

FREQUENCY MIXERS

Surface Mount

LEVEL 17 150 kHz to 6 GHz



JYM



SYM



TUF-SM

+17 dBm LO, up to +10 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	PRICE \$ Qty. (1-9)		
	LO/RF f _L -f _U	IF	Mid-Band		Total Range Max.	L	M	U	L	M	U												
			—	m								—	M	—	M	—						M	
			x	σ								Max.	Max.	Typ. Min.	Typ. Min.	Typ. Min.						Typ. Min.	Typ. Min.
JYM-20H	2-2000	4-700	5.7	.20	8.5	9.0	40	30	44	28	40	25	40	35	40	22	29	15	22	0.5	BJ293	hp	17.95
JYM-28H	400-2800	4-700	6.3	.20	8.0	9.0	40	30	40	25	30	25	30	25	30	20	22	15	23	0.6	BJ293	hp	21.95
JYM-30H	2-3000	4-1400	6.0	.20	8.9	10.6	40	30	40	25	30	25	40	35	30	20	22	15	24	0.7	BJ293	hp	23.95
SYM-11H	50-2000	50-1950	6.3	.10	7.5	9.0	45	35	40	25	37	25	40	25	32	20	30	20	25	0.8	TTT167	x	17.95

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

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

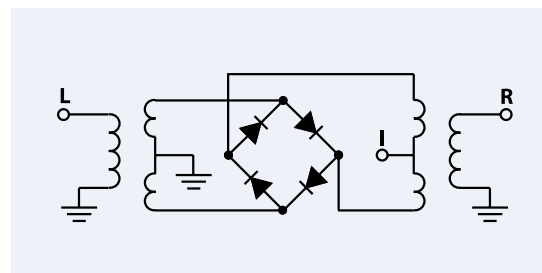
M = mid range [$10 f_L$ to $f_U/2$]

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 washable requirements, LRMS units available in case style QQQ130
- † Phase detection, positive polarity
- †† Conversion loss increases 0.5 dB when IF is above 150 MHz.
- * 15 dB min. over 1500-1800MHz
- ** 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



pin connections

see case style outline drawings

PORT	w	x	z	hp	ht ¹	je	jv	jw	ka	lc	lp
LO	1	2	4	5	6	1	6	4	11	10	3
RF	4	1	1	1	3	5	4	6	5	5	1
IF	5	3	2	7	2	7	3	3	2	3	2
GND EXT.	2,3,6	4,5,6	3	2,3,4,6,8	1,4,5	2,3,4,6,8	1,2,5	all other pins	1,4,7,8,9	4,5,6	—
CASE GND	—	—	3	—	—	—	—	—	—	—	—
ISOLATE	—	—	—	—	—	—	—	—	—	2,6	—
DEMO BOARD	TB-44	TB-12	—	TB-11	TB-03	TB-11	TB-02	TB-02	—	TB-117	TB-12

¹ pin connection physically same as w



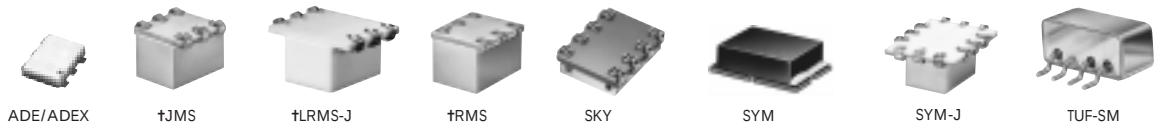
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ISO 9001 CERTIFIED



+17 dBm LO, up to +14 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	CON- NECTION	PCB Lay- out PL-	PRICE \$ 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.									
◆ ADE-1H**	0.5-500	DC-500	5.3	.10	6.8	8.0	65	50	52	35	40	26	53	40	42	25	32	20	23	0.6	CD636	ht	052	4.95***
◆ ADE-1HW**	5-750	DC-750	6.0	.10	7.2	8.8	64	45	48	35	42	28	50	35	40	30	30	18	26	0.9	CD542	ht	052	6.45***
◆ ADE-17H**	100-1700	50-1500	7.2	.10	8.5	9.5	32	20	—	—	36	22	32	20	—	—	37	22	25	0.8	CD542	ht	052	8.95***
◆ ADE-20H**	1500-2000	DC-300	5.2	.20	—	7.8	29 (Typ.)	22 (Min.)	—	—	—	—	31 (Typ.)	20 (Min.)	—	—	—	—	24	0.7	CD542	jv	051	8.95***
NEW◆ ADEX-10H**	10-1000	DC-800††	7.0	.10	8.5	9.5	68	55	55	40	47	31	46	30	32	20	26	13	22	0.5	CD542	ht	052	3.45***
JMS-1H	2-500	DC-500	5.90	.10	7.0	8.5	60	45	50	25	37	22	55	45	50	25	37	22	22	0.5	BH292	ht	052	11.45
JMS-2H	20-1000	DC-1000	7.00	.15	8.4	9.5	63	40	50	28	35	20	56	30	47	22	37	20	24	0.7	BH292	ht	052	12.45
JMS-5H	5-1500	DC-1000	5.90	.10	8.0	9.5	70	50	50	25	35	20	60	40	35	18	20	8	22	0.5	BH292	ht	052	12.95
◆ LRMS-1HJ	2-500	DC-500	6.25	.034	7.0	8.5	55	44	44	25	33	20	50	34	45	25	37	22	25	0.8	QQQ569	w	083	10.95
◆ LRMS-1WHJ	10-750	DC-750	7.00	.11	8.5	8.8	55	40	43	22	28	20	52	30	38	22	29	20	26	0.9	QQQ569	w	083	11.95
◆ LRMS-2HJ	5-1000	DC-900	6.98	.054	8.5	9.3	55	40	39	22	33	20	52	30	45	22	30	17	17	0	QQQ569	w	083	11.95
◆ LRMS-2UHJ	10-1000	10-750	7.10	.083	9.2	9.9	50	40	38	30	30	23	50	30	40	25	34	22	17	0	QQQ569	w	083	14.45
◆ LRMS-5HJ	10-1500	DC-900	6.36	.05	8.0	9.8	65	40	36	20	22	15	50	30	30	18	17	7	22	0.5	QQQ569	w	083	17.95
RMS-1H	2-500	DC-500	6.25	.034	7.0	8.5	55	44	44	25	33	20	50	34	45	25	37	22	22	0.5	TT240	w	052	10.95
RMS-1WH	10-750	DC-750	7.00	.11	8.5	8.8	55	40	43	22	28	20	52	30	38	22	29	20	25	0.8	TT240	w	052	11.95
RMS-2H	5-1000	DC-900	6.98	.054	8.5	9.3	55	40	39	22	33	20	52	30	45	22	30	17	23	0.6	TT240	w	052	11.95
RMS-5H	10-1500	DC-900	6.36	.05	8.0	9.8	65	40	36	20	22	15	50	30	30	18	17	7	24	0.7	TT240	w	052	17.95
SKY-53HR	2800-5300	DC-500	5.70	.20	—	9.5	28 (Typ.)	15 (Min.)	—	—	—	—	12 (Typ.)	8 (Min.)	—	—	—	—	20	0.3	BJ398	hp	—	18.95
SKY-60H	2500-6000	DC-1500	6.20	.20	—	9.7	28 (Typ.)	17 (Min.)	—	—	—	—	14 (Typ.)	8 (Min.)	—	—	—	—	23	0.6	BJ398	je	—	18.95
SYM-10DHW	50-1000	20-800	7.0	—	8.5	9.8	48 (Typ.)	30 (Min.)	—	—	—	—	29 (Typ.)	20 (Min.)	—	—	—	—	25	0.8	TTT167	x	—	16.95
SYM-25H	10-2400	1-1100	6.1	.10	8.5	9.2	38	20	40	20	30	18	54	40	40	22	33	20	25	0.8	TTT167	lp	—	21.95
SYM-36H	1500-3600	DC-600	6.3	.40	—	9.0	—	—	30	20	—	—	—	34	20d	—	—	—	25	0.8	TTT167	x	—	21.95
◆ SYM-10HJ	400-1000	DC-400	6.6	.10	—	8.0	46 (Typ.)	33 (Min.)	—	—	—	—	32 (Typ.)	18 (Min.)	—	—	—	—	25	0.8	CG581	ka	—	9.95***
TUF-1HSM	2-600	DC-600	5.90	.18	7.0	8.0	68	50	50	30	43	25	62	45	48	30	33	22	26	0.9	NNN150	z	—	10.20
TUF-2HSM	50-1000	DC-1000	6.20	.22	7.5	9.0	58	40	47	30	42	25	58	35	44	25	28	18	21	0.4	NNN150	z	—	11.20
TUF-3HSM	0.15-400	DC-400	5.00	.33	7.0	8.0	60	50	50	35	40	30	60	40	45	25	35	20	22	0.5	NNN150	z	—	12.45
TUF-5HSM	20-1500	DC-1000	7.50	.17	8.5	9.0	62	55	50	40	38	25	40	25	29	18	20	8	20	0.3	NNN150	z	—	15.45
TUF-11AHSM	1400-1900	40-500	7.30	.28	9.0	9.0	35 (Typ.)	25 (Min.)	—	—	—	—	30 (Typ.)	15 (Min.)	—	—	—	—	20	0.3	NNN150	z	—	23.95

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

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

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

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

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