

FREQUENCY MIXERS

Surface Mount

LEVEL 13 150 kHz to 6 GHz



ADE



ALY



† JMS



† LRMS-J



MBA

+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)	CASE STYLE	CONNECTION	PRICE \$																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		LO/RF f _L -f _U	IF	Mid-Band x σ ^m Max.	Total Range Max.	L Typ. Min.	M Typ. Min.	U Typ. Min.	L Typ. Min.	M Typ. Min.	U Typ. Min.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
NEW	◆ 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	CD542	ht	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	CD636	ht	6.45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	◆ ADE-10MH**	800-1000	10-200	7.0	0.2	—	8.5	34 (Typ.)			20 (Min.)			29 (Typ.)			20 (Min.)			26	CD636	ht	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	CD542	ht	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	CD542	ht	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	CD542	ht	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	CD542	ht	14.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	◆ MBA-9MH*	800-1000	DC-200	6.7	0.1	—	9.0	25 (Typ.)		20 (Min.)				18 (Typ.)		12 (Min.)				15	SM2	lc	7.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	◆ MBA-12MH*	800-2500	DC-500	7.5	0.1	—	9.5	30 (Typ.)		20 (Min.)				15 (Typ.)		7 (Min.)				15	SM2	lc	7.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	◆ MBA-15MH*	1400-2400	DC-600	5.5	0.1	—	8.5	28 (Typ.)		16 (Min.)				16 (Typ.)		8 (Min.)				18	SM2	ld	7.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	◆ MBA-18MH*	1600-3200	DC-650	5.5	0.1	—	8.0	35 (Typ.)		18 (Min.)				18 (Typ.)		10 (Min.)				16	SM2	ld	7.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	◆ MBA-25MH*	2000-3000	DC-500	6.5	0.1	—	8.6	36 (Typ.)		18 (Min.)				20 (Typ.)		7 (Min.)				16	SM2	ld	7.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	◆ MBA-35MH*	3000-4000	DC-700	5.1	0.1	—	8.7	22 (Typ.)		15 (Min.)				14 (Typ.)		8 (Min.)				15	SM2	ld	7.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

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



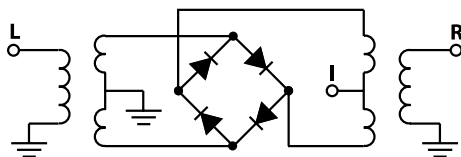
+13 dBm LO, up to +9 dBm RF

MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB						LO-IF ISOLATION, dB						IP3@ center band Typ. (dBm)	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.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.					Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Qty. (1-9)	
NEW RMS-25MH RMS-25MHW RMS-42MH	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	—	TT240	w	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	—	TT100	w	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	—	TT240	w	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	—	TT240	w	9.95					
	RMS-25MHW	5-2500	5-2200	7.0	0.1	8.5	9.8	54	28	32	23	32	20	34	23	32	25	28	17	—	TT240	w	7.95					
	RMS-42MH	800-4200	DC-800	5.3	.20	9.0	10.8	35	25	—	—	28	17	18	10	—	—	15	7	—	TT240	w	24.95					
	SKY-53MHR	2800-5300	DC-500	5.7	.20	—	9.5	28 (Typ.)	15 (Min.)					12 (Typ.)	8 (Min.)					19	BJ398	hp	17.95					
	SKY-60MH	2500-6000	DC-1500	6.2	.20	—	9.5	28 (Typ.)	17 (Min.)					14 (Typ.)	8 (Min.)					19	BJ398	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	—	TTT167	x	15.95					
TUF-1MHSM TUF-2MHSM TUF-3MHSM TUF-5MHSM TUF-11AMHSM TUF-2500MHSM	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	TTT167	x	8.95***					
	SYM-1020MH	1000-2000	DC-800	6.5	.55	—	9.8	32 (Typ.)	20 (Min.)					20 (Typ.)	10 (Min.)					18	TTT167	lq	9.95					
	SYM-8022MH	800-2200	DC-800	7.6	0.3	—	9.8	26 (Typ.)	18 (Min.)					20 (Typ.)	9 (Min.)					18	TTT167	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	—	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	—	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	—	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	—	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.)					—	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.)					—	NNN150	z	26.95					

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

PORT	w	x	z	hp	ht	je	jv	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	—	—



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

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