

FREQUENCY MIXERS

Plug-In & Flatpack

LEVEL 7 500 Hz to 4.3 GHz



ASK-X65



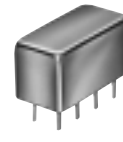
ASK-W38



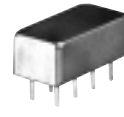
ROSE



SAM



SRA



SBL
SIMA

+7 dBm LO, up to +1 dBm RF

MODEL NO.		FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB						LO-IF ISOLATION, dB						CASE STYLE	CONNECTION	PRICE \$
		LO/RF f _L -f _U	IF	Mid-Band			Total Range	L			M			U			Note B					
				$\bar{x}$	σ	Max.		Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.		Min.	Qty. (1-9)			
□	ASK-1'	1-600	DC-600	5.58	.06	7.0	8.5	50	30	35	25	30	20	45	35	30	20	25	15	W38	w	6.95
†	ASK-2'	1-1000	DC-1000	6.79	.10	8.0	9.8	60	40	35	18	26	16	50	30	25	17	15	10	W38	w	8.25
	ROSE-1	1-600	DC-600	5.08	.03	6.5	7.5	40	30	35	25	30	20	55	40	40	20	25	18	PP94	ab	12.95
	ROSE-2	1-1000	DC-1000	5.60	.23	7.0	8.0	61	45	37	22	25	18	55	40	26	17	16	12	PP94	ab	18.95
	SAM-1	1-600	DC-600	5.67	.05	7.0	8.5	55	45	45	30	35	20	50	40	40	25	30	20	A03	e	18.95
	SAM-2	1-1000	DC-1000	5.68	.08	7.5	9.5	55	45	40	25	35	20	50	40	40	25	30	25	A03	f	22.45
	SAM-3	0.1-500	DC-500	5.04	.07	7.0	8.5	60	50	50	35	35	30	50	40	45	30	30	20	A03	e	21.95
	SRA-1	.5-500	DC-500	5.11	.09	7.0	8.5	50	45	45	30	35	25	45	35	40	25	30	20	A01	e	14.45
	SRA-1W	1-750	DC-750	5.80	.04	7.5	8.5	50	45	45	30	35	25	45	30	40	25	30	20	A01	f	17.95
	SRA-1-1	.1-500	DC-500	4.81	.11	7.5	8.5	50	45	45	30	35	25	45	30	40	25	30	20	A01	e	15.95
	SRA-2	1-1000	.5-500	5.66	.07	7.5	8.5	45	30	35	20	30	20	45	30	30	20	30	20	A01	j	17.95
	SRA-2CM	5-1000	DC-1000	5.27	.04	7.0	8.5	60	50	35	30	30	25	50	45	30	25	25	20	A01	f	15.95
	SRA-3	.025-200	DC-200	4.61	.06	7.5	8.5	60	50	45	35	35	25	45	35	40	30	30	20	A01	e	17.95
	SRA-5	5-1500	10-600	6.69	.07	8.0	8.5	50	45	35	30	30	20	45	40	30	25	25	15	A06	m	26.95
	SRA-6	.003-100	DC-100	4.58	.05	7.5	8.5	60	50	45	30	35	25	60	45	40	25	30	20	A01	d	26.95
	SRA-8	.0005-10	DC-10	5.69	.11	7.5	8.5	60	50	50	40	45	35	60	50	50	40	45	35	A01	d	31.95
	SRA-11	5-2000	10-600	6.72	.07	8.5	9.0	50	45	35	25	30	20	45	40	30	20	25	15	A06	m	22.95
	SRA-12	800-1250	50-90	6.21	.13	7.5	7.5	32	25	35	25	35	25	30	20	30	20	30	20	A06	m	31.95
	SRA-149***	5-500	DC-500	5.61	.07	6.5	8.0	60	50	55	45	53	40	50	40	35	25	30	24	A06	p	10.95
	SRA-2000	100-2000	DC-600	8.60	.15	9.5	9.5	37 (Typ.) 20 (Min.)						30 (Typ.) 20 (Min.)						A06	m	23.95
	SRA-2400	750-2400	DC-400	5.95	.26	9.0	9.0	30	20	30	20	30	20	30	8	30	8	30	8	A06	s	24.95
	SRA-3500**	500-3500	DC-1000	7.28	.31	9.5	9.5	30	17	30	17	30	17	20	8	20	8	20	8	A06	s	30.95
□	SBL-1	1-500	DC-500	5.60	.09	7.0	8.0	60	45	45	35	40	25	45	35	40	25	30	20	A06	d	5.75
□	SBL-1X	10-1000	5-500	5.88	.10	7.5	8.0	50	40	40	30	30	20	50	45	40	35	35	25	A06	j	7.45
□	SBL-1Z	10-1000	DC-500	6.27	.09	7.5	9.0	50	40	35	25	25	20	40	25	25	18	19	15	A06	s	8.45
□	SBL-1-1	0.1-400	DC-400	4.84	.04	7.0	8.0	50	45	45	30	35	25	45	30	40	25	30	20	A06	d	8.45
□	SBL-3	.025-200	DC-200	4.81	.05	7.5	8.5	55	50	45	30	35	25	45	35	40	30	30	20	A06	e	8.45
□	SBL-11	5-2000	10-600	7.08	.11	8.5	9.0	50	45	35	25	30	20	45	40	30	20	25	15	A06	m	21.95
	SIMA-5	2-1500	DC-1000	7.01	.08	8.0	9.0	65	44	44	23	31	22	54	38	30	18	25	11	A06	m	26.95

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:

- $\bar{x}$ Average of conversion loss at center of mid-band frequency ($f_L + f_U/4$)
- σ Standard deviation
- Non-hermetic
- † Phase detection, positive polarity
- ASK plug-in mounting case X65
- ** Below 10°C, f_L is 0.2 MHz.
- * Conversion loss 9.5 dB maximum from 0.01 to 0.015 MHz
- *** Conversion loss 10dB maximum at IF=1000 MHz
- *** Blue bead pin 4
- A. General Quality Control Procedures, Environmental Specifications, Hi-Rel and MIL description are given in section 0, see "Mini-Circuits Guarantees Quality" article.
- B. Connector types and case mounted options, case finishes are given in section 0, 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, 50 mW
 - 1b. Peak IF current, 40 mA

NSN GUIDE

MCL NO. NSN MIL-M-28837/1*

ASK-1	5895-01-320-0366
SAM-1	5895-01-117-2926
SAM-2	5895-01-165-6621
SAM-3	5895-01-062-9973
SBL-1	5895-01-126-4913
SBL-1X	5895-01-179-8084
SRA-1	5895-00-008-8272 03
SRA-1-1	5962-01-113-5431
SRA-1W	5895-01-163-0433 09
SRA-3	5895-01-021-5914
SRA-6	5895-01-124-0117
SRA-8	5895-01-081-0977
SRA-11	5895-01-273-0883
SBL-3	5895-01-326-6030
TAK-5	5895-01-271-0842
TAK-6	5895-01-231-2372
TFM-2	5895-01-135-1852
TFM-3	5895-01-112-0031
TFM-4	5895-01-317-9388
TFM-11	5895-01-409-1158
TFM-12	5895-01-179-5686
TSM-3	5895-01-373-2444

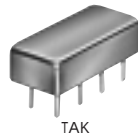


Distribution Centers NORTH AMERICA 800-654-7949 • 417 335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

INTERNET <http://www.minicircuits.com>

ISO 9001 CERTIFIED

001109



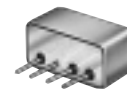
TAK



TSM



TFM



TUF

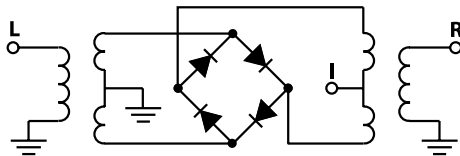
+7 dBm LO, up to +1 dBm RF

MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB						LO-IF ISOLATION, dB						CASE STYLE	C O N N E C T I O N	PRICE \$ Qty. (1-9)
	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.																
TAK-5* TAK-6	.01-250 .5-600	DC-250 DC-600	4.65 5.58	.02 .04	7.0 7.5	8.5 8.5	60 60	50 50	50 50	35 30	40 40	35 25	55 55	45 45	45 30	35 30	25 20	A04 A04	e e	22.95 22.95	
TSM-3	.1-500	DC-500	4.75	.04	7.5	8.5	60	50	50	35	35	25	55	45	45	30	35	25	A11	e	23.95
TFM-2	1-1000	DC-1000	5.74	.07	7.5	8.5	50	45	40	25	30	25	45	40	35	25	25	18	B02	z	14.95
TFM-3**	0.04-400	DC-400	4.70	.06	7.0	8.0	60	50	50	35	35	25	55	40	45	30	35	25	B02	z	23.45
TFM-4	5-1250	DC-1250	6.47	.05	7.5	8.5	50	45	40	30	30	25	45	40	35	25	25	20	B02	z	25.45
TFM-5	5-1500	DC-1000	6.33	.06	8.5	9.5	60	45	35	25	30	25	60	40	35	15	25	14	B02	aa	27.95
TFM-11	1-2000	5-600	7.16	.07	8.5	9.0	50	45	35	25	25	20	45	40	27	20	25	20	B13	z	48.95
TFM-12	800-1250	50-90	5.71	.14	—	7.5	35	25	35	25	35	25	30	20	30	20	30	20	B13	z	48.95
TFM-2400	750-2400	DC-400	6.65	.20	—	9.0	30	20	30	20	30	20	30	10	30	10	30	10	B13	aa	30.95
TFM-4300	300-4300	DC-800	5.87	.13	—	10.5	30	20	—	—	30	17	15	7	—	—	10	7	B13	aa	40.95
TUF-1	2-600	DC-600	5.85	.04	7.0	8.0	60	50	42	30	37	25	60	45	47	30	36	22	B02	z	5.25
TUF-2	50-1000	DC-1000	5.85	.07	7.5	9.0	58	40	47	30	42	25	50	35	44	20	29	18	B02	z	6.20
TUF-3	0.15-400	DC-400	4.7	.02	7.0	8.0	60	50	46	30	35	25	60	40	47	25	35	20	B02	z	7.05
TUF-5	20-1500	DC-1000	5.7	.04	9.0	9.0	54	40	42	30	39	25	40	25	32	18	23	8	B02	z	10.45
TUF-11A	1400-1900	40-500	6.8	.30	8.6	8.6	33 (typ.) 20 (min.)						29 (typ.) 15 (min.)						B02	z	18.95

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 connections see case style outline drawings

PORT	d	e	f	j	m	p	s	w	z	aa	ab
LO	8	8	8	8	8	8	1	1	4	1	1
RF	1	1	1	3,4^	1	2	8	4	1	4	3
IF	3,4^	3,4^	3,4^	1	3	5,6^	3	5	2	2	2
GND EXT.	2,5,6,7	2,5,6,7	2,5,6,7	2,5,6,7	2,5,6,7	1,3,4,7	2,5,6,7	2,3,6	3	3	4
CASE GND	—	2	2,5,6,7	2,5,6,7	2,5,6,7	3,4,7	2,5,6,7	—	3	3	4
NOT USED	—	—	—	—	4	—	4	—	—	—	—

^ pins must be connected together externally