

35dB DC Pass

High Power Directional Coupler

ZGDC35-93HP+

50Ω Up to 250W 900 to 9000 MHz

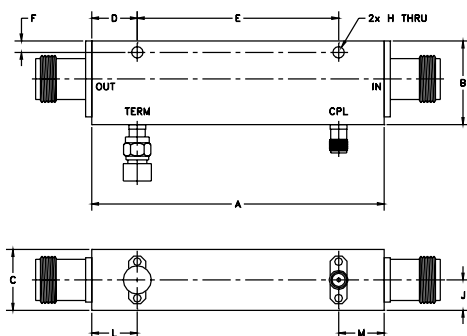
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
DC Current	3A
Permanent damage may occur if any of these limits are exceeded	

Coaxial Connections

INPUT	IN(N-Type)
OUTPUT	OUT(N-Type)
COUPLED (FORWARD)	CPL(FWD)(SMA)
COUPLED (REVERSE)	TERM(SMA)

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
3.85	1.10	.80	.60	2.650	.15	—
97.79	27.94	20.32	15.24	67.31	3.81	—
H	J	K	L	M		wt
.150	.40	.50	.60	.60		grams
3.81	10.16	12.70	15.24	15.24		200.0

Features

- wide frequency range can be used for 0.8-12.4 GHz
- good coupling flatness, ± 0.8 dB typ. over 1050-8000 MHz
- high directivity, 25 dB typ.
- very good VSWR, 1.10:1 typ.
- high power, up to 250W
- DC current pass through input to output

Applications

- cellular
- lab use
- WiMAX
- ISM
- PCN
- GSM



CASE STYLE: HT1633
Connectors Model
N-Type/SMA ZGDC35-93HP+

+RoHS Compliant

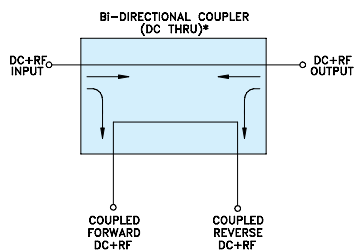
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		900		9000	MHz
Mainline Loss (above theoretical 0.0015 dB)	900 6000 9000	— — —	0.03 0.10 0.18	0.2 0.25 0.3	dB
Coupling Flatness($\pm$)	900 - 1050 1050 - 8000 8000 - 9000	— — —	± 0.5 ± 0.8 ± 0.6	± 0.8 ± 1.3 ± 0.95	dB
Coupling	900 - 1050 1050 - 8000 8000 - 9000	34.0 32.5 32.4	35.4 35 34.3	37.8 37.5 36.4	dB
Directivity	900 3000 6000 8000 9000	22 20 14 12 8	26 25 19 16 11	— — — — —	dB
Return Loss (Input)	900 - 6000 6000 - 9000	16 14	19 17	— —	dB
Return Loss (Output)	900 - 6000 6000 - 9000	16 14	19 18	— —	dB
Return Loss (Coupling)	900 - 6000 6000 - 9000	17 14	22 18	— —	dB
Input Power ¹	900 - 6000	—	—	250	W

1. At 25°C with no DC current. Derate linearly to 200W (900-9000 MHz) and to 100W (600-9000 MHz) from 25°C to 100°C. Output load VSWR 2.0:1 max.

Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

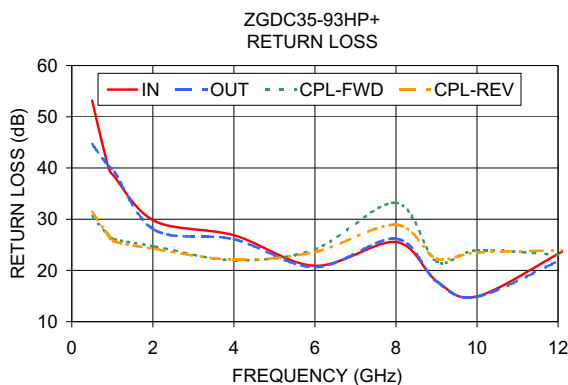
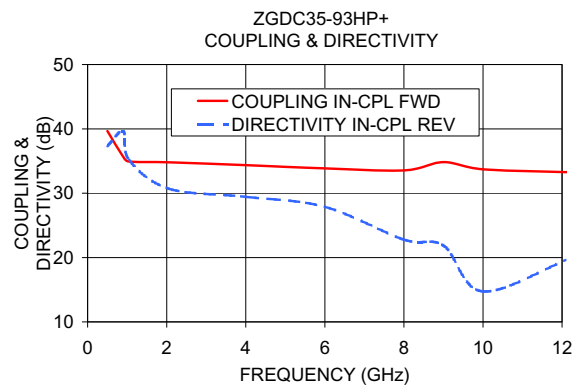
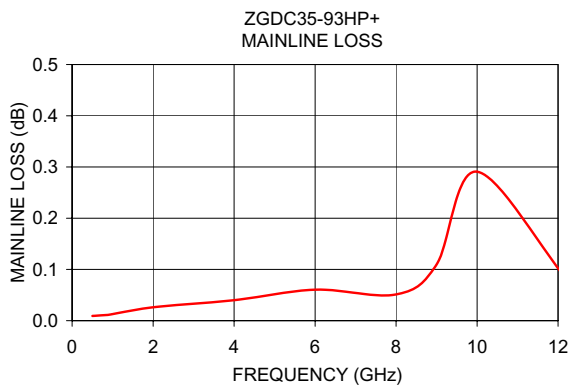


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ZGDC35-93HP+
AV/CP/AM
160510
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Typical Performance Data

Frequency (GHz)	Mainline Loss (dB)	Coupling (dB)		Directivity (dB)		Return Loss (dB)			
	In-Out	In-Cpl Fwd	Out-Cpl Rev	Out-Cpl Fwd	In-Cpl Rev	In	Out	Cpl Fwd	Cpl Rev
0.50	0.01	39.67	39.65	32.09	37.34	53.17	44.63	30.52	31.43
0.90	0.01	35.66	35.68	27.52	39.60	40.19	40.41	26.91	26.92
1.05	0.01	34.93	34.95	27.19	35.15	38.28	39.24	26.08	25.64
2.05	0.03	34.81	34.90	25.04	30.70	29.63	27.89	24.67	24.19
4.00	0.04	34.36	34.44	15.74	29.43	26.87	26.10	22.01	22.11
6.00	0.06	33.85	33.92	18.98	27.88	20.90	20.66	24.12	23.62
8.00	0.05	33.55	33.61	17.80	22.78	25.55	26.20	33.19	28.92
9.00	0.11	34.83	34.91	13.32	21.86	17.93	17.86	21.76	22.31
10.00	0.29	33.72	33.81	18.42	14.74	14.92	14.88	23.92	23.49
12.30	0.07	33.23	33.31	13.69	20.13	24.55	22.91	22.88	23.95



Notes

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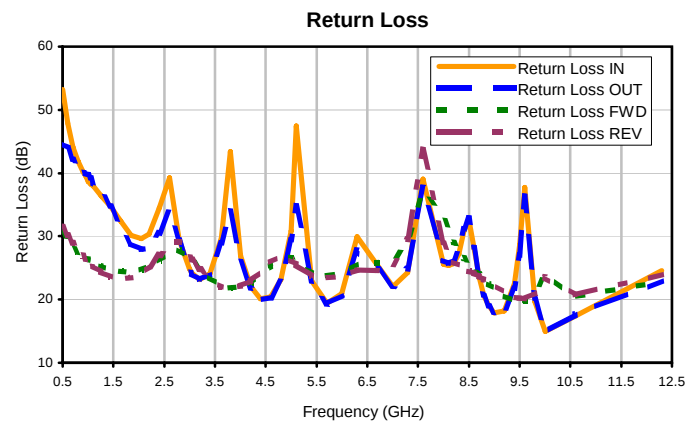
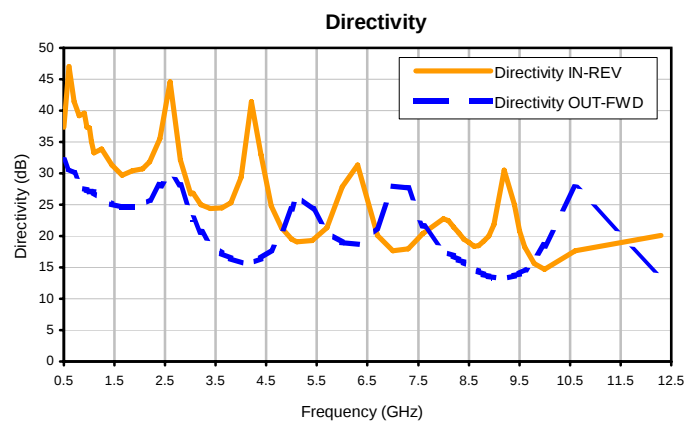
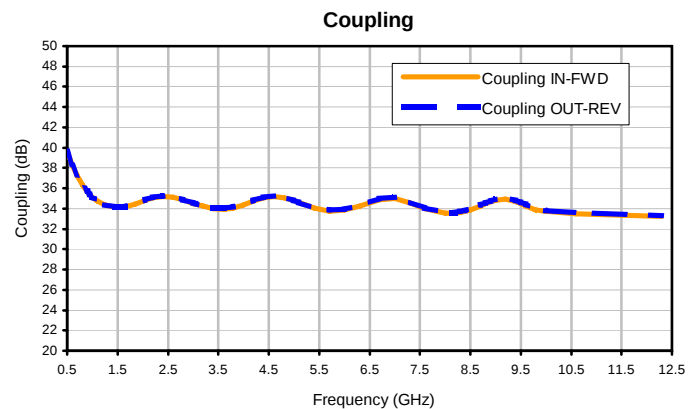
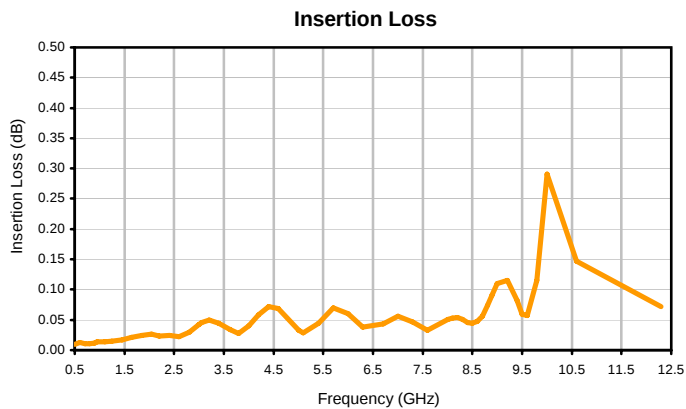
Typical Performance Data

FREQ. (GHz)	INSERTION LOSS (dB)	COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
	IN-OUT	IN-FWD	OUT-REV	IN-REV	OUT-FWD	IN	OUT	FWD	REV
0.5	0.01	39.67	39.65	37.34	32.09	53.17	44.63	30.52	31.43
0.6	0.01	38.30	38.29	47.06	30.73	47.89	43.98	29.41	30.13
0.7	0.01	37.21	37.22	41.41	30.03	44.07	42.13	28.39	28.94
0.8	0.01	36.35	36.37	39.15	28.93	41.90	40.98	27.55	27.88
0.9	0.01	35.66	35.68	39.60	27.52	40.19	40.41	26.91	26.92
1.0	0.01	35.39	35.41	37.32	27.35	39.60	39.94	26.57	26.38
1.0	0.01	35.13	35.15	37.21	27.09	38.69	39.62	26.37	26.08
1.1	0.01	34.93	34.95	35.15	27.19	38.28	39.24	26.08	25.64
1.1	0.01	34.73	34.76	33.28	27.05	37.90	38.45	25.87	25.27
1.3	0.01	34.34	34.36	33.86	25.94	36.41	37.43	25.26	24.39
1.5	0.02	34.11	34.15	31.32	25.13	34.66	34.84	24.75	23.59
1.7	0.02	34.16	34.21	29.70	24.63	32.36	31.47	24.46	23.31
1.9	0.02	34.45	34.49	30.44	24.60	30.10	28.81	24.36	23.46
2.1	0.03	34.81	34.90	30.70	25.04	29.63	27.89	24.67	24.19
2.2	0.02	35.04	35.11	31.86	25.79	30.36	28.11	25.34	25.29
2.4	0.02	35.21	35.25	35.54	28.03	34.52	30.49	26.13	26.99
2.6	0.02	35.13	35.18	44.64	29.89	39.22	34.05	27.28	28.91
2.8	0.03	34.87	34.90	32.10	28.13	29.38	29.44	27.80	28.99
3.0	0.04	34.52	34.54	26.78	23.55	24.83	24.91	26.72	26.84
3.1	0.05	34.44	34.47	26.83	22.80	24.12	24.10	26.24	26.31
3.2	0.05	34.23	34.27	25.04	20.66	23.19	23.14	25.01	24.74
3.4	0.04	33.99	34.05	24.34	18.66	24.12	24.01	23.48	23.07
3.6	0.03	33.92	34.03	24.53	17.23	29.75	28.90	22.23	21.97
3.8	0.03	34.05	34.17	25.33	16.40	43.38	34.14	21.83	21.75
4.0	0.04	34.36	34.44	29.43	15.74	26.87	26.10	22.01	22.11
4.2	0.06	34.76	34.81	41.39	15.73	22.08	21.76	22.57	22.92
4.4	0.07	35.08	35.13	32.97	16.45	20.13	19.96	23.95	24.39
4.6	0.07	35.19	35.26	24.77	17.90	20.47	20.28	25.33	25.86
4.8	0.05	35.07	35.12	21.35	20.66	23.18	22.84	26.49	26.76
5.0	0.03	34.79	34.81	19.53	24.29	30.83	29.45	26.46	26.24
5.1	0.03	34.60	34.64	19.05	26.62	47.44	34.77	25.72	25.56
5.4	0.04	34.03	34.08	19.24	24.25	22.98	22.84	24.21	23.81
5.7	0.07	33.73	33.83	21.36	20.81	19.40	19.29	23.73	23.48
6.0	0.06	33.85	33.92	27.88	18.98	20.90	20.66	24.12	23.62
6.3	0.04	34.26	34.33	31.28	18.71	29.95	27.79	25.56	24.63
6.7	0.04	34.88	35.02	20.11	21.42	25.43	24.80	25.78	24.53
7.0	0.06	34.99	35.11	17.61	27.96	22.05	22.14	26.28	25.51
7.3	0.05	34.59	34.65	17.97	27.64	24.31	24.81	29.06	29.41
7.6	0.03	33.97	34.07	20.40	21.49	39.07	37.69	37.13	43.72
8.0	0.05	33.55	33.61	22.78	17.80	25.55	26.20	33.19	28.92
8.1	0.05	33.54	33.60	22.48	17.32	25.36	25.71	31.28	27.32
8.2	0.05	33.57	33.64	21.47	16.80	25.71	26.20	28.88	25.89
8.3	0.05	33.64	33.72	20.51	16.24	27.20	27.94	28.01	25.35
8.4	0.05	33.72	33.83	19.47	15.79	30.81	31.18	26.52	24.68
8.5	0.04	33.89	33.98	18.97	15.24	32.45	32.84	25.72	24.43
8.6	0.05	34.06	34.15	18.39	14.81	28.03	28.19	24.81	24.17
8.7	0.06	34.24	34.34	18.47	14.44	23.51	23.64	23.94	23.71
8.8	0.07	34.47	34.56	19.23	13.90	20.68	20.66	22.87	23.16
8.9	0.09	34.67	34.72	19.97	13.62	19.01	18.95	22.41	22.90
9.0	0.11	34.83	34.91	21.86	13.32	17.93	17.86	21.76	22.31
9.2	0.11	34.95	34.97	30.53	13.13	18.17	17.91	20.59	21.18
9.4	0.08	34.69	34.79	25.02	13.66	22.56	21.78	19.72	20.29
9.5	0.06	34.49	34.62	20.79	14.00	28.65	27.03	19.68	20.18
9.6	0.06	34.24	34.44	18.31	14.66	37.71	36.31	19.81	20.13
9.8	0.12	33.89	34.06	15.61	16.58	19.65	20.11	21.02	21.07
10.0	0.29	33.72	33.81	14.74	18.42	14.92	14.88	23.92	23.49
10.6	0.15	33.47	33.63	17.66	27.67	17.35	17.70	20.47	20.69
12.3	0.07	33.23	33.31	20.13	13.69	24.55	22.91	22.88	23.95

High Power Bi-Directional Coupler

ZGDC35-93HP+

Typical Performance Curves



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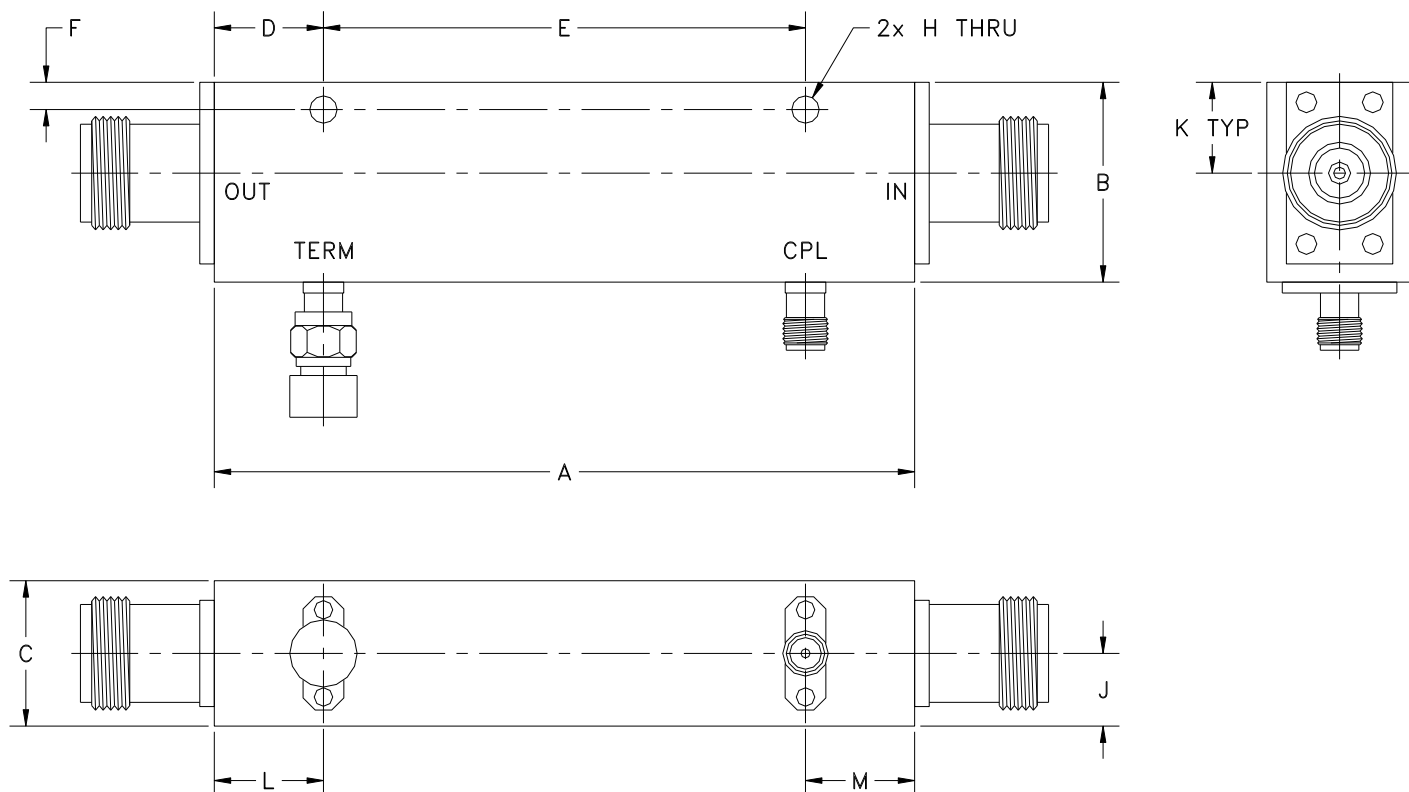
IF/RF MICROWAVE COMPONENTS



REV. X1
ZGDC35-93HP+
8/5/2011
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Outline Dimensions

HT1633



CASE #	A	B	C	D	E	F	G	H	J	K	L	M	WT, GRAMS
HT1633	3.85 (97.79)	1.10 (27.94)	.80 (20.32)	.60 (15.24)	2.650 (67.31)	.15 (3.81)	-	.150 (3.81)	.40 (10.16)	.50 (12.70)	.60 (15.24)	.60 (15.24)	200.0

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

1. Case material: Aluminum alloy.
2. Case finish:

For RoHS Case Styles: Clear Chemical conversion coating, non-chrome or trivalent chrome based.



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RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Liquid Ingress	Immersion in 1 meter water, 1/2 hour	IP67, IEC60529
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I