

FREQUENCY MIXERS

Surface Mount

LEVEL 13 150 kHz to 6 GHz



ADE



ALY



† 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 f a c t o r	CASE STYLE	CONNECTION	PCB Lay-out PL-	PRICE \$ Qty. (10-49)	
	LO/Rf f _L -f _U	IF	Mid-Band			Total Range Max.	L Typ. Min.	M Typ. Min.	U Typ. Min.	L Typ. Min.	M Typ. Min.	U Typ. Min.													
			$\bar{x}$	σ	Max.																				
◆ ADE-1MH**	2-500	DC-500	5.2	.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	.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	.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	
◆ 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	
NEW MCA1-24MH*	300-2400	DC-700	6.1	0.1	8.9		40 20						25 14						13	0	DZ885	ld	045	6.95	
NEW MCA1-42MH*	1000-4200	DC-1500	6.2	0.1	8.9		32 20						20 10						16	0.3	DZ885	ld	045	7.95	
NEW 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					
◆ ALY-44MH	2400-4400	DC-1400	7.5	.20	—	8.9	30 (Typ.) 20 (Min.)						20 (Typ.) 10 (Min.)						13	0	CB518	jy	085	18.95	
◆ ALY-44MHW	1800-4900	DC-1400	7.5	.20	—	9.2	30 (Typ.) 20 (Min.)						14 (Typ.) 8 (Min.)						13	0	CB518	jy	085	19.95	
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	
◆ LRMS-2MHJ	5-1000	DC-1000	6.72	.08	8.5	9.5	55	40	39	20	22	16	52	35	30	17	18	12	20	0.7	QQQ569	w	083	9.95	
◆ LRMS-2UMHJ	10-1000	20-500	7.0	.10	8.5	9.5	52	40	43	30	33	25	53	30	44	25	39	22	14	0.1	QQQ569	w	083	14.45	
◆ LRMS-5MHJ	10-1500	DC-900	5.67	.09	9.0	9.5	58	40	40	20	26	18	50	30	38	18	17	8	20	0.7	QQQ569	w	083	15.95	

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 [$2 f_L$ 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.
- Non-hermetic
- † Phase detection, positive polarity
- ‡ Conversion loss increases up to 6 dB higher as IF frequency decreases from 5 MHz to DC.
- ⊕ 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. Patents 5,534,830 5,640,132 5,640,134 5,640,699
- ** 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

NSN GUIDE

MCL NO.	NSN
ROK-186MH	5895-01-392-2276
SRA-1MH	5895-01-391-0113
TFM-3MH	5895-01-302-7047
TFM-42MH	5895-01-408-6093



Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

ISO 9001 CERTIFIED



+13 dBm LO, up to +9 dBm RF

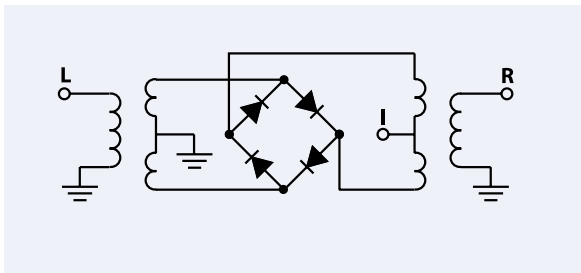
◆ MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION dB						LO-IF ISOLATION dB						IP3@ center band Typ. (dBm)	E f a c t o r	CASE STYLE	CON N E C T I O N	PCB Lay- out PL	PRICE \$ Qty. (10-49)
	LO/RF f _L -f _U	IF	Mid-Band			Total Range Max.	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.									
			m σ	Max.	Max.																			
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
	5-2500	5-2200	7.0	0.1	8.5	9.8	54	28	32	23	32	20	34	23	32	25	28	17	17	0.4	TT240	w	052	7.95
	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	je	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	hp	je	17.95
SYM-11MH	50-2000	50-1000	6.6	.10	8.0	9.9	55	35	44	25	30	20	40	25	36	20	29	20	18	0.5	TTT167	x	—	15.95
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	—	8.95***
SYM-1020MH	1000-2000	DC-800	6.5	.55	—	9.8	32 (Typ.)			20 (Min.)			20 (Typ.)			10 (Min.)			18	0.5	TTT167	lq	lp	9.95
SYM-8022MH	800-2200	DC-800	7.6	0.3	—	9.8	26 (Typ.)			18 (Min.)			20 (Typ.)			9 (Min.)			18	0.5	TTT167	lp	lp	11.95
TUF-1MHSM	2-600	DC-600	6.3	.12	7.0	8.0	68	50	50	30	43	25	65	45	48	30	37	22	15	0.2	NNN150	z	—	8.25
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	—	9.20
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	—	10.20
TUF-5MHSM	20-1500	DC-1000	7.0	.25	8.5	9.0	50	40	41	30	35	25	38	25	28	18	20	8	16	0.3	NNN150	z	—	13.45
TUF-11AMHSM	1400-1900	40-500	7.4	.20	8.6	8.6	33 (Typ.)			20 (Min.)			24 (Typ.)			15 (Min.)			12	-0.1	NNN150	z	—	21.95
TUF-2500MHSM	400-2500	30-800	7.3	.15	8.5	10.0	32 (Typ.)			24 (Min.)			27 (Typ.)			17 (Min.)			18	0.5	NNN150	z	—	21.95

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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	TB-12	—	TB-11	TB-03	TB-11	—	TB-117	TB-99 (MBA) TB-144 (MCA1)	—	—



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