

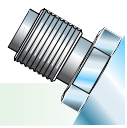
MIXERS, FREQUENCY 50 Ω

500 Hz to 15 GHz



MODEL PREFIX	FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						S C H E M A T I C
	LO/RF f _L -f _U	IF	MID-BAND m x̄	TOTAL RANGE σ Max.			L Typ.	Min.	M Typ.	Min.	U Typ.	Min.	L Typ.	Min.	M Typ.	Min.	U Typ.	Min.	
LEVEL 3 +3 dBm LO up to 0 dBm RF																			
ZX05-1L	2-500	DC-500	5.2	0.1	7.2	8.0	68	50	55	30	44	30	55	40	45	30	35	25	1
LEVEL 4 +4 dBm LO up to +1 dBm RF																			
ZX05-10L	10-1000	DC-800	7.2	0.1	8.2	8.8	70	55	60	40	47	37	40	26	37	20	24	13	1
ZX05-73L	2400-7000	DC-3000	6.2	0.2	—	8.3			30	16					20	12			1
LEVEL 7 +7 dBm LO up to +1 dBm RF																			
ZAD-8	0.0005-10	DC-10	5.79	0.05	7.5	8.5	60	50	50	40	45	35	60	50	50	40	45	35	1
ZAD-6	0.003-100	DC-100	4.65	0.08	7.5	8.5	60	50	45	30	35	25	60	45	40	25	30	20	1
ZLW-6	0.003-100	DC-100	4.58	0.05	7.5	8.5	60	50	45	30	35	25	60	45	40	25	30	25	1
ZAD-3	0.025-200	DC-200	4.61	0.06	7.5	8.5	60	50	45	35	35	25	45	35	40	30	30	20	1
ZLW-3	0.025-200	DC-200	4.61	0.06	7.5	8.5	60	50	45	35	35	25	45	35	40	30	30	20	1
ZFM-3	0.04-400	DC-400	4.78	0.03	7.0	8.0	60	50	50	35	35	25	55	40	45	30	35	25	1
ZP-3	0.15-400	DC-400	4.70	0.10	7.0	8.0	60	50	46	30	35	25	60	40	47	25	35	20	1
ZAD-1-1	0.1-500	DC-500	4.83	0.04	7.5	8.5	50	45	45	30	35	25	45	30	40	25	30	20	1
ZLW-1-1	0.1-500	DC-500	4.82	0.07	7.5	8.5	50	45	45	30	35	25	45	30	40	25	30	20	1
ZP-10514	0.2-500	DC-500	5.18	0.10	7.0	8.5	55	45	50	35	35	30	50	40	36	30	30	20	1
ZAD-1	0.5-500	DC-500	5.24	0.10	7.0	8.5	50	45	45	30	35	25	45	35	40	25	30	20	1
ZLW-1	0.5-500	DC-500	5.81	0.08	7.0	8.5	50	45	45	30	35	25	45	35	40	25	30	20	1
ZX05-1	0.5-500	DC-500	5.00	0.10	6.5	7.8	70	50	55	35	45	30	65	45	40	25	30	20	1
ZP-1	2-600	DC-600	5.85	0.10	7.0	8.0	60	50	42	30	37	25	60	45	47	30	36	22	1
ZLW-1W	1-750	DC-750	5.74	0.05	7.5	8.5	50	45	45	30	35	25	45	30	40	25	30	20	1
ZFM-1W	10-750	DC-750	5.42	0.14	7.0	8.0	50	45	45	30	35	25	45	40	40	25	27	20	1
ZAD-2	1-1000	0.5-500	5.66	0.07	7.5	8.5	45	30	35	20	30	20	45	30	35	20	30	20	1
ZFM-2	1-1000	DC-1000	5.72	0.06	7.5	8.5	50	45	40	25	30	25	45	40	35	25	25	20	1
ZLW-2	1-1000	DC-1000	5.68	0.08	7.5	9.5	55	45	40	25	35	20	50	40	40	25	30	20	1
ZX05-2	5-1000	DC-1000	6.67	0.26	8.0	9.5	65	50	47	25	35	22	62	35	45	25	32	20	1
ZEM-2B	10-1000	DC-1000	5.74	0.07	7.0	8.5	55	50	30	25	25	20	55	45	30	20	25	20	1
ZX05-10	10-1000	DC-800	6.80	0.10	7.8	8.3	80	50	60	40	47	37	40	26	33	20	24	13	1
ZP-2	50-1000	DC-1000	5.85	0.10	7.5	9.0	58	40	47	30	42	25	50	35	44	20	29	18	1
ZFM-4	5-1250	DC-1250	5.70	0.34	7.5	8.5	50	45	40	30	30	25	45	40	35	25	25	20	1
ZFM-12	800-1250	50-90	5.67	0.12	—	7.5	35	25	35	25	35	25	30	20	30	20	30	20	1
ZFM-5X	1-1500	1-1000	5.90	0.10	7.0	9.0	60	40	40	20	28	17	60	45	45	25	38	20	1
ZP-5X	1-1500	1-1000	5.90	0.10	7.0	9.0	60	40	40	20	28	17	60	45	45	25	38	20	1
ZLW-5	5-1500	10-600	5.81	0.08	7.5	8.5	55	40	35	25	30	20	50	40	35	25	30	20	1
ZX05-5	5-1500	DC-1000	6.60	0.10	7.5	9.3	50	40	40	25	33	23	50	40	30	20	20	10	1
ZP-5	20-1500	DC-1000	5.70	0.10	9.0	9.0	54	40	42	30	39	25	40	25	32	18	23	8	1
ZFM-11	1-2000	5-600	7.03	0.17	8.5	9.0	50	45	35	25	25	20	45	40	27	20	25	20	1
ZAD-11	5-2000	10-600	7.12	0.12	8.5	9.0	50	45	35	25	30	20	45	40	30	20	25	15	1
ZLW-11	5-2000	10-600	6.85	0.10	8.5	9.0	50	45	35	25	30	20	45	40	30	20	25	15	1
ZX05-11X	10-2000	5-1000	7.10	0.10	8.2	9.8	62	45	36	20	27	18	60	45	37	20	38	20	1
ZFM-2000	100-2000	DC-600	7.49	0.20	9.5	9.5	37	20	37	20	37	20	30	20	30	20	30	20	1
ZX05-C24	300-2400	DC-700	6.10	0.10	8.9	—			40	25					25	15			1
ZX05-30W	300-4000	DC-950	6.80	0.20	9.0	9.8			35	17					16	7			1
ZX05-43	750-4200	DC-1500	6.1	0.1	—	8.9			35	22					21	9			1
ZX05-C42	1000-4200	DC-1500	6.10	0.10	—	8.9			35	23					20	12			1
ZAM-42	1500-4200	DC-500	5.67	0.11	—	8.5	25	14	25	14	25	14	18	10	18	10	18	10	1
ZFM-4212	2000-4200	DC-1300	5.44	0.088	—	8.5	25	17	25	17	25	17	18	10	18	10	18	10	1
ZEM-4300	300-4300	DC-1000	6.65	0.06	—	9.5	40	20	—	—	30	17	15	8	—	—	15	8	1
ZX05-C60	1600-6000	DC-2000	6.20	0.30	—	8.5			28	17					18				1
ZX05-83	2300-8000	DC-3000	6.0	0.2	—	8.5			29	15					24	8			1
ZMX-7GR	3700-7000	DC-1000	5.00	0.30	—	8.2			30	20					36	20			1
ZMX-10G	3700-10000	DC-2000	5.00	0.10	—	8.5			30	20					17	8			1
ZX05-14	3700-10000	DC-4000	6.7	0.3	—	10.0			38	25					16	9			1
ZX05-153	3400-15000	DC-4000	6.8	0.7	—	13.5			36	16					23	9			1

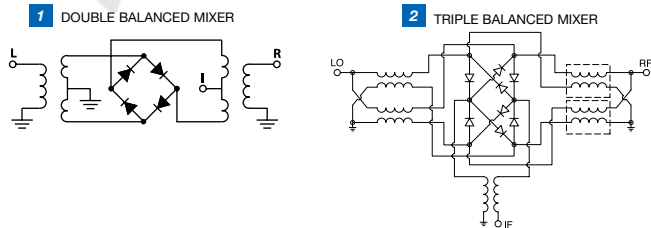
L = low range (f_L to $10f_L$)M = mid range ($10f_L$ to $f_U/2$)U = upper range ($f_U/2$ to f_U)m = mid band ($2f_L$ to $f_U/2$)

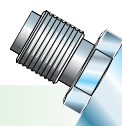


MODEL PREFIX	FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						SCHEMATIC
	LO/RF f _L -f _U	IF	MID-BAND m		TOTAL RANGE Max.	L		M		U		L		M		U			
			$\bar{x}$	σ		Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	
LEVEL 10 +10 dBm LO up to +5 dBm RF																			
ZP-3LH	0.15-400	DC-400	4.8	0.37	7.0	8.0	67	50	51	30	40	25	67	40	45	25	34	20	1
ZP-1LH	2-600	DC-600	6.0	0.17	7.0	8.0	70	50	50	30	42	25	65	45	50	30	41	22	1
ZX05-1LHW	2-750	DC-750	5.3	0.10	6.8	8.5	66	50	52	35	46	27	64	40	50	27	40	20	1
ZP-5LH	20-1500	DC-1000	6.9	0.27	8.5	9.0	53	40	42	30	38	25	40	25	30	18	22	8	1
ZP-11ALH	1400-1900	40-500	7.0	0.20	8.6	8.6			36	20					28	15			1
ZFM-150	10-2000	DC-1000	6.05	0.12	8.0	8.0	32	25	35	25	35	20	33	20	30	20	25	20	2
ZX05-C24LH	300-2400	DC-700	6.5	0.10	—	8.9			40	25					30	15			1
ZFM-15	10-3000	10-800	6.13	0.14	8.0	8.5	35	25	35	25	35	25	30	20	30	20	30	20	2
ZX05-43LH	824-4200	DC-1500	6.1	0.1	—	8.8			35	23					21	7			1
ZX05-C42LH	1000-4200	DC-1500	6.0	0.10	—	8.9			38	23					20	11			1
ZX05-63LH	750-6000	DC-1000	6.2	0.2	—	9.6			34	20					20	10			1
ZX05-C60LH	1600-6000	DC-2000	6.1	0.10	8.5	—			30	20					21	—			1
ZMX-7GLHR	3700-7000	DC-1500	5.4	0.30	—	9.8	33	20	33	20	33	20	35	20	35	20	35	20	1
ZX05-83LH	1700-8000	DC-3000	6.0	0.2	—	8.5			28	16					23	8			1
ZMX-8GLH	3700-8000	DC-2000	5.5	0.20	—	9.8	40	20	40	20	40	20	18	8	18	8	18	8	1
ZX05-14LH	3700-10000	DC-4000	6.7	0.3	—	9.5			38	25					17	9			1
ZX05-153LH	3200-15000	DC-4000	6.6	0.4	—	14.2			36	15					18	9			1
LEVEL 13 +13 dBm LO up to +9 dBm RF																			
ZP-3MH	0.15-400	DC-400	5.0	0.33	7.0	8.0	60	50	46	30	35	25	60	40	42	25	35	20	1
ZX05-1MHW	0.5-600	DC-600	5.2	0.10	6.9	8.0	63	50	53	32	43	20	56	40	44	25	30	20	1
ZP-1MH	2-600	DC-600	6.3	0.12	7.0	8.0	68	50	50	30	43	25	65	45	48	30	37	22	1
ZP-2MH	50-1000	DC-1000	6.0	0.25	7.5	9.0	58	40	47	30	37	25	55	35	47	20	32	18	1
ZX05-12MH	10-1200	DC-1200	6.3	0.10	8.0	9.3	62	45	45	32	40	26	68	40	42	27	30	20	1
ZP-5MH	20-1500	DC-1000	7.0	0.25	8.5	9.0	50	40	41	30	35	25	38	25	28	18	20	8	1
ZEM-M2TMMH	10-2400	10-1000	6.9	0.10	9.0	9.5	49	40	43	35	42	35	49	40	44	30	40	30	2
ZX05-C24MH	300-2400	DC-700	6.1	0.10	—	8.6			40	20					25	14			1
ZLW-186MH	2-2500	2-1000	6	0.11	8.5	9.5	33	25	35	25	30	20	42	25	49	25	32	20	2
ZX05-25MH	5-2500	5-1500	6.9	0.10	8.8	9.8	47	28	34	23	34	23	34	23	32	18	23	17	2
ZX05-42MH	5-4200	5-3500	7.5	0.20	9.8	11.8	47	28	29	20	30	15	34	23	26	17	23	17	2
ZX05-43MH	824-4200	DC-1500	6.1	0.1	—	9.8			35	22					22	7			1
ZX05-C42MH	1000-4200	DC-1500	6.2	0.10	—	8.9			35	15					20	10			1
ZEM-4300MH	300-4300	DC-1000	6.42	0.15	—	8.5	40	20	—	—	40	20	14	7	—	—	12	7	1
ZX05-C60MH	1600-6000	DC-2000	6.4	0.10	—	8.5			28	18					17	—			1
ZMX-7GMH	3700-7000	DC-2000	4.7	0.20	—	8.0	37	20	37	20	40	20			17	8			1
ZX05-153MH	3200-15000	DC-4000	6.5	0.4	—	13.6			36	14					18	9			1

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)
m = mid band ($2f_L$ to $f_U/2$)

ELECTRICAL SCHEMATICS





MIXERS, FREQUENCY 50 Ω 50 kHz to 10 GHz



MODEL PREFIX	FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						S C H E M A T I C
	LO/Rf f_L-f_U	IF	MID-BAND $\bar{m}$ σ		TOTAL RANGE Max.		L Typ.	M Min.	U Typ.	M Min.	U Typ.	M Min.	L Typ.	M Min.	U Typ.	M Min.	U Typ.	M Min.	

LEVEL 17 +17 dBm LO up to +14 dBm RF

ZAD-3H	0.05-200	DC-200	4.89	0.09	7.0	7.5	55	45	45	30	35	25	45	35	40	30	30	2	1
ZFM-3H	0.05-300	DC-300	5.18	0.11	7.0	8.5	55	45	40	30	30	25	50	40	35	25	25	20	1
ZP-3H	0.15-400	DC-400	5.00	0.33	7.0	8.0	60	50	50	35	40	30	60	40	45	25	35	20	1
ZAD-1H	0.5-500	DC-500	6.16	0.08	7.5	8.5	50	45	45	30	35	25	45	35	40	30	30	20	1
ZLW-1H	0.5-500	DC-500	6.13	0.08	7.5	8.5	55	45	45	30	35	25	45	35	40	30	30	20	1
ZLW-1SH	2-500	DC-500	5.9	0.08	7.5	8.5	50	40	40	30	30	25	45	35	35	25	25	20	1
ZFM-1H	2-500	DC-500	6.14	0.11	7.5	8.5	50	45	40	30	30	25	45	35	35	25	25	20	1
ZP-1H	2-600	DC-600	5.90	0.18	7.0	8.0	68	50	50	30	43	25	62	45	48	30	33	22	1
ZLW-1WSH	5-750	DC-750	5.83	0.07	7.5	9.0	50	45	40	30	30	20	45	40	35	25	30	20	1
ZX05-1HW	5-750	DC-750	6.0	0.10	8.6	9.0	64	45	48	35	42	28	50	35	40	30	30	20	1
ZLW-2H	2-1000	DC-1000	6.34	0.14	7.5	10.0	50	40	35	25	35	25	45	35	30	20	25	20	1
ZFM-2H	5-1000	DC-1000	6.12	0.12	7.0	10.0	50	40	40	30	30	20	45	40	35	25	25	17	1
ZX05-10H	10-1000	DC-800	7.0	0.10	8.5	9.5	68	52	55	38	47	25	46	30	32	20	26	13	1
ZP-2H	50-1000	DC-1000	6.20	0.22	7.5	9.0	58	40	47	30	42	25	58	35	44	25	28	18	1
ZFM-4H	5-1200	DC-1200	4.97	0.11	8.0	9.0	50	40	35	25	30	20	50	40	35	20	30	20	1
ZP-5H	20-1500	DC-1000	7.50	0.17	8.5	9.0	62	55	50	40	38	25	40	25	29	18	20	8	1
ZX05-17H	100-1700	50-1500	7.2	0.10	8.5	9.5	32	20	—	—	36	22	32	20	—	—	37	22	2
ZP-11AH	1400-1900	40-500	7.30	0.28	9.0	9.0	—	—	35	25	—	—	—	—	30	15	—	—	1
ZX05-20H	1500-2000	DC-300	5.2	0.20	7.8	7.8	—	—	31	22	—	—	—	—	34	20	—	—	1
ZAD-11H	10-3000	10-1000	6.83	0.09	10.0	12.0	27	20	25	18	23	16	27	20	25	18	23	16	2
ZLW-11H	10-3000	10-1000	6.83	0.09	10.0	12.0	27	20	25	18	23	16	27	20	25	18	23	16	2
ZX05-43H	1000-4000	DC-1500	6.1	0.1	—	9.6	—	—	35	25	—	—	—	—	21	7	—	—	1
ZMX-7GHR	3700-7000	DC-1000	5.3	0.30	—	8.5	—	—	33	20	—	—	—	—	34	20	—	—	1
ZX05-762H	2300-7600	DC-3000	6.0	0.2	—	8.5	—	—	30	16	—	—	—	—	25	11	—	—	1
ZMX-8GH	3700-8000	DC-2000	5.8	0.30	—	8.5	—	—	40	20	—	—	—	—	18	8	—	—	1
ZX05-14H	3700-10000	DC-4000	7.0	0.3	—	10.8	—	—	38	27	—	—	—	—	15	9	—	—	1

LEVEL 23 +23 dBm LO up to +20 dBm RF

ZAY-3	0.07-200	DC-200	5.53	0.08	7.5	8.0	55	45	40	30	30	25	55	45	40	30	30	20	1
ZMY-3	0.07-200	DC-200	5.53	0.08	7.5	8.0	55	45	40	30	30	25	55	45	40	30	30	20	1
ZFY-1	0.1-500	0.01-500	4.85	0.18	6.0	7.5	40	20	46	35	40	30	37	23	46	35	40	30	2
ZAY-1	5-500	DC-500	6.57	0.09	7.5	8.5	55	45	40	30	30	25	55	45	40	30	30	20	1
ZMY-1	5-500	DC-500	6.62	0.10	7.5	8.5	55	45	40	30	30	25	55	45	40	30	30	20	1
ZFY-2	0.1-1000	0.01-500	5.40	0.24	7.5	9.5	40	20	40	30	30	25	37	23	40	25	25	15	2
ZAY-2	10-1000	DC-1000	6.89	0.22	8.5	10.0	50	35	40	30	35	25	50	35	35	25	25	20	1
ZMY-2	10-1000	DC-1000	6.89	0.22	8.5	10.0	50	35	40	30	35	25	50	35	35	25	25	20	1
ZFY-11	10-2400	5-1000	7.40	0.09	8.5	10.0	28	20	25	20	25	20	28	20	26	20	25	20	2

MODEL PREFIX	LO LEVEL (dBm)	RF IN @ 1 dB compr. Typ. (dBm)	FREQUENCY (MHz)			CONVERSION LOSS (dB)			LO-IF (IN) ISOLATION (dB)		LO-RF (OUT) ISOLATION (dB)		IP3 @ centerband (dBm)	S C H E M A T I C
			IF (IN)	LO	RF (OUT)	Typ.	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.	

UP CONVERTERS 0.1 to 7100 MHz

ZX05-U63	7	+1	1600-2500	3100-5700	3800-6000	7.0	0.3	8.6	17	13	40	28	10	1
ZX05-U742MH	13	+9	0.1-3300	2300-7400	2300-7400	8.3	0.2	9.9	23	10	25	11	20	1
ZX05-U432H	17	+14	0.1-800	1100-4250	1100-3900	7.5	0.2	9.8	24	13	35	26	26	1
ZX05-U712H	17	+14	2600-7100	10-1780	2600-7100	7.5	0.3	9.2	30	17	24	15	27	1

L = low range (f_L to $10f_L$)

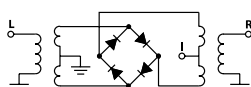
M = mid range ($10f_L$ to $f_U/2$)

U = upper range ($f_U/2$ to f_U)

m = mid band ($2f_L$ to $f_U/2$)

ELECTRICAL SCHEMATICS

1 DOUBLE BALANCED MIXER



2 TRIPLE BALANCED MIXER

