

FREQUENCY MIXERS

Surface Mount

LEVEL 10 150 kHz to 6 GHz



ADE



†JMS



†LRMS-J



MBA

+10 dBm LO, up to +5 dBm RF

MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB						LO-IF ISOLATION, dB						IP3@ center band Typ. (dBm)	CASE STYLE	CONNECTION	PRICE \$		
	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.						
◆ ADE-1LH** ◆ ADE-1LHW**	0.5-500 2-750	DC-500 DC-750	5.0 5.3	0.10 0.1	6.5 6.8	8.2 8.5	65 66	50 50	55 52	35 35	47 46	26 27	52 64	40 40	45 50	22 27	34 40	20 20	15 15	CD636 CD542	ht ht	2.99*** 4.95***		
JMS-1LH JMS-2LH JMS-5LH	2-500 20-1000 5-1500	DC-500 DC-1000 DC-1000	5.75 6.5 6.0	.10 .10 .20	7.0 7.5 8.0	8.0 9.0 9.5	67 60 60	50 40 40	55 48 50	30 25 25	42 37 35	25 20 20	50 45 55	40 30 40	45 35 35	25 20 14	32 27 15	20 11 6	— — —	BH292 BH292 BH292	ht ht ht	8.45 9.45 10.95		
◆ LRMS-1LHJ ◆ LRMS-2LHJ ◆ LRMS-5LHJ	2-500 5-1000 10-1500	DC-500 DC-1000 DC-900	5.36 6.44 5.27	.08 .10 .09	7.0 8.0 8.0	8.0 9.5 9.8	58 58 58	45 40 35	44 39 38	25 20 20	30 22 25	20 16 18	55 52 56	40 30 30	40 30 38	25 17 14	28 18 17	17 11 6	— — —	QQQ569 QQQ569 QQQ569	w w w	7.95 8.95 14.95		
◆ LRMS-20J ◆ LRMS-25J	1500-2000 750-2500	DC-500 DC-600	5.0 5.2	.15 .15	— —	7.5 9.5	35 35	(Typ.) (Typ.)	22 17	(Min.) (Min.)				26 20	(Typ.) (Typ.)	18 7	(Min.) (Min.)				18 18	QQQ569 QQQ569	w w	6.95*** 7.95***
◆ MBA-15LH* ◆ MBA-18LH* ◆ MBA-25LH* ◆ MBA-35LH*	1200-2400 1600-3200 2200-3600 3000-4000	DC-600 DC-500 DC-500 DC-700	5.6 5.8 7.0 4.8	0.1 0.1 0.1 0.1	— — — —	8.5 8.5 9.2 8.5	26 30 32 26	(Typ.) (Typ.) (Typ.) (Typ.)	17 17 21 18	(Min.) (Min.) (Min.) (Min.)				22 22 20 13	(Typ.) (Typ.) (Typ.) (Typ.)	10 10 10 7	(Min.) (Min.) (Min.) (Min.)				15 12 12 10	SM2 SM2 SM2 SM2	ld ld ld ld	6.95*** 6.95*** 6.95*** 6.95***

L = low range [f_L to 10 f_L]

M = mid range [10 f_L to $f_U/2$]
m = mid band [$2f_L$ to $f_U/2$]

U = upper range [$f_U/2$ to f_U]

NOTES:

- ⌘ Average of conversion loss at center of mid-band frequency ($f_L + f_U/4$)
- σ Standard deviation
- ◆ Aqueous washable. For non-aqueous requirements, LRMS units available in case style QQQ130.
- † Phase detection, positive polarity.
- ‡ Conversion loss increases up to 6 dB higher as IF frequency decreases from 5 MHz to DC.
- ☆ L=50-100 MHz, M=100-500 MHz
- * BLUE CELL™ mixers protected by U.S. Patents 5,534,830 5,640,132 5,640,134 5,640,699
- ** Protected under U.S. Patent 6133525
- *** Price for quantities 10-49
- A. Environmental specifications and re-flow soldering information available in General Information Section.
- B. Units are non-hermetic unless otherwise noted. For details on case dimensions & finishes see "Case Styles & Outline Drawings".
- C. Prices and Specifications subject to change without notice.
- 1. Absolute maximum power, voltage and current ratings:
 - 1a. RF power 50mW
 - 1b. Peak IF current, 40mA



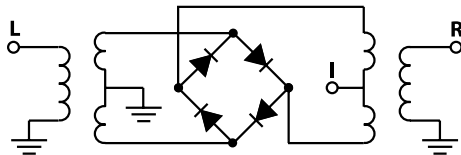


MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB						LO-IF ISOLATION, dB						IP3@ center band Typ. (dBm)	CASE STYLE	CONNECTION	PRICE \$
	LO/RF f _L -f _U	IF	Mid-Band			Total Range Max.	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.	Qty. (1-9)						
			- x	m σ	Max.																	
RMS-1LH	2-500	DC-500	5.36	.08	7.0	8.0	58	45	44	25	30	20	55	40	40	25	28	17	—	TT240	w	7.95
RMS-2LH	5-1000	DC-1000	6.44	.10	8.0	9.5	58	40	39	20	22	16	52	30	30	17	18	11	—	TT100	w	8.95
RMS-5LH	10-1500	DC-900	5.27	.09	8.0	9.8	58	35	38	20	25	18	56	30	38	14	17	6	—	TT240	w	14.95
SCM-2500LH	500-2500	DC-500	5.6	.20	6.8	10.0	35 (Typ.)			20 (Min.)			18 (Typ.)			10 (Min.)			—	YY101	r	13.95
SKY-53LHR	2800-5300	DC-500	5.7	.20	—	9.5	28 (typ.)			15 (min.)			12 (typ.)			8 (min.)			14	BJ398	hp	16.95
SKY-60LH	2500-6000	DC-1500	6.2	.20	—	9.7	28 (typ.)			17 (min.)			14 (typ.)			8 (min.)			15	BJ398	je	16.95
SYM-11LH SYM-25DLHW SYM-30LH	1-2000	10-600	7.0	.10	8.3	9.85	60	40	45	25	37	25	59	40	33	20	25	20	—	TTT167	x	11.95
	40-2500	DC-1000‡	6.3	.10	7.5	8.8	48	28	40	25	38	22	36	25	33	25	39	21	22	TTT167	x	7.95***
	800-3000	1-300	6.5	.25	—	8.8	—			35			20			—			21	TTT167	x	11.95
TUF-1LHSM	2-600	DC-600	6.0	.17	7.0	8.0	70	50	50	30	42	25	65	45	50	30	41	22	—	NNN150	z	7.25
TUF-2LHSM☆	50-1000	DC-1000	5.2	.30	7.0	8.5	58	40	44	30	39	25	60	35	50	25	38	20	—	NNN150	z	8.20
TUF-3LHSM	0.15-400	DC-400	4.8	.37	7.0	8.0	67	50	51	30	40	25	67	40	45	25	34	20	—	NNN150	z	9.10
TUF-5LHSM	20-1500	DC-1000	6.9	.27	8.5	9.0	53	40	42	30	38	25	40	25	30	18	22	8	—	NNN150	z	12.45
TUF-11ALHSM	1400-1900	40-500	7.0	.20	8.6	8.6	36 (Typ.)			20 (Min.)			28 (Typ.)			15 (Min.)			—	NNN150	z	19.95

L = low range [f_L to $10 f_L$]

M = mid range [$10 f_L$ to $f_U/2$]
m = mid band [$2f_L$ to $f_U/2$]

U = upper range [$f_U/2$ to f_U]



pin and coaxial connections see case style outline drawings for pin locations

PORT	r	w	x	z	ht ¹	hp	je	ld
LO	1	1	2	4	6	5	1	10
RF	8	4	1	1	3	1	5	5
IF	3	5	3	2	2	7	7	3
GND EXT.	2,4,5,6,7	2,3,6	4,5,6	3	1,4,5	2,3,4,6,8	2,3,4,6,8	1,2,4,6,7,8,9
CASE GND	—	—	—	3	—	—	—	—
NOT USED	—	—	—	—	—	—	—	—
DEMO BOARD	—	TB-03	TB-12	—	TB-03	TB-11	TB-11	TB-99

¹ pin connection physically same as w



The Design Engineers Search Engine
Provides Actual Data Instantly
At: <http://www.minicircuits.com>

In Stock... Immediate Delivery
For Custom Versions Of Standard Models
Consult Our Applications Dept.

