

MIXERS, ACTIVE 50 Ω (Hermetic)
10 MHz to 500 MHz



UNCL
Case A01

MODEL PREFIX	FREQUENCY (MHz)		CONVERSION GAIN, (dB)					LO-RF ISOLATION, (dB)						LO-IF ISOLATION, (dB)						INPUT POWER (dBm) 1 dB Comp Typ.	DC POWER Volt Current (mA)
	LO/RF f_L - f_U	IF	MID-BAND m		TOTAL RANGE			L		M		U		L		M		U			
			$\bar{x}$	σ	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.		

LEVEL 7 +7 dBm LO up to -10 dBm RF Low Noise

UNCL-R1	10-500	DC-500	5.53	0.11	2.0	5.0	2.0	65	45	55	40	47	35	40	30	30	20	25	17	-10	12 35
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	LO/RF f_L - f_U	IF	MID-BAND		TOTAL RANGE	L		M		U		L		M		U				
			$\bar{x}$	σ		Min.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.		

LEVEL -4 -4 dBm LO up to +1 dBm RF

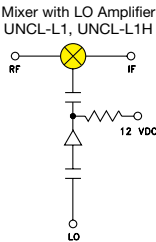
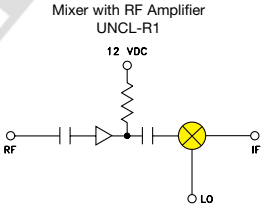
UNCL-L1	10-500	DC-500	5.73	0.8	8.0	8.5	45	30	35	20	25	17	32	20	23	15	18	12	1	12 35
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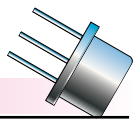
LEVEL 6 +6 dBm LO up to +14 dBm RF

UNCL-L1H	10-500	DC-500	5.73	0.07	8.0	8.5	45	25	36	20	24	17	32	18	25	15	18	10	14	12 60
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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





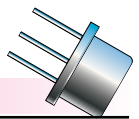
MIXERS, FREQUENCY 500 Hz to 4.3 GHz

50 Ω (Hermetic and Non Hermetic)



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	Σ	MID-BAND m σ		TOTAL RANGE Max.	L		M		U		L		M		U		
				Typ.	Min.		Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	
LEVEL 7 +7 dBm LO up to +1 dBm RF																			
SRA-8	0.0005-10	DC-10	5.69	0.11	7.5	8.5	60	50	50	40	45	35	60	50	50	40	45	35	1
SRA-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	20	1
SBL-3	0.025-200	DC-200	4.81	0.05	7.5	8.5	55	50	45	30	35	25	45	35	40	30	30	20	1
SRA-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
TAK-5	0.01-250	DC-250	4.65	0.02	7.0	8.5	60	50	50	35	40	35	55	45	45	30	35	25	1
TFM-3	0.04-400	DC-400	4.70	0.06	7.0	8.0	60	50	50	35	35	25	55	40	45	30	35	25	1
SBL-1-1	0.1-400	DC-400	4.84	0.04	7.0	8.0	50	45	45	30	35	25	45	30	40	25	30	20	1
TUF-3	0.15-400	DC-400	4.7	0.02	7.0	8.0	60	50	46	30	35	25	60	40	47	25	35	20	1
SRA-1-1	0.1-500	DC-500	4.81	0.11	7.5	8.5	50	45	45	30	35	25	45	30	40	25	30	20	1
TSM-3	0.1-500	DC-500	4.75	0.04	7.5	8.5	60	50	50	35	35	25	55	45	45	30	35	25	1
SRA-1	0.5-500	DC-500	5.11	0.09	7.0	8.5	50	45	45	30	35	25	45	35	40	25	30	20	1
SBL-1	1-500	DC-500	5.60	0.09	7.0	8.0	60	45	45	35	40	25	45	35	40	25	30	20	1
TAK-6	0.5-600	DC-600	5.58	0.04	7.5	8.5	60	50	50	30	40	25	55	45	45	30	30	20	1
ASK-1-X65	1-600	DC-600	5.58	0.06	7.0	8.5	50	30	35	25	30	20	45	35	30	20	25	15	1
SAM-1	1-600	DC-600	5.67	0.05	7.0	8.5	55	45	45	30	35	20	50	40	40	25	30	20	1
TUF-1	2-600	DC-600	5.85	0.04	7.0	8.0	60	50	42	30	37	25	60	45	47	30	36	22	1
SRA-1W	1-750	DC-750	5.80	0.04	7.5	8.5	50	45	45	30	35	25	45	30	40	25	30	20	1
SRA-2	1-1000	0.5-500	5.66	0.07	7.5	8.5	45	30	35	20	30	20	45	30	30	20	30	20	1
TFM-2	1-1000	DC-1000	5.74	0.07	7.5	8.5	50	45	40	25	30	25	45	40	35	25	25	18	1
SRA-2CM	5-1000	DC-1000	5.27	0.04	7.0	8.5	60	50	35	30	30	25	50	45	30	25	25	20	1
SBL-1X	10-1000	5-500	5.88	0.10	7.5	8.0	50	40	40	30	30	20	50	45	40	35	35	25	1
TUF-2	50-1000	DC-1000	5.85	0.07	7.5	9.0	58	40	47	30	42	25	50	35	44	20	29	18	1
TFM-4	5-1250	DC-1250	6.47	0.05	7.5	8.5	50	45	40	30	30	25	45	40	35	25	25	20	1
SRA-12	800-1250	50-90	6.21	0.13	7.5	7.5			35	25					30	20			1
TFM-12	800-1250	50-90	5.71	0.14	—	7.5	35	25	35	25	35	25	30	20	30	20	30	20	1
SRA-5	5-1500	10-600	6.69	0.07	8.0	8.5	50	45	35	30	30	20	45	40	30	25	25	15	1
TUF-5	20-1500	DC-1000	5.7	0.04	9.0	9.0	54	40	42	30	39	25	40	25	32	18	23	8	1
TFM-11	1-2000	5-600	7.16	0.07	8.5	9.0	50	45	35	25	25	20	45	40	27	20	25	20	1
SBL-11	5-2000	10-600	7.08	0.11	8.5	9.0	50	45	35	25	30	20	45	40	30	20	25	15	1
SRA-11	5-2000	10-600	6.72	0.07	8.5	9.0	50	45	35	25	30	20	45	40	30	20	25	15	1
SRA-2000	100-2000	DC-600	8.60	0.15	9.5	9.5	37	20	37	20	37	20	30	20	30	20	30	20	1
SRA-2400	750-2400	DC-400	5.95	0.26	9.0	9.0	30	20	30	20	30	20	30	8	30	8	30	8	1
TFM-2400	750-2400	DC-400	6.65	0.20	—	9.0	30	20	30	20	30	20	30	10	30	10	30	10	1
SRA-3500	500-3500	DC-1000	7.28	0.31	9.5	9.5	30	17	30	17	30	17	20	8	20	8	20	8	1
TFM-4300	300-4300	DC-800	5.87	0.13	—	10.5	30	20	—	—	30	17	15	7	19	7	10	7	1
LEVEL 10 +10 dBm LO up to +5 dBm RF																			
TUF-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
TUF-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
SBL-2LH	5-1000	DC-1000	5.9	0.09	7.5	9.5	67	45	61	30	57	30	68	40	54	30	43	20	1
SBL-1XLH	10-1000	5-500	6.0	0.12	7.5	8.5	50	40	40	25	30	20	70	45	55	40	45	30	1
TUF-2LH	50-1000	DC-1000	5.2	0.30	7.0	8.5	58	40	44	30	39	25	60	35	50	25	38	20	1
TUF-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
SRA-220	0.05-2000	0.05-500	5.59	0.11	8.0	9.0	25	20	40	30	30	20	25	20	40	30	25	15	2
TFM-150	10-2000	DC-1000	6.19	0.11	8.0	8.0	32	25	35	25	35	25	33	20	30	20	30	20	2
TFM-15	10-3000	10-800	6.75	0.08	8.0	8.5	35	25	35	25	35	25	30	20	30	20	30	20	2





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		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 13 +13 dBm LO up to +9 dBm RF																			
SRA-3MH	0.025-200	DC-200	4.77	0.07	7.5	8.5	60	50	45	35	35	25	45	35	40	30	30	20	1
TFM-3MH	1-250	DC-250	4.79	0.23	7.0	8.5	50	45	40	30	28	23	45	40	35	25	26	20	1
SRA-1MH	0.5-500	DC-500	5.65	0.04	7.0	8.5	50	45	45	30	35	25	45	35	40	25	30	20	1
SBL-1MH	1-500	DC-500	5.73	0.08	7.5	8.5	50	35	45	30	35	25	45	30	40	25	30	20	1
TFM-1MH	2-500	DC-500	5.80	0.05	7.5	8.5	50	45	40	30	30	20	45	40	35	25	25	20	1
TUF-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
SBL-12MH	2-1100	DC-500	6.63	0.10	8.0	9.0	50	40	40	30	30	20	40	30	25	20	25	15	1
TUF-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
TFM-12MH	0.5-2000	0.2-600	6.99	0.16	8.0	9.5	60	45	35	30	30	25	55	40	30	25	25	20	1
ROK-186MH	5-2500	10-1000	6.57	0.11	8.5	9.5	33	25	35	25	25	20	33	20	31	25	27	20	2
TFM-42MH	10-4200	10-1000	7.46	0.12	8.5	11.0	35	25	40	25	35	25	35	20	35	25	27	20	2
LEVEL 17 +17 dBm LO up to +14 dBm RF																			
SRA-3H	0.05-200	DC-200	5.18	0.05	7.0	7.5	50	45	40	30	35	25	45	35	40	30	30	20	1
TFM-3H	0.1-250	DC-250	4.58	0.11	7.0	8.5	50	45	40	30	28	23	45	40	35	25	26	20	1
TAK-3H	0.05-300	DC-300	4.82	0.09	7.0	8.5	55	45	40	30	30	25	50	40	35	25	25	20	1
SRA-1H	0.5-500	DC-500	6.01	0.08	7.5	8.5	55	45	45	30	35	25	45	35	40	30	30	20	1
TAK-1H	2-500	DC-500	5.93	0.08	7.5	8.5	50	40	40	30	30	25	45	35	35	25	25	20	1
TFM-1H	2-500	DC-500	6.14	0.11	7.5	8.5	50	45	40	30	30	20	45	40	35	25	25	20	1
TUF-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
SRA-1WH	1-750	DC-750	5.85	0.11	7.5	8.5	50	40	45	25	35	25	45	35	40	30	30	20	1
TAK-1WH	5-750	DC-750	5.71	0.08	7.5	9.0	50	40	40	30	30	25	45	35	35	25	30	20	1
SRA-2H	2-1000	DC-1000	6.34	0.14	7.5	10.0	50	40	35	25	35	25	45	30	30	20	25	20	1
TFM-2H	5-1000	DC-1000	6.12	0.12	7.0	10.0	50	45	40	30	30	20	45	40	35	25	25	17	1
SRA-173H	5-1200	DC-1200	5.38	0.05	7.0	8.5	40	35	35	25	35	20	40	35	35	20	30	20	2
SIMA-5H	2-1500	DC-1000	6.94	0.07	8.5	8.5	65	35	44	23	40	22	54	25	30	23	25	13	1
TUF-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
TUF-18DH	100-1800	50-750	7.3	0.15	8.5	9.0	41	23	41	23	41	23	33	20	33	20	33	20	2
SRA-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
LEVEL 23 +23 dBm LO up to +20 dBm RF																			
RAY-6U	0.01-100	DC-100	5.09	0.15	7.0	8.0	60	50	50	40	40	30	50	45	40	30	35	25	1
RAY-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
SAY-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
RAY-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
SAY-11	0-2400	5-1000	7.40	0.09	8.5	10.0	28	20	26	20	25	20	28	20	26	20	25	20	2
RAY-11	100-2500	DC-500	6.23	0.21	9.0	9.0	35	25	32	25	32	25	14	10	20	10	20	10	1
LEVEL 27 +27 dBm LO up to +24 dBm RF																			
VAY-1	0.5-500	0.02-500	5.79	0.15	7.5	8.5	47	40	46	35	35	25	35	28	46	35	35	25	2

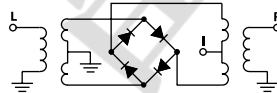
L = low range (f_L to $10f_L$)

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

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

ELECTRICAL SCHEMATICS

1 DOUBLE BALANCED MIXER



2 TRIPLE BALANCED MIXER

