

FREQUENCY MIXERS

Surface Mount

LEVEL 13 150 kHz to 8 GHz



ADE



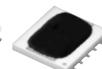
† JMS



† LRMS-J



MBA



MCA1

+13 dBm LO, up to +9 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. (10-49)			
	LO/RF f_L-f_U	IF	Mid-Band \bar{x}	m σ	Max.	Total Range Max.	L Typ.	M Typ.	U Typ.	L Min.	M Min.	U Min.	L Typ.	M Typ.	U Typ.	L Min.	M Min.	U Min.									
◆ ADE-1MH**	2-500	DC-500	5.2	0.10	6.5	8.0	60	45	50	35	48	25	55	40	45	30	40	22	17	0.4	CD542	ht	052	5.95			
◆ ADE-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	17	0.4	CD636	ht	052	6.45			
◆ ADE-10MH**	800-1000	10-200	7.0	0.2	—	8.5	34 (Typ.) 20 (Min.)						29 (Typ.) 20 (Min.)						26	1.3	CD636	ht	052	6.95			
◆ ADE-12MH**	10-1200	DC-1200	6.3	0.10	8.0	8.5	62	45	45	32	40	26	68	40	42	27	30	20	22	0.9	CD542	ht	052	6.45			
◆ ADE-25MH**	5-2500	5-1500	6.9	.10	8.5	9.8	47	28	34	23	34	23	34	23	32	20	23	17	18	0.5	CD542	ht	052	6.95			
◆ ADE-35MH**	5-3500	5-2500	6.9	.10	9.3	10.5	47	28	33	23	38	18	34	23	28	18	23	17	18	0.5	CD542	ht	052	9.95			
◆ ADE-42MH**	5-4200	5-3500	7.5	.20	9.8	11.8	47	28	29	20	30	15	34	23	26	17	23	17	17	0.4	CD542	ht	052	14.95			
JMS-1MH	2-500	DC-500	5.75	.10	7.0	8.0	70	55	60	40	44	25	55	42	45	25	35	20	22	0.9	BH292	ht	052	9.45			
JMS-2MH	20-1000	DC-1000	7.0	.15	8.4	9.5	63	40	50	28	35	20	56	30	47	22	37	20	22	0.9	BH292	ht	052	10.45			
JMS-5MH	5-1500	DC-1000	5.7	.10	8.0	9.5	67	40	57	25	35	20	60	40	35	18	15	8	19	0.6	BH292	ht	052	11.95			
◆ LRMS-1MHJ	2-500	DC-500	5.65	.08	7.0	8.0	58	45	44	25	30	20	55	40	36	25	28	17	23	1.0	QQQ569	w	083	8.95			
◆ MBA-15MH*	1400-2400	DC-600	5.5	0.1	—	8.5	28 (Typ.) 16 (Min.)						16 (Typ.) 8 (Min.)						18	0.5	SM2	ld	066	7.95			
◆ MBA-25MH*	2000-3000	DC-500	6.5	0.1	—	8.6	36 (Typ.) 18 (Min.)						20 (Typ.) 7 (Min.)						16	0.3	SM2	ld	066	7.95			
MCA1-24MH*	300-2400	DC-700	6.1	0.1	—	8.9	40 20						25 14						13	0	DZ885	ld	045	6.95			
MCA1-42MH*	1000-4200	DC-1500	6.2	0.1	—	8.9	32 20						20 10						16	0.3	DZ885	ld	045	7.95			
MCA1-60MH*	1600-4400	DC-2000	6.9	0.1	—	8.5*	32 25						17 —						15	0.2	DZ885	ld	045	8.95			
	4400-6000	DC-2000	6.0	0.1	—	8.5*	22 18						15 —						15	0.2							
NEW◆MCA1-80MH*	2800-8000	DC-1250					27 20						12 7						19	0.6	DZ885	ld	045	10.95			
	2800-5000	DC-1250	5.5	0.2	—	8.2*	27 17						35 13						18	0.5							
	5000-8000	DC-1250	5.7	0.2	—	8.7*																					

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

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

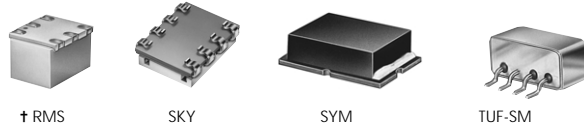
M = mid range [$10 f_L$ to $f_U/2$]

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

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

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.
- Non-hermetic
- † 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.
- ⊕ Frequency Specified RMS-42MH m=1000 - 2000 MHz, L=800 - 2100 MHz, U=2100 - 4200 MHz; TUF-2MHSM 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
- *** Prices 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 200mW; 1b. Peak IF current, 40mA



+13 dBm LO, up to +9 dBm RF

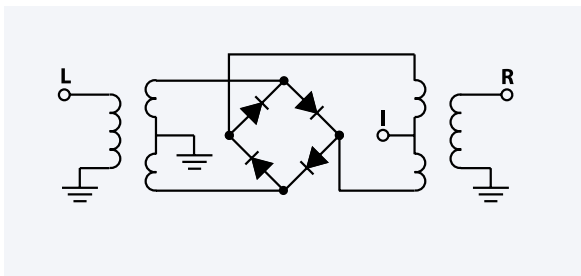
MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION dB						LO-IF ISOLATION dB						IP3@ center band Typ. (dBm)	E factor	CASE STYLE	CONNECTION	PCB Lay-out PL	PRICE \$ ea. Qty. (1-9)
	LO/RF f_L-f_U	IF	Mid-Band \bar{x} m σ Max.	Total Range Max.	L Typ. Min.	M Typ. Min.	U Typ. Min.	L Typ. Min.	M Typ. Min.	U Typ. Min.	L Typ. Min.	M Typ. Min.	U Typ. Min.											
RMS-1MH	2-500	DC-500	5.65	.08	7.0	8.0	58	45	44	25	30	20	55	40	36	25	28	17	26	1.3	TT240	w	052	8.95
RMS-2MH	5-1000	DC-1000	6.72	.08	8.5	9.5	55	40	39	20	22	16	52	35	30	17	18	12	22	0.9	TT100	w	052	9.95
RMS-5MH	10-1500	DC-900	5.67	.09	9.0	9.5	58	40	40	20	26	18	50	30	38	18	17	8	17	0.4	TT240	w	052	15.95
RMS-25MH	5-2500	5-1500	7.0	.20	8.5	9.8	54	28	32	23	32	20	34	23	32	25	28	17	17	0.4	TT240	w	052	9.95
RMS-42MH	800-4200	DC-800	5.3	.20	9.0	10.8	35	25	—	—	28	17	18	10	—	—	15	7	19	0.6	TT240	w	052	24.95
SKY-53MHR	2800-5300	DC-500	5.7	.20	—	9.5	28 (Typ.) 15 (Min.)			12 (Typ.) 8 (Min.)			19	0.6	BJ398	hp	056	17.95						
SKY-60MH	2500-6000	DC-1500	6.2	.20	—	9.5	28 (Typ.) 17 (Min.)			14 (Typ.) 8 (Min.)			19	0.6	BJ398	je	056	17.95						
SYM-25DMHW	40-2500	DC-1000†	6.6	.10	8.0	9.0	47	32	37	27	35	22	38	28	35	25	38	20	26	1.3	TTT167	x	079	8.95***
NEW SYM-30DMHW	5-3000	5-1500	6.5	.10	8.4	9.3	36	25	39	30	34	23	41	27	42	33	45	30	22	0.9	TTT167	x	079	9.95***
TUF-2MHSM	50-1000	DC-1000	6.0	.25	7.5	9.0	58	40	47	30	37	25	55	35	47	20	32	18	19	0.6	NNN150	z	081	11.45
TUF-3MHSM	0.15-400	DC-400	5.0	.33	7.0	8.0	60	50	46	30	35	25	60	40	42	25	35	20	18	0.5	NNN150	z	081	12.45

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

PORT	w	x	z	hp	ht	je	jy	lc	ld	lp	lq
LO	1	2	4	5	6	1	1	10	10	3	3
RF	4	1	1	1	3	5	6	5	5	1	2
IF	5	3	2	7	2	7	10	3	3	2	1
GND EXT.	2,3,6	4,5,6	3	2,3,4,6,8	1,4,5	2,3,4,6,8	all others	1,4,7,8,9	1,2,4,6,7,8,9	4,5,6	4,5,6
ISOLATE	—	—	—	—	—	—	—	2,6	—	—	—
DEMO BOARD	TB-03(RMS) TB-44(LRMS-J)	TB-12	TB-201	TB-11	TB-03	TB-11	TB-168	TB-117	TB-99 (MBA) TB-144 (MCA1)	TB-12	TB-12