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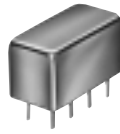
# DIRECTIONAL COUPLERS

50 & 75Ω

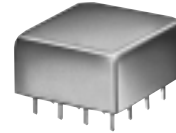
6 to 30 dB COUPLING 5 kHz to 2000 MHz



TDC



PDC



P4DC  
PDC-20A-5

MODEL NO.	FREQ. RANGE MHz $f_l$ - $f_u$	COUPLING dB		MAINLINE LOSS dB				DIRECTIVITY dB				VSWR (:1) Typ.	POWER INPUT, W		CASE STYLE Note B	CONNECTION	PRICE \$ Qty. (1-9)				
		Nom.	Flatness	L	M*	U	L	M*	U	L	MU										
TDC-6-1	10-400	6.3±0.4	±0.4	2.0	2.4	2.0	2.4	2.0	2.5	36	30	30	25	20	15	1.5	1	2	B02	CW	23.95
TDC-10-1	1-400	10.0±0.5	±0.5	1.2	1.5	1.0	1.3	1.2	1.5	35	25	30	20	20	15	1.5	1	2	B02	CW	17.95
TDC-10-2	5-1000	11±0.5	±0.6	1.4	1.8	1.5	1.8	1.6	2.0	50	35	25	20	20	15	1.5	0.5	0.5	B02	CW	25.95
PDC-10-1	0.5-500	11.5±0.5	±0.6	0.85	1.3	0.65	1.0	0.85	1.3	32	25	32	25	22	15	1.2	1.5	3	A01	CU	13.45
◆ PDC-10-1BD	1-400	11.5±0.5	±0.5	0.6	0.9	0.8	1.1	0.9	1.3	55	35	35	20	22	15	1.2	2.0	4	A01	CV	11.45
❖ PDC-10-2	250-1000	10.5±0.5	±0.6	1.4	1.6	—	1.6	2.0	—	30	23	—	—	25	15	1.5	—	5	A01	CU	34.45
PDC-10-5	1-2000	10.5±0.5	±1.0	1.2	1.9	1.3	1.9	2.0	2.5	38	25	30	18	22	15	1.3	0.5	0.5	A01	CU	40.95
PDC-10-6	0.005-20	11±0.5	±0.5	0.4	1.2	0.4	0.8	0.4	1.0	40	30	40	30	35	25	1.3	1.5	3	A01	CU	23.95
PDC-10-21**	1-1000	11±0.5	±0.5	1.2	1.7	1.2	1.7	1.6	2	40	30	25	20	25	20	1.3	1	2	A01	CU	32.95
PDC-10-22	5-750	11±0.5	±0.5	1.1	1.6	1.2	1.7	1.6	1.9	35	30	25	20	25	20	1.25	1	2	A01	CU	23.95
PDC-10-54	10-1500	10.5±0.5	±0.7	1.2	1.8	1.3	1.9	1.6	2.3	35	25	28	23	28	23	1.3	0.5	0.5	A01	CU	35.95
PDC-15-6	0.01-35	15±0.5	±0.5	0.3	0.6	0.2	0.4	0.3	0.6	38	30	35	25	28	20	1.15	2	4	A01	CU	23.95
PDC-15-21	1-500	14.7±0.5	±0.6	0.7	1.1	0.7	1.1	0.8	1.2	35	30	35	30	30	23	1.4	1	2	A01	CU	23.95
PDC-20-1*	25-400	21±0.75	±0.5	0.2	0.25	0.3	0.35	0.35	0.5	25	20	35	25	25	20	1.25	3	5	A01	CU	23.95
◆ PDC-20-1BD	0.5-200	19.2±0.5	±0.5	0.3	0.7	0.3	0.5	0.4	0.6	40	30	35	20	22	18	1.1	3	5	A01	CV	16.95
PDC-20-1W	10-700	19.2±0.5	±0.5	0.25	0.5	0.4	0.7	0.7	1.1	34	30	27	23	23	20	1.4	1	2	A01	CU	23.95
⊛ PDC-20-3	0.2-250	19.5±0.5	±0.5	0.35	0.6	0.25	0.5	0.35	0.6	36	30	33	25	25	20	1.2	1.5	4	A01	CU	15.95
◆ PDC-20-3BD	0.2-250	19.5±0.5	±0.5	0.3	1.0	0.25	0.9	0.35	0.7	47	25	40	25	30	20	1.1	1.5	4	A01	CV	17.95
PDC-20A-5	0.1-2000	20.0±0.5	±1.0	0.6	1.5	0.6	1.5	1.9	2.9	34	20	25	15	20	10	1.5	0.5	2	C145	CY	44.95
■ PDC-10-1-75	1-250	10.5±0.5	±0.75	1.1	1.5	1.1	1.5	1.1	1.5	30	20	30	20	30	20	2.0	2	4	A01	CU	14.95
■ PDC-10-6-75	0.2-100	10.0±0.5	±0.2	1.2	1.6	0.9	1.2	0.9	1.3	50	30	40	25	37	25	1.5	1	2	A01	CU	23.95
■ PDC-15-6-75	0.02-35	14.5±0.5	±0.5	0.3	0.7	0.3	0.7	0.3	0.7	35	20	35	20	35	20	1.3	1.5	4	A01	CU	25.95
■ PDC-20-3-75	1-150	19.5±0.5	±0.75	0.35	0.8	0.35	0.8	0.35	0.8	25	20	25	20	25	20	2.0	2	4	A01	CU	14.95
■ PDC-20-6-75	0.05-40	20.4±0.3	±0.25	0.1	0.25	0.1	0.2	0.1	0.3	45	35	35	20	25	18	1.2	1.5	3	A01	CU	23.95
* P4DC-30A-2	5-1000	30.5±0.5	±1	0.7	1.2	0.7	1.2	0.8	1.5	30	15	32	20	20	10	1.15	1	2	C07	DA	34.95

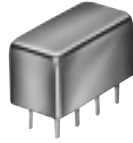
L = low range [ $f_l$  to  $10f_l$ ]    M = mid range [ $10f_l$  to  $f_u/2$ ]    U = upper range [ $f_u/2$  to  $f_u$ ]

NOTES:

- \* L = 25-50 MHz, M = 50-300 MHz, U = 300-400 MHz
- \*\* Upper range coupling ±0.75 dB
- L = 30-100 MHz, M = 100-200 MHz, Operating Temperature +50°C
- L = 40-100 MHz, M = 100-200 MHz
- ◆ Bi-directional
- ❖ L =  $f_l - 2f_l$
- \* 4-coupled ports, Isolation between coupled ports, 25 dB minimum.
- ⊛ Insertion loss specification in L range may degrade up to 1dB at cold temperature, -55°C
- ⊙ When only specification for M range given, specification applies to entire frequency range.
- ▲ Available only with SMA connectors
- Denotes 75 Ohm models
- A. General Quality Control Procedures, Environmental Specifications, Hi-Rel and MIL description are given in General Information (Section 0).
- B. Connector types and case mounted options, case finishes are given in section 0, see "Case styles & Outline Drawings".
- C. Prices and specifications subject to change without notice.
- 1. Mainline Loss includes theoretical power loss at coupled port.
- 2. For PDC-HP models, external heat sinking is recommended to reduce case temperature.

## Plug-In & Coaxial

# 10&20 dB COUPLING up to 25W 30 to 2500 MHz



PDC



ZABDC



ZFDC/ZFBDC

MODEL NO.	FREQ. RANGE MHz $f_l$ - $f_u$	COUPLING dB		MAINLINE LOSS dB				DIRECTIVITY dB				VSWR (:1) Typ.	POWER INPUT, W		CASE STYLE Note B	CONNECTION	PRICE \$ Qty. (1-9)				
		Nom.	Flatness	L Typ.	M <sup>o</sup> Max.	U Typ.	U Max.	L Typ.	M <sup>o</sup> Min.	U Typ.	U Min.		L Max.	MU Max.							
PDC20-400HP <sup>••</sup>	40-400	21.5±0.5	±0.6	0.1	0.3	0.2	0.4	0.2	0.5	30	20	30	20	27	18	1.1	10	10	A01	gh	49.95
PDC20-900HP	800-900	20.2±0.6	±0.5			0.25	0.5					24	20			1.1	5	5	A01	cu	39.95
PDC20-970HP	860-970	20.2±0.6	±0.5			0.25	0.5					24	20			1.1	5	5	A01	cu	39.95
◆ ZABDC10-25HP	1500-2500	10±1.0	±0.5			0.55	0.9					26	18			1.1	10	10	DD477	jp	89.95
◆ ZABDC20-2400	1500-2400	19.5±1.0	±1.0			0.3	0.5					25	18			1.2	10	10	DD477	jp	89.95
◆ ZFDC-20-1H <sup>•</sup>	30-400	20.5±0.5	±0.4	0.15	0.4	0.15	0.4	0.3	0.4	30	25	30	25	30	23	1.2	25	25	J17	de	58.95
▲ ZFBDC20-900HP	800-900	20.7±0.6	±0.6			0.1	0.4					28	20			1.1	10	10	J17	gj	79.95
▲ ZFBDC20-970HP	860-970	20.4±0.6	±0.6			0.1	0.4					28	20			1.1	10	10	J17	gj	79.95

L = low range [ $f_l$  to  $10f_l$ ]    M = mid range [ $10f_l$  to  $f_u/2$ ]    U = upper range [ $f_u/2$  to  $f_u$ ]

### features

- high power operation
- very low insertion loss
- excellent directivity
- excellent VSWR, 1.1:1 typical
- wide bandwidth, 30-400 MHz model ZFDC-20-1H and 40-400 MHz model PDC20-400HP
- cellular application, models PDC-HP ZFDC-HP
- communications applications, ZABDC20-2400, ZABDC10-25HP

### pin and coax connections see case style outline drawing

Port	ct	cu	cv	cw	cy	da	de	gh	gj	jp
Input	5	1	1	1	14	8	S	1	2	1
Output	8	4	4	2	8	12	1	2	3	4
Coupled (forward)	2	3	3	4	5	2,1,13,14*	3	5	1	2
Coupled (reverse)	—	—	6	—	—	—	2	—	S	3
Not Used	11	6	—	—	—	—	—	—	—	—
Case GND	All other pins	2,5,7,8	2,5,7,8	3	All other pins	All other pins	—	3,4,6,7,8	—	—

\* 4-coupled ports #1, #2, #3, #4 consecutively

### NSN GUIDE

MCL NO.	NSN	MIL-C 15370/18*
PDC-10-1	5985-01-178-4406	002
PDC-10-1-75	5985-01-294-3796	
PDC-10-2		008
PDC-10-5	5895-01-389-9497	
PDC-10-21	5985-01-130-0177	003
PDC-10-22	5985-01-190-7738	
PDC-10-54	5895-01-394-6080	
PDC-15-6	5985-01-147-0160	009
PDC-20-3	5985-01-076-8477	001
TDC-10-1	5905-01-226-3428	

\* units are not QPL listed.



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# DIRECTIONAL COUPLERS

50 & 75Ω

Coaxial

6 to 30 dB COUPLING 5 KHz to 2000 MHz



ZADC - case F14



ZADC - case CC51



ZDC



ZEDC

MODEL NO.	FREQ. RANGE MHz $f_l$ - $f_u$	COUPLING dB		MAINLINE LOSS dB				DIRECTIVITY dB			VSWR (:1) Typ.	POWER INPUT, W		CASE STYLE Note B	CONNECTION	PRICE \$ Qty. (1-9)
		Nom.	Flatness	L Typ.	M <sup>o</sup> Typ.	U Typ.	U Max.	L Typ.	M <sup>o</sup> Typ.	U Typ.		L Max.	MU Max.			
■ ZADC-10-4-75 ■ ZADC-20-18-75	10-1000 800-1750	10.7±0.5 19.8±0.6	±0.5 ±0.7	1.18 1.9 1.28 1.9 1.32 1.9	27 20 22 15 18 13	1.17 1.2	1 1 — 1	F14 F14	jz ky	54.95 54.95						
ZADC-10-10 ZADC-10-17 ZADC-10-17W ZADC-20-10 ZADC-30-10	800-1000 1000-1700 800-1900 800-1000 800-1000	10±0.6 9.8±0.5 10.2±1.0 20±0.6 30±0.6	±1.0 ±1.0 ±1.5 ±1.2 ±1.4	.85 1.2 0.8 1.3 0.8 1.3 0.4 0.7 0.4 0.7	22 17 25 17 24 14 21 17 21 16	1.16 1.2 1.2 1.18 1.15	— 5 5 5 5 5 — 5 — 5	CC51 CC51 CC51 CC51 CC51	kc kc kc kc kc	49.95 49.95 49.95 49.95 49.95						
ZDC-10-1 ZDC-20-1* ZDC-20-3	0.5-500 25-400 0.2-250	11.5±0.5 20±0.5 19.5±0.5	±0.6 ±0.5 ±0.5	0.85 1.3 0.65 1.0 0.85 1.3 0.2 0.25 0.3 0.35 0.35 0.5 0.35 0.6 0.25 0.5 0.35 0.6	32 25 32 25 22 15 25 20 35 25 25 20 36 30 33 25 25 20	1.2 1.25 1.2	1.5 3 3 5 1.5 4	M22 M22 M22	dd dd dd	44.95 51.95 44.95						
■ ZDC-10-1-75 ■ ZDC-20-3-75 ■ ZDC-2375 ■ ZDC-20-3-75-1	1-250 1-150 50-100 55-90	10.5±0.5 19.5±0.5 10.5±0.3 18.6±0.5	±0.75 ±0.75 ±0.2 ±0.3	1.1 1.5 1.1 1.5 1.1 1.5 0.35 0.8 0.35 0.8 0.35 0.8 — — — 1.1 1.3 0.4 0.6 0.4 0.6 0.4 0.6	30 20 30 20 30 20 25 20 25 20 25 20 — — — 35 30 35 30 35 30 35 30	2 2 1.3 1.2	2 4 2 4 — 4 — 4	M22 M22 M22 M22	dd dd dd dd	44.95 45.95 52.95 52.95						
ZEDC-10-2B ZEDC-15-2B	1-1000 1-1000	11±0.5 15±0.5	±0.75 ±0.5	1.3 1.8 1.5 1.8 1.5 1.8 0.5 1.4 0.8 1.2 1.0 1.4	35 30 30 20 18 13 35 30 30 20 25 15	1.3 1.15	1.5 3 1.5 3	V37 V37	db db	64.95 64.95						

L = low range [ $f_l$  to  $10f_l$ ]    M = mid range [ $10f_l$  to  $f_u/2$ ]    U = upper range [ $f_u/2$  to  $f_u$ ]

NOTES:

- \* L = 25-50 MHz, M = 50-300 MHz, U = 300-400 MHz
- \*\* Upper range coupling ±0.75 dB
- \*\*\* Above 1000 MHz, coupling flatness ±1 dB.
- ⊗ Insertion loss specification in L range may degrade up to 1dB at cold temperature, -55°C
- ⊕ When only specification for M range given, specification applies to entire frequency range.
- ▲ Available only with SMA connectors
- Denotes 75 Ohm model, for coax connector models 75 Ohm BNC connectors are standard.
- A. General Quality Control Procedures, Environmental Specifications, Hi-Rel and MIL description are given in General Information (Section 0).
- B. Connector types and case mounted options, case finishes are given in section 0, see "Case styles & Outline Drawings".
- C. Prices and specifications subject to change without notice.
- 1. Mainline Loss includes theoretical power loss at coupled port.

NSN GUIDE

MCL NO.	NSN	MCL NO.	NSN
ZDC-10-1B	5985-01-391-5675	ZFDC-15-5	5985-01-298 0144
ZDC-10-1(BNC)	5985-01-125 3467	ZFDC-15-6	5985-01-330-6792
ZDC-20-1	5985-01-178-4405	ZFDC-20-2	5985-01-230-6676
ZDC-20-3(BNC)	5985-01-096-5007	ZFDC-20-3(BNC)	5985-01-146-0478
ZDC-20-3B	5985-01-264-9105	ZFDC-20-3(TNC)	5985-01-226-7882
ZEDC-10-2	5985-01-251-2669	ZFDC-20-3(SMA)	6130-01-383-9709
ZEDC-15-2B	5985-01-337-9981	ZFDC-20 4	5985-01-266-9992
ZFDC-10-1	5985-01-230-6676	ZFDC-20-5(BNC)	5985-01-097-2192
ZFDC-10-1(SMA)	5985-01-179-5122	ZMDC-10-1	4935-01-227-6945
ZFDC-10-1B	5985-01-135-9780	ZMDC-10-1B	4935-01-227-6945
ZFDC-10-2	5985-01-208-5694	ZMDC-20-3	5985-01-193-8515
ZFDC-10-21	5985-01-253-0600		
ZFDC-10-5(SMA)	5985-01-417-0065		
ZFDC-10-6B	5985-01-314-4176		



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000800



ZFDC



ZMDC

MODEL NO.	FREQ. RANGE MHz $f_l$ - $f_u$	COUPLING dB		MAINLINE LOSS dB						DIRECTIVITY dB			VSWR (:1)	POWER INPUT, W		CASE STYLE Note B	CONNECTION	PRICE \$ Qty. (1-9)			
		Nom.	Flatness	L	M*	U	L	M*	U	L	M*	U		Typ.	L Max.				MU Max.		
ZFDC-10-1	1-500	10.5±0.25	±0.6	1.0	1.3	0.8	1.1	1.0	1.3	32	25	33	25	22	15	1.2	1.5	3	K18	db	44.95
ZFDC-10-2	10-1000	10.75±0.5	±0.5	1.5	2.0	1.2	1.8	1.5	2.0	35	28	30	25	27	20	1.5	1.5	3	K18	db	51.95
ZFDC-10-5	1-2000	10.8±0.5	±1.0	1.2	1.9	1.2	1.8	1.8	2.5	38	25	30	18	22	18	1.3	0.5	0.5	K18	db	84.95
ZFDC-10-6	0.005-20	11±0.5	±0.5	0.4	1.2	0.4	0.8	0.4	1.0	40	30	40	30	35	25	1.3	1.5	3	K18	db	52.95
ZFDC-10-21**	1-1000	11±0.5	±0.5	1.2	2.1	1.2	1.7	1.6	2.0	40	30	25	20	25	20	1.2	1	2	K18	db	54.95
■ ZFDC-10-1-75	1-400	10.5±0.5	±0.5	1.0	1.7	1.1	1.5	1.1	1.6	46	30	44	28	34	20	1.3	2	4	K18	db	45.95
■ ZFDC-10-21-75	10-750	11±0.5	±0.75	1.5	1.8	1.5	1.9	1.7	2.1	36	30	30	20	26	20	1.4	1	2	K18	db	54.95
ZFDC-10-22	1-750	11±0.5	±0.5	1.1	1.9	1.2	1.7	1.4	1.9	35	30	25	20	25	20	1.25	1	2	K18	db	49.95
ZFDC-15-5	1-2000	15.5±0.5	±1.0	1.2	1.8	1.2	1.8	1.3	2.3	30	20	25	20	18	11	1.3	0.5	2	K18	dc	71.95
ZFDC-15-6	0.03-35	15±0.5	±0.5	0.3	0.6	0.2	0.4	0.3	0.6	38	30	35	25	28	20	1.15	2	4	K18	db	49.95
ZFDC-15-10	800-1000	15±1.0	±1.0			0.3	0.7					23	17			1.2	—	5	K18	db	44.95
ZFDC-20-3	0.2-250	19.5±0.5	±0.25	0.35	0.6	0.25	0.5	0.35	0.6	36	25	33	25	25	20	1.2	1.5	4	K18	db	44.95
■ ZFDC-20-3-75	10-250	19.3±0.5	±0.3	0.25	0.4	0.3	0.5	0.4	0.6	29	25	29	25	28	24	1.2	1	2	K18	db	49.95
ZFDC-20-4	1-1000	19.5±0.5	±0.5	0.4	1.2	0.4	0.8	0.8	1.5	36	28	27	20	23	18	1.1	.5	2	K18	dc	64.95
▲ ZFDC-20-4L	10-1000	20.2±0.5	±0.5	0.2	0.5	0.3	0.7	0.7	1.2	40	20	30	16	20	14	1.1	1	1	K18	db	64.95
■ ZFDC-20-5-75	100-1500	20.5±0.5	±0.75	0.9	1.3	0.9	1.2	1.1	1.5	30	20	25	18	22	13	1.3	1	1	K18	db	64.95
ZFDC-20-5***	0.1-2000	19.5±0.5	±0.5	0.3	1	0.7	1.4	1.5	2.3	30	20	27	20	22	10	1.2	.5	2	K18	dc	84.95
▲ ZFDC-20-50***	20-2000	19.5±0.5	±0.8	0.8	1.3	0.7	1.3	1.0	1.6	30	20	25	20	22	10	1.25	1	1	K18	dc	64.95
ZMDC-10-1	0.5-500	11.5±0.5	±0.6	0.85	1.3	0.65	1.0	0.85	1.3	32	25	32	25	22	15	1.2	1.5	3	M21	dd	49.95
⊗ ZMDC-20-3	0.2-250	19.5±0.5	±0.5	0.35	0.6	0.35	0.5	0.35	0.6	36	30	33	25	25	20	1.2	1.5	4	M21	dd	49.95
ZMDC-30-1	0.1-250	30±0.5	±0.5	0.4	0.6	0.5	0.8	0.55	0.85	23	18	20	15	17	10	1.5	1.0	3	M21	dd	51.95

L = low range [ $f_l$  to  $10f_l$ ]    M = mid range [ $10f_l$  to  $f_u/2$ ]    U = upper range [ $f_u/2$  to  $f_u$ ]

coaxial connections    see case style outline drawings

Port	db	dc	dd	de	jz	kc	ky
Input	1	3	3	S	1	1	S
Output	2	1	2	1	2	3	1
Coupled (forward)	3	2	1	3	S	2	2
Coupled (reverse)	—	—	—	2	—	—	—



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