

FREQUENCY MIXERS

Plug-In

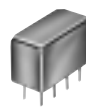
LEVEL 10 50 kHz to 8 GHz



TFM / TUF



ROK



SBL / SRA

+10 dBm LO, up to +5 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 \$
	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.									
TFM-15	10-3000	10-800	6.75	.08	8.0	8.5	35	25	35	25	35	25	30	20	30	20	B13	aa	51.95		
TFM-150**	10-2000	DC-1000	6.19	.11	8.0	8.0	32	25	35	25	35	25	33	20	30	20	B13		47.45		
❑ TUF-1LH	2-600	DC-600	6.0	.17	7.0	8.0	70	50	50	30	42	25	65	45	50	30	41	22	B02	z	7.25
❑ TUF-2LH*	50-1000	DC-1000	5.2	.30	7.0	8.5	58	40	44	30	39	25	60	35	50	25	38	20	B02	z	8.20
❑ TUF-3LH	0.15-400	DC-400	4.8	.37	7.0	8.0	67	50	51	30	40	25	67	40	45	25	34	20	B02	z	9.10
❑ TUF-5LH	20-1500	DC-1000	6.9	.27	8.5	9.0	53	40	42	30	38	25	40	25	30	18	22	8	B02	z	12.45
❑ TUF-11ALH	1400-1900	40-500	7.0	.20	8.6	8.6	36 (Typ.) 20 (Min.)						28 (Typ.) 15 (Min.)						B02	z	19.95
ROK-2500LH	1-2500	DC-500	6.4	.20	8.4	9.0	55	40	48	20	30	20	55	38	27	15	22	15	PP230	ah	34.95
❑ SBL-1LH	2-500	DC-500	5.8	.03	7.0	8.0	75	45	68	35	56	25	61	35	45	25	36	20	A06	d	6.75
❑ SBL-1-1LH	.2-400	DC-400	5.2	.06	7.0	9.0	67	45	64	30	51	25	62	30	52	25	34	20	A06	d	9.45
❑ SBL-1XLH	10-1000	5-500	6.0	.12	7.5	8.5	50	40	40	25	30	20	70	45	55	40	45	30	A06	j	8.45
❑ SBL-2LH	5-1000	DC-1000	5.9	.09	7.5	9.5	67	45	61	30	57	30	68	40	54	30	43	20	A06	h	9.45
❑ SBL-11LH	5-2000	10-600	7.0	.11	8.5	9.5	60	45	45	30	30	20	50	35	30	20	25	16	A06	m	22.95
SRA-2CR	10-1000	5-500	5.68	.12	7.5	8.0	50	40	40	30	30	20	40	25	30	18	25	15	A01	s	19.95
SRA-215	.05-1500	.05-500	5.20	.08	7.5	9.0	25	20	35	25	30	20	25	20	35	25	25	15	A01	m	30.95
SRA-220	.05-2000	.05-500	5.59	.11	8.0	9.0	25	20	40	30	30	20	25	20	40	30	25	15	A01	m	33.95

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

M = mid range [$10f_L$ to $f_U/2$]
m = mid band [$2f_L$ 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
- Non-hermetic
- ▼ When ordering, specify BNC or SMA connectors.
- * L=50-100 MHz; M=100-500 MHz
- ** Below 10 MHz IF, conversion loss increase up to 6 dB higher as frequency decreases to DC.
- *** Above 750 MHz IF, conversion loss increases up to 9.8 dB max.
- A. General Quality Control Procedures, Environmental Specifications, Hi-Rel and MIL description are given in General Information (Section 0).
- 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 50mW;
 - 1b. Peak IF current, 40mA

NSN GUIDE

MCL NO.	NSN
TFM-15	5895-01-292-2759
ZFM-15	5895-01-412-3035
ZFM-150	5895-01-217-6878



Mini-Circuits®

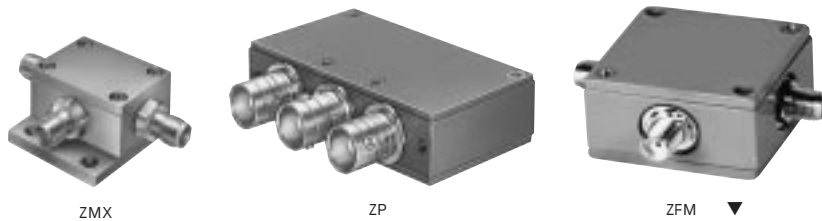
INTERNET <http://www.minicircuits.com>

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

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ISO 9001 CERTIFIED

Coaxial



+10 dBm LO, up to +5 dBm RF

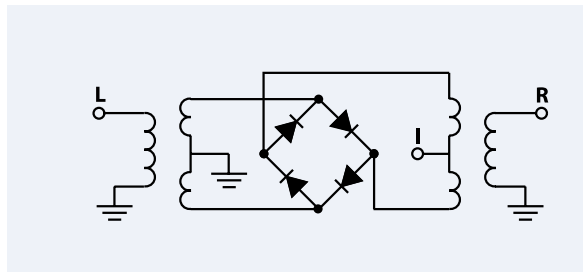
MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB						LO-IF ISOLATION, dB						CASE STYLE	C O N N E C T I O N	PRICE \$
	LO/RF f _L -f _U	IF	Mid-Band			Total Range Max.	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.	Note B	Qty. (1-9)				
			x̄	m	σ																
																		Max.			
ZMX-7GLHR*** ZMX-8GLH***	3700-7000 3700-8000	DC-1500 DC-2000	5.4 5.5	.30 .20	— —	8.5 8.5	33 (Typ.) 40 (Typ.)	20 (Min.) 20 (Min.)				35 (Typ.) 18 (Typ.)	20 (Min.) 8 (Min.)	BU413 af BU413ad	71.95 74.95						
ZP-1LH ZP-3LH	2-600 0.15-400	DC-600 DC-400	6.0 4.8	.17 .37	7.0 7.0	8.0 8.0	70 50 67 50	50 30 51 30	42 25 40 25				65 45 67 40	50 30 45 25	41 22 34 20	GG60 GG60	ag ag	41.95 41.95			
ZP-5LH ZP-11ALH ZP-860LH	20-1500 1400-1900 800-1050	DC-1000 40-500 DC-250	6.9 7.0 6.3	.27 .20 .27	8.5 8.6 7.9	9.0 8.6 7.9	53 40 36 (Typ.) 35 (Typ.)	42 30 20 (Min.) 25 (Min.)	38 25			40 25 28 (Typ.) 27 (Typ.)	30 18 15 (Min.) 18 (Min.)	22 8	GG60 GG60 GG60	ag ag ag	45.95 45.95 45.95				
ZFM-15 ZFM-150**	10-3000 10-2000	DC-800 DC-1000	6.13 6.05	.14 .12	8.0 8.0	8.5 8.0	35 25 32 25	35 25 35 25	35 25 35 20			30 20 33 20	30 20 30 20	30 20 20 25	K18 K18	ad ad	89.95 69.95				

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 $f_U/2$]



pin and coaxial connections see case style outline drawings for pin locations

PORT	d	h	j	m	s	z	aa	ad	af	ag	ah
LO	8	8	8	8	1	4	1	1	2	L	4
RF	1	1	3,4^	1	8	1	4	2	1	R	2
IF	3,4^	3,4^	1	3	3	2	2	3	3	X	1
GND EXT.	2,5,6,7	2,5,6,7	2,5,6,7	2,5,6,7	2,5,6,7	3	3	—	—	—	3
CASE GND	—	2,5,6	2,5,6,7	2,5,6,7	2,5,6,7	3	3	—	—	—	3
NOT USED	—	—	—	4	4	—	—	—	—	—	—

^ pins must be connected together externally