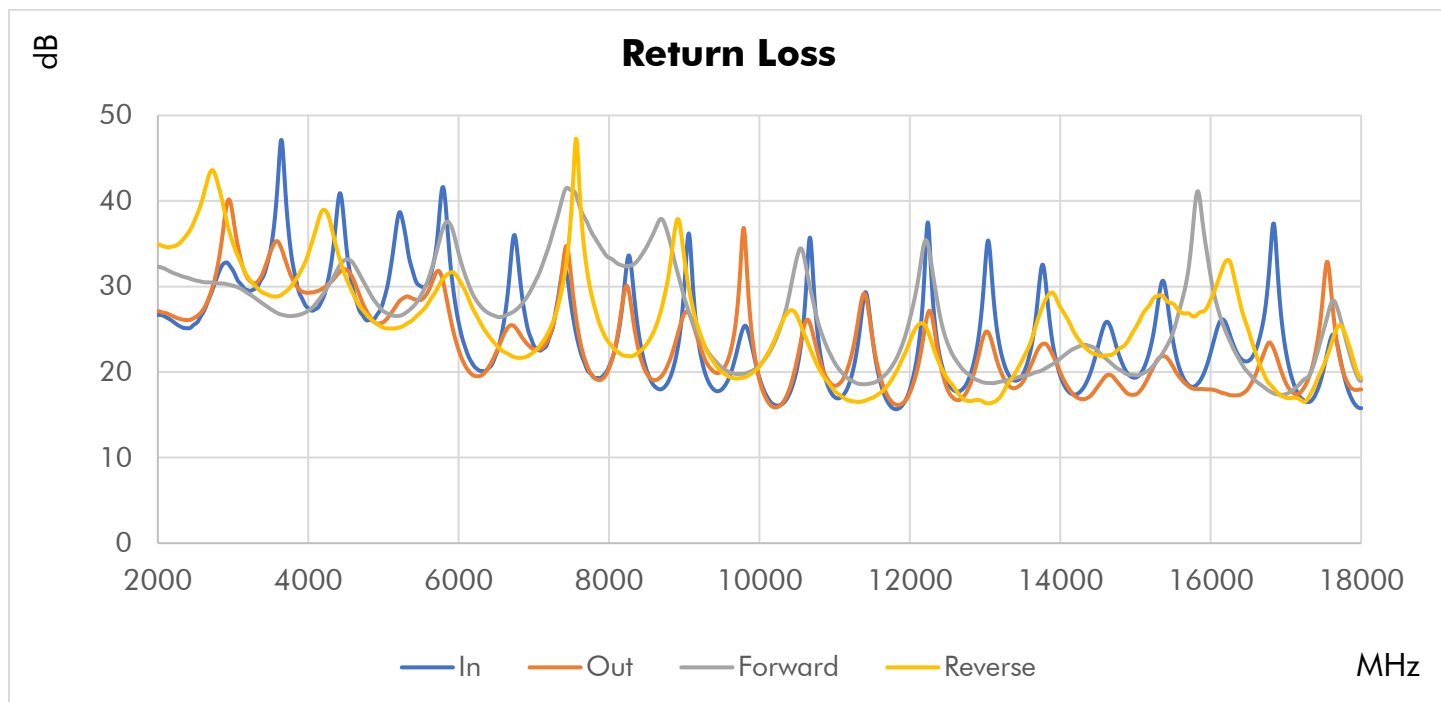
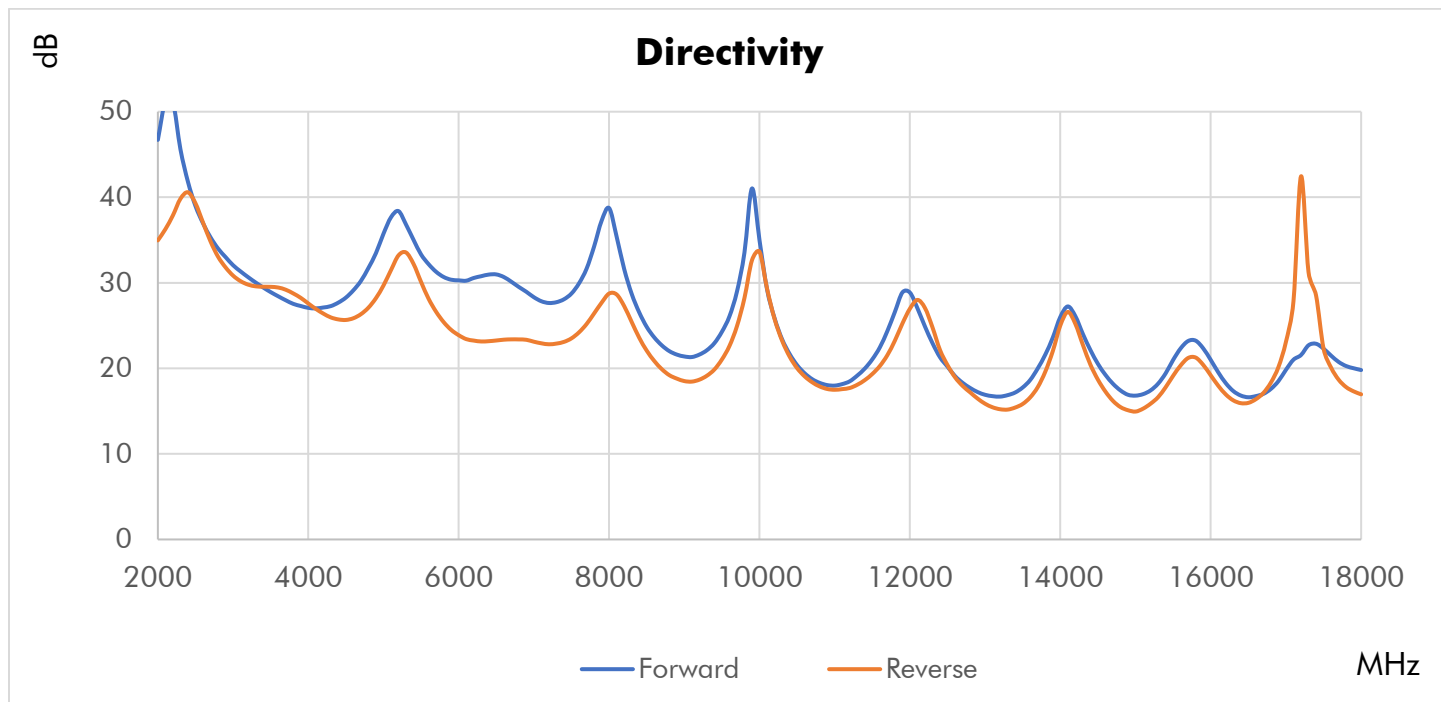
Materials

RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

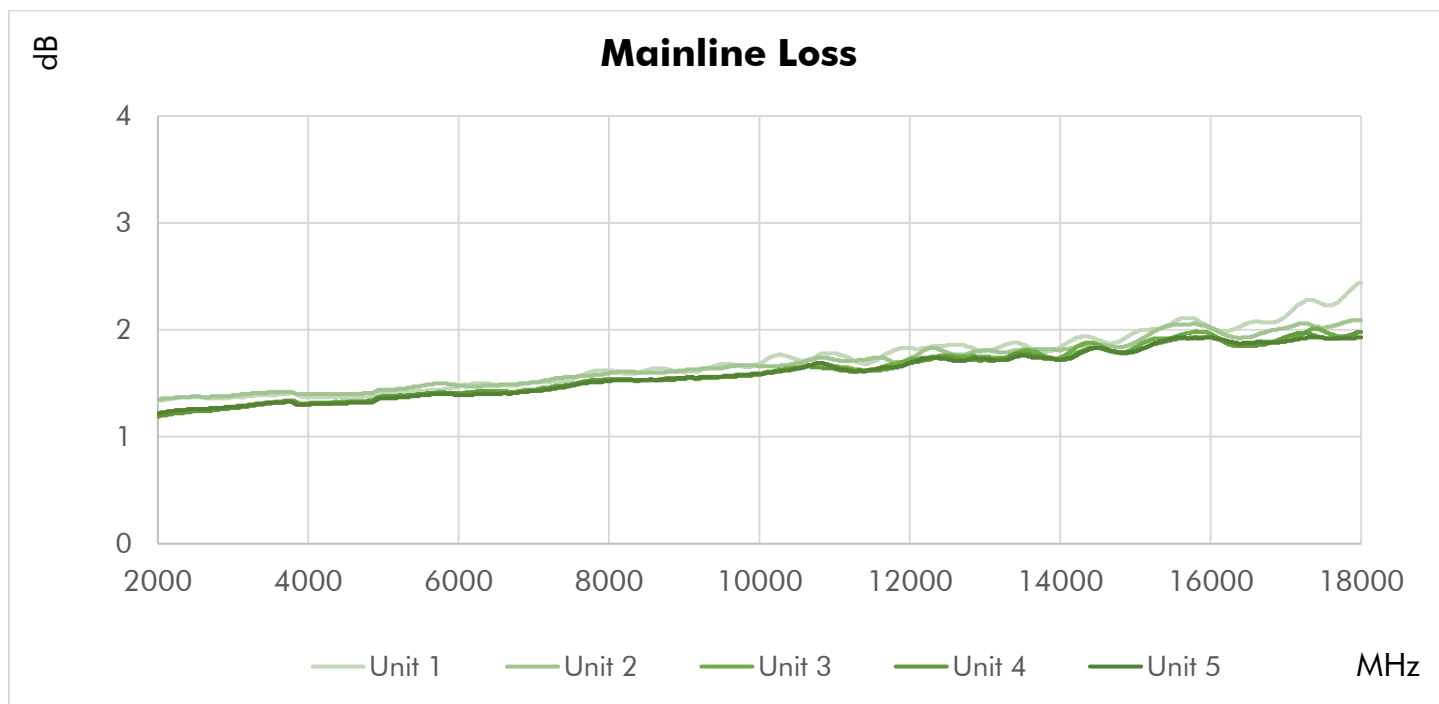
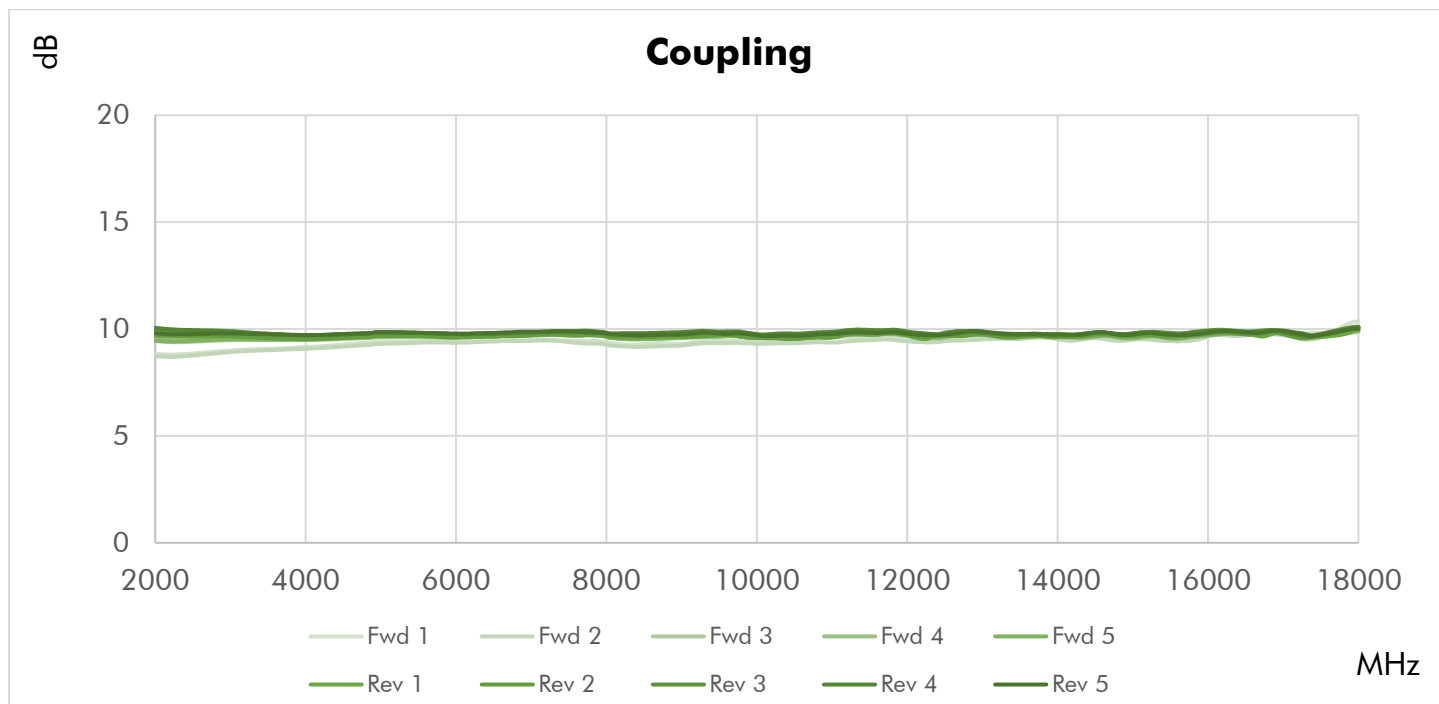
1. Mainline loss includes coupling loss.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C only.
4. To the best of our knowledge at time of publication.

Typical Performance at +25 °C





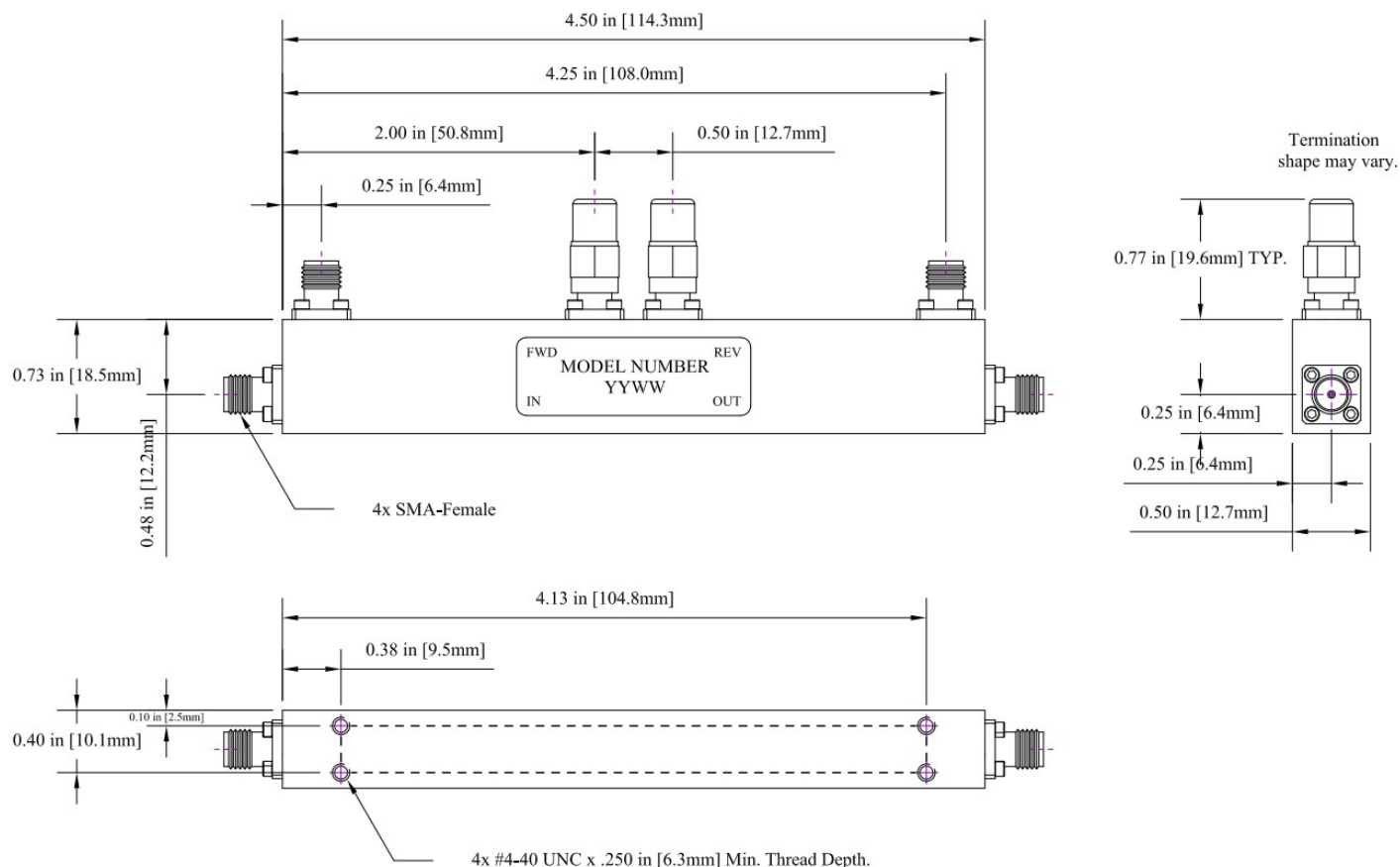
Repeatability in Production



Typical Performance Data

Frequency (MHz)	Return Loss (dB)				Mainline Loss (dB)	Coupling (dB)		Directivity (dB)	
	In	Out	Fwd.	Rev.		Fwd.	Rev.	Fwd.	Rev.
2000	31.7	31.5	40.0	33.5	0.30	20.5	19.6	46.7	35.0
2500	41.3	41.7	37.9	39.0	0.32	20.5	19.6	39.0	39.3
3000	26.4	26.6	43.0	34.9	0.41	20.5	19.6	32.1	30.8
3500	35.1	35.1	39.2	40.8	0.37	20.4	19.5	28.9	29.5
4000	35.1	36.4	28.9	41.4	0.42	20.3	19.5	27.1	27.6
4500	44.8	46.5	25.7	32.1	0.41	20.3	19.5	28.3	25.7
5000	46.7	47.0	28.7	33.3	0.42	20.3	19.6	35.7	29.7
5500	33.7	34.3	25.8	35.9	0.51	20.2	19.6	33.3	30.1
6000	24.6	25.2	23.4	28.5	0.47	20.3	19.5	30.3	23.9
6500	31.8	32.8	23.6	29.9	0.53	20.5	19.6	31.0	23.3
7000	32.1	43.0	23.0	33.0	0.55	20.4	19.6	28.3	23.1
7500	23.7	24.1	25.9	39.9	0.61	20.4	19.6	28.8	23.5
8000	32.6	33.8	24.3	30.4	0.58	20.4	19.5	38.7	28.7
8500	27.5	30.8	20.6	25.4	0.56	20.4	19.5	24.9	22.1
9000	32.8	34.6	24.3	24.4	0.58	20.4	19.5	21.4	18.5
9500	30.6	31.3	31.6	29.1	0.62	20.4	19.6	24.3	21.0
10000	28.0	30.0	19.8	24.3	0.65	20.4	19.6	35.0	33.6
10500	31.9	31.7	19.6	21.2	0.64	20.4	19.6	20.4	20.0
11000	24.9	25.9	33.5	28.2	0.63	20.3	19.4	18.0	17.5
11500	29.7	33.7	21.3	25.7	0.66	20.5	19.6	21.1	19.3
12000	27.7	27.1	18.1	18.9	0.66	20.4	19.6	28.9	27.0
12500	22.9	23.3	24.3	21.0	0.84	20.5	19.7	20.2	20.4
13000	22.5	22.4	23.7	34.5	0.90	20.3	19.5	16.9	15.9
13500	31.0	31.6	16.9	17.8	0.80	20.8	19.9	17.8	15.8
14000	26.1	27.7	19.4	18.6	0.70	20.5	19.7	26.0	25.0
14500	18.1	17.9	24.9	41.9	0.93	20.4	19.6	20.5	18.7
15000	29.9	32.2	18.3	20.8	0.82	20.3	19.4	16.8	14.9
15500	36.4	42.4	25.4	29.3	0.81	20.4	19.6	21.0	19.1
16000	18.9	18.5	20.8	23.6	1.01	20.5	19.6	21.0	19.2
16500	24.0	24.0	21.7	25.8	0.92	20.5	19.6	16.6	16.0
17000	33.3	47.9	23.6	22.9	0.88	20.3	19.6	19.8	23.1
17500	22.3	22.4	17.4	20.1	0.88	20.6	19.6	22.3	22.3
18000	17.9	17.9	31.1	31.1	1.03	20.4	19.5	19.8	17.0

Outline Dimensions



Outline # OL-5182

Dimensions are in inches, [mm] shown for convenience.

Tolerances on 2-pl decimals: $\pm .03$. 3-pl decimals: $\pm .015$.

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