

# FREQUENCY MIXERS

Surface Mount

## LEVEL 7 50 kHz to 6.7 GHz



ADE

+7 dBm LO, up to +1 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	$\bar{x}$	m	$\sigma$	Max.	Total Range Max.	L		M		U		L		M		U				
ADE-1**	0.5-500	DC-500	5.0	.10	6.5	7.8	70	50	55	35	45	30	65	45	40	25	30	20	15	CD636	ht	1.99*
† ADE-1ASK**	2-600	DC-600	5.3	.10	6.5	7.5	55	45	50	30	40	25	50	40	45	24	35	18	16	CD542	ht	3.95
† ADE-2ASK**	1-1000	DC-1000	5.4	.10	6.8	9.5	55	45	45	30	36	20	50	40	32	22	22	12	12	CD542	ht	4.25
† ADE-3G**	2300-2700	DC-400	5.6	.10	—	7.0	36 (typ.)		25 (min.)		—		26 (typ.)		17 (min.)		—		13	CD542	ht	3.45
ADE-3GL**	2100-2600	DC-600	6.0	.25	—	8.8	34 (typ.)		25 (min.)		—		20 (typ.)		7 (min.)		—		17	CD541	jw	4.95
☆ ADE-4**	200-1000	DC-800	6.8	0.1	8.5	8.5	60	45	53	40	45	30	45	30	40	22	35	20	15	CD542	ht	4.25
† ADE-5**	5-1500	DC-1000	6.6	.10	7.5	9.3	50	40	40	25	33	23	50	40	30	20	20	10	15	CD542	ht	3.45
ADE-6**	0.05-250	DC-200	4.6	.05	7.0	8.4	62	49	40	30	40	20	58	44	45	24	25	15	10	CD637	ht	4.95
NEW ADE-11X**	10-2000	5-1000	7.1	0.1	8.2	9.8	62	45	36	20	27	18	60	45	37	20	38	20	9	CD542	nd	1.99*
ADE-12**	50-1000	DC-1000	7.0	.15	8.0	9.0	40	25	—	—	33	22	44	26	—	—	37	20	17	CD541	jv	2.95
ADE-13**	50-1600	50-1000	8.1	.10	9.0	9.8	50	25	40	25	33	20	49	30	35	20	32	20	11	CD541	ju	3.10
ADE-14**	800-1000	DC-200	7.4	.20	—	8.9	32 (typ.)		22 (min.)		—		34 (typ.)		20 (min.)		—		17	CD541	jv	3.25
ADE-18**	1700-2500	DC-600	4.9	.20	—	7.3	27 (typ.)		22 (min.)		—		10 (typ.)		7 (min.)		—		10	CD542	jw	3.45
ADE-18W**	1750-3500	DC-700	5.4	.30	8.9	8.9	33 (typ.)		20 (min.)		—		12 (typ.)		7 (min.)		—		11	CD542	jw	3.95
ADE-20**	1500-2000	DC-300	5.4	.10	—	7.8	31 (typ.)		22 (min.)		—		28 (typ.)		20 (min.)		—		14	CD542	jv	4.95
ADE-28**	1500-2800	DC-1000	5.1	.25	—	8.2	30 (typ.)		21 (min.)		—		27 (typ.)		17 (min.)		—		8	CD542	jv	5.95
ADE-30**	200-3000	DC-1000	4.5	.20	9.0	9.8	35 (typ.)		20 (min.)		—		20 (typ.)		7 (min.)		—		14	CD542	ht	6.95
ADE-30W**	300-4000	DC-950	6.8	.20	9.0	9.8	35 (typ.)		17 (min.)		—		16 (typ.)		7 (min.)		—		12	CD542	ht	8.95
ADE-32**	2500-3200	DC-1200	5.4	0.2	—	9.4	29 (typ.)		20 (min.)		—		30 (typ.)		20 (min.)		—		15	CD542	jv	6.95
† ADE-35**	1600-3500	DC-1500	6.3	.50	—	9.8	25 (typ.)		16 (min.)		—		22 (typ.)		12 (min.)		—		11	CD542	jv	4.95
ADE-901**	800-1000	DC-200	5.9	.10	—	7.3	32 (typ.)		22 (min.)		—		26 (typ.)		18 (min.)		—		13	CD542	jv	2.95

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  $f_U$ ]

### features

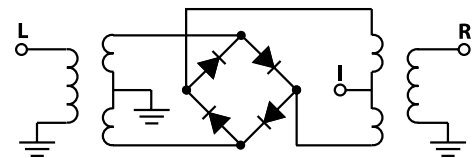
- low conversion loss, down to 4.9 dB typ.
- excellent isolation, up to 55 dB typ.
- IP3, up to 17 dBm typ.
- ultra low profile package (patent pending)
- solder plated leads for excellent solderability
- waterwash compatibility
- low cost

### applications

- cellular
- PCN
- ISM
- instrumentation
- wireless/VSAT systems
- PCMCIA cards

### NOTES:

- ̄ Average of conversion loss at center of mid-band frequency ( $f_L+f_U/4$ )
- $\sigma$  Standard deviation
- ◆ Aqueous washable
- † Phase detection, positive polarity.
- ☆ L=200-400 MHz M=400-500 MHz U=500-1000 MHz
- \* Quantity 100
- \* 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
- 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





+7 dBm LO, up to +1 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 \$ Qty. (10-49)
	LO/RF $f_L-f_U$	IF	Mid-Band $\bar{x}$	m	Total Range Max.	Typ.	Min.	Typ.	Min.				
MBA-9*	800-1000	DC-200	7.3	.20	9.0	22	20	17	12	10	SM2	lc	5.95
MBA-12*	800-2500	DC-500	7.5	.10	9.0	30	20	15	8	12	SM2	lc	5.95
MBA-26*	2200-2700	DC-500	5.7	.10	8.0	40	32	33	18	9	SM2	ld	5.95
MBA-591*	2800-5900	DC-1000	6.5	.10	9.0	36	20	26	17	10	SM2	le	6.95
MBA-671*	2400-6700	DC-1000	6.5	.10	9.2	36	20	26	17	10	SM2	le	8.95

BLUE CELL

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  $f_U$ ]

features

- excellent temperature stability
- performance repeatability
- solder plated leads with strain relief
- very low cost
- ultra low height, 0.07"



*Incorporates multi-layer monolithic ceramic substrates for moderate bandwidth and low cost RF/Microwave products*

applications

- cellular
- WLAN
- satellite communication
- ISM band
- PCMCIA
- PCN/PCS/ wideband CDMA
- VSAT systems

pin connections

see case style outline drawings

PORT	ju	jv	jw	ht	lc	ld	le	nd
LO	6	6	4	6	10	10	10	6
RF	3	4	6	3	5	5	6	2
IF	4	3	3	2	3	3	1	3
GND	1,2,5	1,2,5	1,2,5	1,4,5	1,4,7,8,9	all others	all others	1,4,5
ISOLATE	—	—	—	—	2,6	—	—	—
DEMO BOARD	TB-02	TB-02	TB-02	TB-03	—	—	—	—



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