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 LO/RF f_L-f_U	IF	CONVERSION LOSS dB Mid-Band $\bar{x}$	m σ	Max.	Total Range Max.	LO-RF ISOLATION dB L Typ.	L Min.	M Typ.	M Min.	U Typ.	U Min.	LO-IF ISOLATION dB L Typ.	L Min.	M Typ.	M Min.	U Typ.	U Min.	IP3@ center band Typ. (dBm)	E factor	CASE STYLE	CONNECTION	PCB Lay-out PL-	PRICE $ Qty. (10-49)
◆ 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																						
	2800-5000	DC-1250	5.5	0.2	—	8.2•			27	20					12	7			19	0.6	DZ885	ld	045	10.95
	5000-8000	DC-1250	5.7	0.2	—	8.7•			27	17					35	13			18	0.5				

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:

$\bar{x}$ 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.
❑ 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. 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

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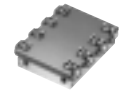
† RMS


SKY


SYM


TUF-SM

+13 dBm LO, up to +9 dBm RF

MODEL NO.	FREQUENCY MHz LO/RF f_L-f_U	IF	CONVERSION LOSS dB Mid-Band m $\bar{x}$	σ	Max.	Total Range Max.	LO-RF ISOLATION dB L Typ.	L Min.	M Typ.	M Min.	U Typ.	U Min.	LO-IF ISOLATION dB L Typ.	L Min.	M Typ.	M Min.	U Typ.	U Min.	IP3@ center band Typ. (dBm)	E factor	CASE STYLE	CONNECTION	PCB Lay-out PL-	PRICE $ Qty. (1-9)
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	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	081	10.20

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

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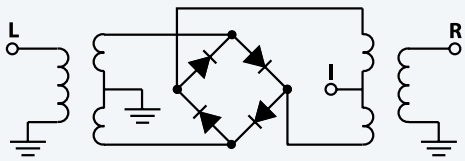
M = mid range [10 f_L to f_U/2]
m = mid band [2f_L to f_U/2]

U = upper range [f_U/2 to f_U]



pin and coaxial connections see case style outline drawings

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-201	TB-11	TB-03	TB-11	TB-168	TB-117	TB-99 (MBA) TB-144 (MCA1)	TB-12	TB-12

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