

FREQUENCY MIXERS

Surface Mount

LEVEL 10 500 kHz to 8 GHz



ADE



†JMS



†LRMS-J

BLUE CELL™



MCA1



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)	E factor	CASE STYLE	CONNECTION	PCB Lay-out PL-	PRICE \$ ea. Qty (1-9)
	LO/RF f _L -f _U	IF	Mid-Band		Total Range Max.	Max.	L Typ. Min.	M Typ. Min.	U Typ. Min.	L Typ. Min.	M Typ. Min.	U Typ. Min.												
			$\bar{x}$	σ																				
JMS-1LH	2-500	DC-500	5.75	0.1	7.0	8.0	67	50	55	30	42	25	50	40	45	25	32	20	21	1.1	BH292	ht	052	8.45
JMS-2LH	20-1000	DC-1000	6.5	0.1	7.5	9.0	60	40	48	25	37	20	45	30	35	20	27	11	20	1.0	BH292	ht	052	9.45
LRMS-20J	1500-2000	DC-500	5.0	.15	—	7.5	35 (Typ.)	22 (Min.)					26 (Typ.)	18 (Min.)					18	0.8	QQQ569	w	083	6.95
LRMS-25J	750-2500	DC-600	5.2	.15	—	9.5	35 (Typ.)	17 (Min.)					20 (Typ.)	7 (Min.)					18	0.8	QQQ569	w	083	7.95
MBA-15LH*	1200-2400	DC-600	5.6	0.1	—	8.5	26 (Typ.)	17 (Min.)					22 (Typ.)	10 (Min.)					15	0.5	SM2	ld	066	6.95
MBA-18LH*	1600-3200	DC-500	5.8	0.1	—	8.5	30 (Typ.)	17 (Min.)					22 (Typ.)	10 (Min.)					12	0.2	SM2	ld	066	6.95
MBA-25LH*	2200-3600	DC-500	7.0	0.1	—	9.2	32 (Typ.)	21 (Min.)					20 (Typ.)	10 (Min.)					12	0.2	SM2	ld	066	6.95
ADE-1LH**	0.5-500	DC-500	5.0	0.1	6.5	8.2	65	50	55	35	47	26	52	40	45	22	34	20	15	0.5	CD636	ht	052	Qty. (10-49) 8.45
MCA1-24LH*	300-2400	DC-700	6.5	0.1	—	8.9		40	25					22	12				13	0.3	DZ885	ld	045	6.45
MCA1-42LH*	1000-4200	DC-1500	6.0	0.1	—	8.9		38	23					20	11				12	0.2	DZ885	ld	045	7.45
MCA1-60LH*	1700-4400	DC-2000	6.6	0.1	—	7.9*		35	23					17	—				13	0.3	DZ885	ld	045	8.45
	4400-6000	DC-2000	6.0	0.1	—	8.3*		27	20					21	—				11	0.1				
MCA1-80LH*	2800-8000	DC-1250																						
	2800-5000	DC-1250	6.0	0.2	—	8.4*		35	25					13	8				15	0.5	DZ885	ld	045	9.95
	5000-8000	DC-1250	5.7	0.2	—	8.2*		35	20					40	19				12	0.2				

E= [IP3(dBm)-LO Power(dBm)]/10

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:

- x 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.
- † Models noted have positive phase detection. Phase detection negative for all other models.
- ‡ Conversion loss increases up to 6 dB higher as IF frequency decreases from 5 MHz to DC.
- * Conversion loss at 30 MHz IF, increases with IF frequency.
- ☆ L=50-100 MHz, M=100-500 MHz
- * BLUE CELL™ mixers protected by U.S. Patent 5,534,830
- ** 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

NSN GUIDE

MCL NO.
RMS-1LH

NSN
5895-01-453-9218



+10 dBm LO, up to +5 dBm RF

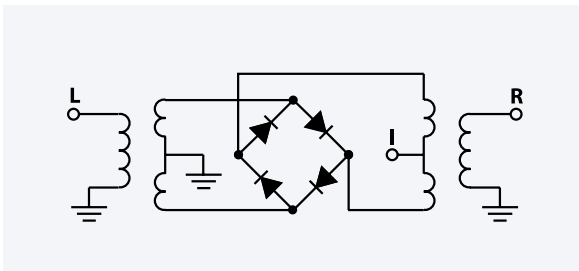
MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION dB						LO-IF ISOLATION dB						IP3@ center band Typ. (dBm)	E factor	CASE STYLE	CONNECTION	PCB Lay-out PL	PRICE \$ ea. Qty. (1-9)
	LO/RF f_L - f_U	IF	Mid-Band m σ	Max.	Total Range Max.		L Typ. Min.	M Typ. Min.	U Typ. Min.				L Typ. Min.	M Typ. Min.	U Typ. Min.									
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	15	0.5	TT240	w	052	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	18	0.8	TT100	w	052	8.95
SCM-2500LH	500-2500	DC-500	5.6	.20	6.8	10.0	35 (Typ.)	20 (Min.)					18 (Typ.)	10 (Min.)					16	0.6	YY101	r	130	13.95
SKY-53LHR	2800-5300	DC-500	5.7	.20	—	9.5	28 (typ.)	15 (min.)					12 (typ.)	8 (min.)					14	0.4	BJ398	hp	056	16.95
SKY-60LH	2500-6000	DC-1500	6.2	.20	—	9.7	28 (typ.)	17 (min.)					14 (typ.)	8 (min.)					15	0.5	BJ398	je	056	16.95
SYM-11LH	1-2000	10-600	7.0	.10	8.3	9.85	60	40	45	25	37	25	59	40	33	20	25	20	14	0.4	TTT167	x	079	11.95
SYM-25DLHW	40-2500	DC-1000	6.3	.10	7.5	8.8	48	28	40	25	38	22	36	25	33	25	39	21	22	1.2	TTT167	x	079	7.95***
SYM-30DLHW	5-3000	5-1500	6.5	.15	8.4	9.2	36	28	27	29	33	23	41	32	45	37	47	31	19	0.9	TTT167	x	079	8.95***
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	17	0.7	NNN150	z	081	9.50
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	14	0.4	NNN150	z	081	14.70

E= [IP3(dBm)-LO Power(dBm)]/10

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]



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-171	TB-03(RMS) TB-44(LRMS-J)	TB-12	TB-201	TB-03	TB-11	TB-11	TB-99 (MBA) TB-144 (MCA1)

¹ pin connection physically same as w