WERBEL MICROWAVE LLC
628 State Route 10, Unit 14
Whippany, N.J. 07981
www.WerbelMicrowave.com

Dual Directional Coupler, 6-18GHz, 20dB, SMA-Female

WMDDC-6-18-20dB-S

Description

WMDDC-6-18-20dB is a true dual directional coupler that covers 6 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 0.45dB typical. Directivity 19.7dB typical. Return loss 20.3dB typical. Coupling 20±0.8dB; flatness ±0.52dB typical.

Photo is representative.

Specifications	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range	--	6	--	18	GHz
Impedance	--	--	50	--	Ohm
Coupling	--	--	20 ± 0.8	±1.80	dB
Frequency Sensitivity (Flatness)	--	--	±0.52	±1.25	dB
Mainline Loss[1]	6-12.4 12.4-18	--	0.45 0.69	1.2 1.6	dB
Directivity	6-12.4 12.4-18	15.0 12.0	19.7 15.8	--	dB
Isolation	6-12.4 12.4-18	--	39.7 35.8	--	dB
Return Loss (Main Line)	--	14.0	19.5	--	dB
Return Loss (Secondary Line)	--	14.0	20.3	--	dB
Input Power (CW)[2]	--	--	--	20	Watts

Mechanical

Connector Interface	SMA-Female
Operating Temperature[3]	-40 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	40.4 g (1.43 oz)
Humidity	10-90% non-condensing
Environment	Indoors Use Only

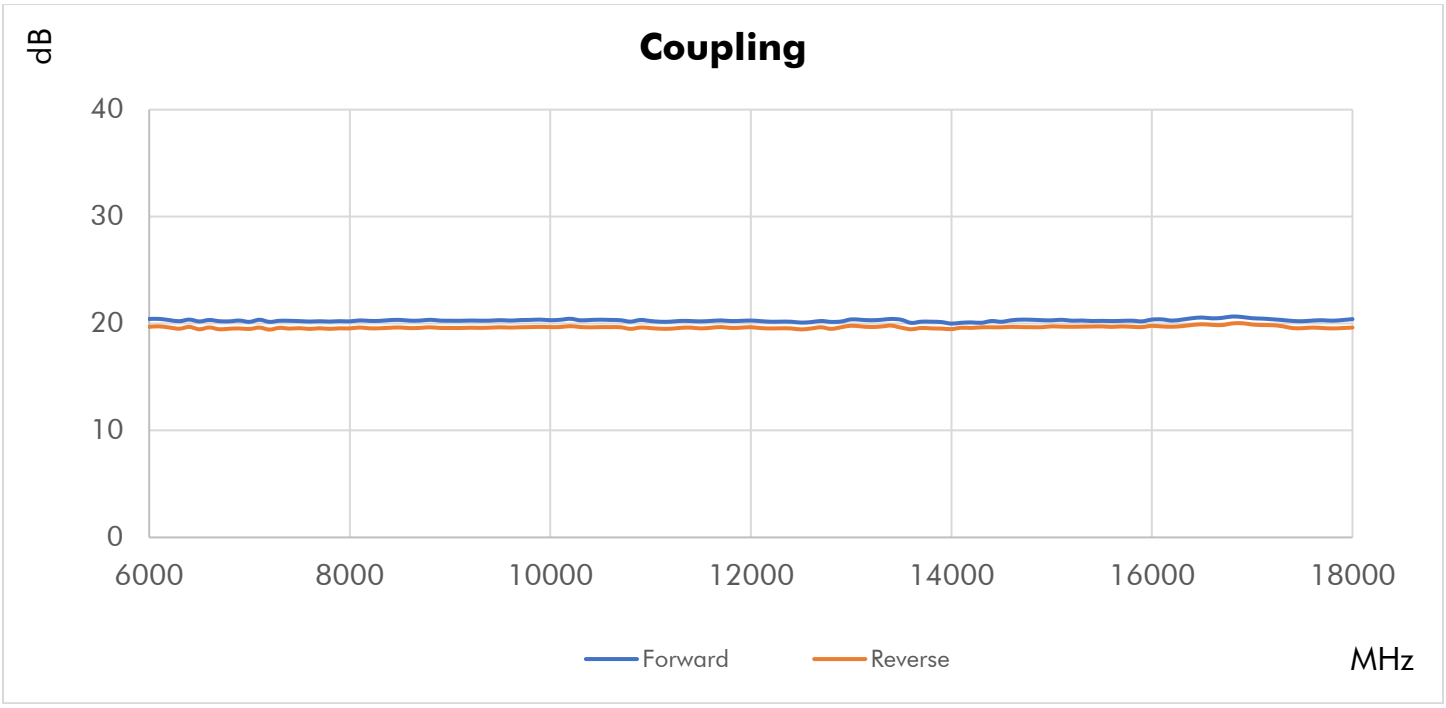
Materials

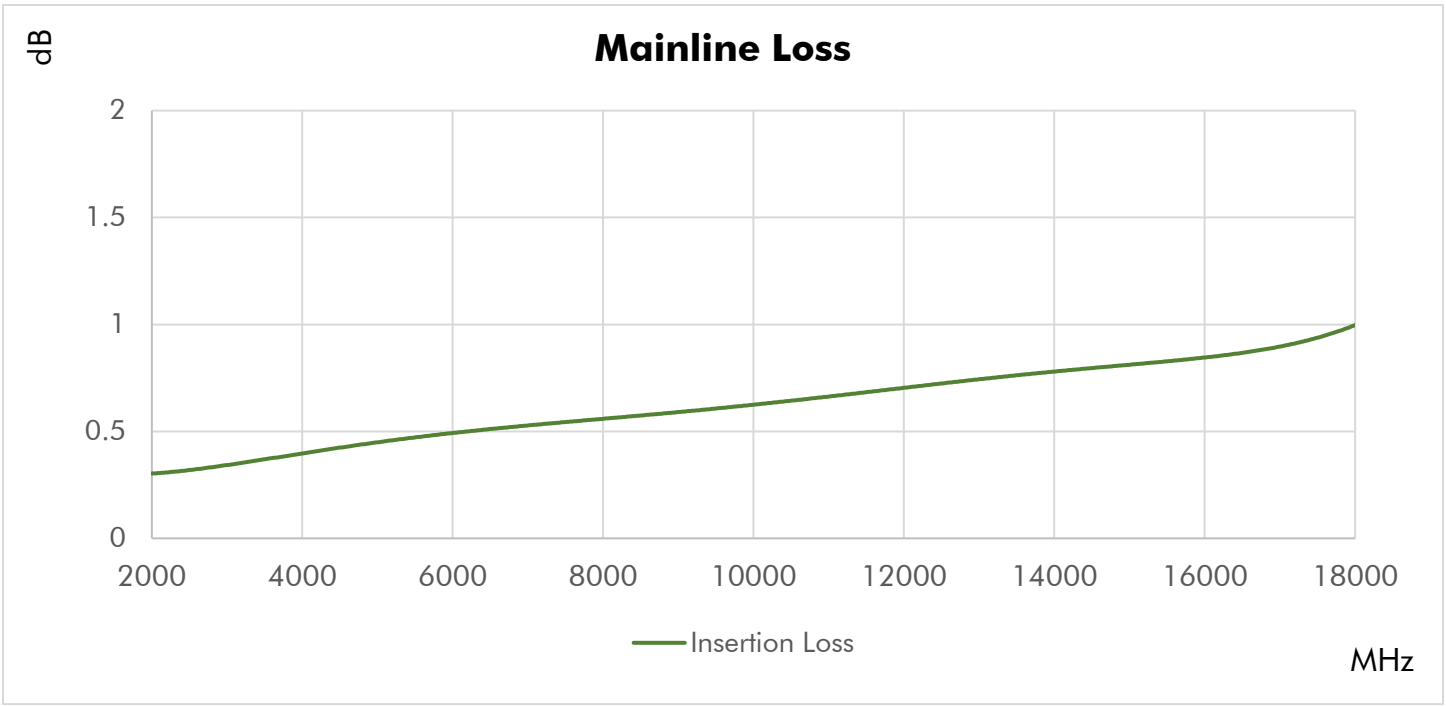
RoHS and REACH Compliant[4]

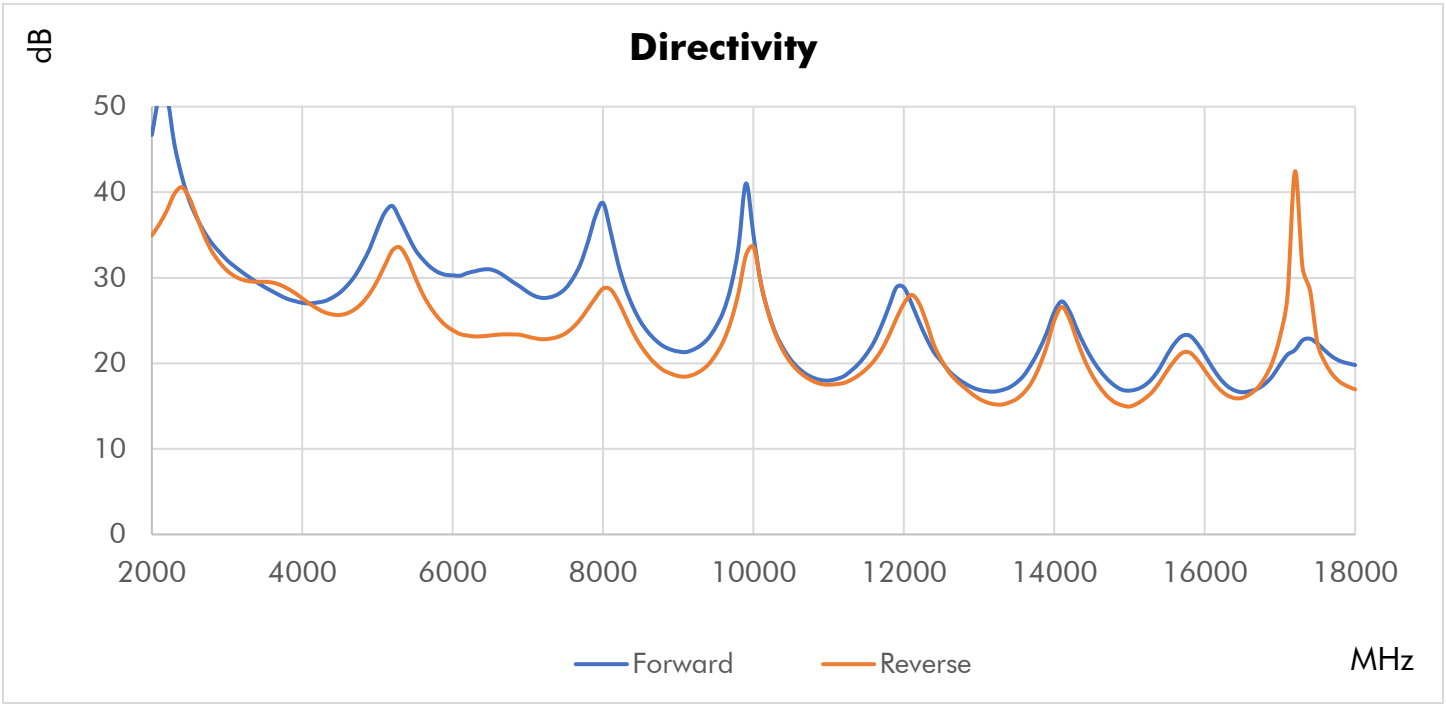
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

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.
4. To the best of our knowledge at time of publication.

Typical Performance at +25 °C






Directivity
dB
50
40
30
20
10
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
Forward
Reverse
MHz


Return Loss
dB
50
40
30
20
10
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
In
Out
Forward
Reverse
MHz

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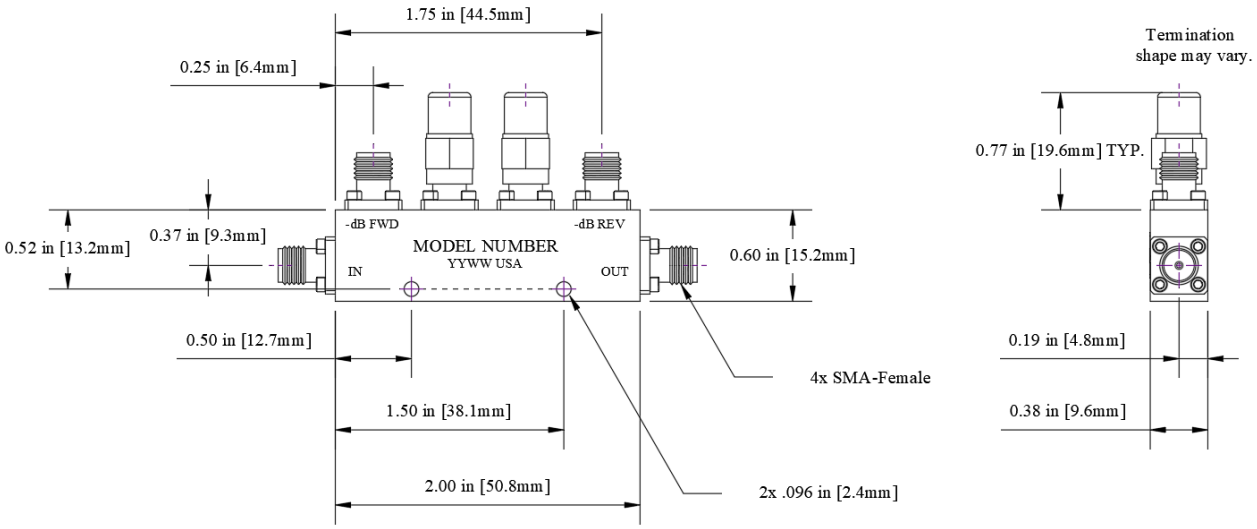
Typical Performance Data

Frequency (MHz)	Return Loss (dB)				Mainline Loss (dB)	Coupling (dB)		Directivity (dB)	
	In	Out	Fwd.	Rev.	In-Out	Fwd.	Rev.	Fwd.	Rev.
6000	22.29	22.06	19.78	19.27	0.35	20.43	19.69	28.43	23.36
6500	23.45	22.98	20.60	20.20	0.29	20.20	19.46	31.29	27.53
7000	29.38	24.33	24.16	24.67	0.23	20.16	19.49	31.04	37.95
7500	27.23	26.16	42.35	34.52	0.33	20.23	19.57	25.97	26.70
8000	23.65	23.07	25.98	24.04	0.34	20.20	19.54	22.39	21.81
8500	26.58	25.17	20.13	20.60	0.38	20.34	19.63	20.13	20.01
9000	30.66	25.96	17.91	20.47	0.38	20.26	19.58	19.08	19.84
9500	19.80	19.42	17.54	22.59	0.43	20.32	19.65	19.09	21.17
10000	17.12	16.21	18.43	23.32	0.43	20.31	19.66	19.73	22.40
10500	19.45	19.06	19.91	21.61	0.47	20.36	19.66	20.12	22.01
11000	36.28	34.96	22.08	21.18	0.41	20.24	19.57	21.12	20.32
11500	21.71	21.79	25.41	23.34	0.45	20.20	19.54	21.85	19.26
12000	19.97	19.01	30.01	27.70	0.41	20.28	19.66	22.39	19.42
12500	28.19	28.24	29.67	27.25	0.50	20.09	19.45	22.54	20.99
13000	24.10	24.37	25.06	24.06	0.57	20.39	19.80	22.48	24.30
13500	19.54	20.39	22.32	24.08	0.63	20.35	19.61	21.27	28.26
14000	24.52	24.17	21.15	25.78	0.39	19.99	19.48	20.97	34.83
14500	28.35	25.51	20.98	25.84	0.55	20.17	19.65	21.84	31.07
15000	19.79	18.55	21.80	24.21	0.56	20.30	19.73	24.33	25.65
15500	21.82	21.65	22.41	24.33	0.56	20.25	19.73	33.31	22.29
16000	34.13	31.73	22.70	27.64	0.52	20.37	19.78	30.39	21.03
16500	27.00	26.59	23.96	25.06	0.60	20.56	19.93	21.42	21.33
17000	28.05	28.46	25.71	20.31	0.56	20.49	19.91	17.42	21.47
17500	22.71	23.44	24.46	19.94	0.61	20.21	19.57	16.79	19.30
18000	20.52	22.94	19.25	23.17	0.69	20.41	19.62	17.85	17.80

Outline Dimensions



Outline # OL-5006
Dimensions are in inches, [mm] shown for convenience.
Tolerances on 2-pl decimals: ±.03. 3-pl decimals: ± .015.