

FREQUENCY MIXERS

Plug-In

LEVEL 10 50 kHz to 8 GHz



TFM / TUF



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	CONNECTION	PRICE \$
	LO/RF f_L-f_U	IF	Mid-Band \bar{x}	σ	Max.	Total Range Max.	L Typ.	M Typ.	U Typ.	L Typ.	M Typ.	U Typ.			
TFM-15	10-3000	10-800	6.75	.08	8.0	8.5	35	25	35	25	35	25	B13	aa	51.95
TFM-150**	10-2000	DC-1000	6.19	.11	8.0	8.0	32	25	35	25	35	25	B13	aa	47.45
<input type="checkbox"/> TUF-1LH	2-600	DC-600	6.0	.17	7.0	8.0	70	50	50	30	42	25	B02	z	7.25
<input type="checkbox"/> TUF-2LH*	50-1000	DC-1000	5.2	.30	7.0	8.5	58	40	44	30	39	25	B02	z	8.20
<input type="checkbox"/> TUF-3LH	0.15-400	DC-400	4.8	.37	7.0	8.0	67	50	51	30	40	25	B02	z	9.10
<input type="checkbox"/> TUF-5LH	20-1500	DC-1000	6.9	.27	8.5	9.0	53	40	42	30	38	25	B02	z	12.45
<input type="checkbox"/> 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
<input type="checkbox"/> SBL-1XLH	10-1000	5-500	6.0	.12	7.5	8.5	50	40	40	25	30	20	A06	j	8.45
<input type="checkbox"/> SBL-2LH	5-1000	DC-1000	5.9	.09	7.5	9.5	67	45	61	30	57	30	A06	h	9.45
SRA-220	.05-2000	.05-500	5.59	.11	8.0	9.0	25	20	40	30	30	20	A01	m	33.95

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 $f_U/2$]

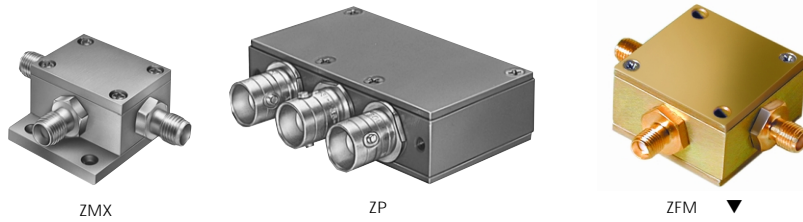
NOTES:

- 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

Coaxial



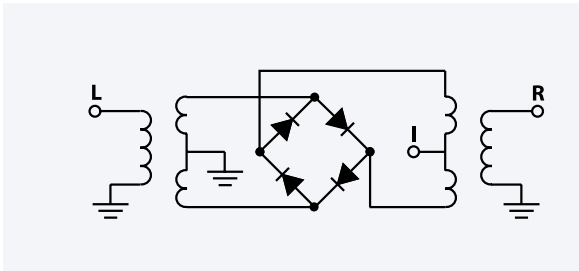
+10 dBm LO, up to +5 dBm RF

MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB			LO-IF ISOLATION, dB			CASE STYLE	CONNECTOR	PRICE \$
	LO/RF f_L-f_U	IF	Mid-Band		Total Range	L	M	U	L	M	U				
			\bar{x}	m								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 BU413	af ad	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	20-1500 1400-1900	DC-1000 40-500	6.9 7.0	.27 .20	8.5 8.6	9.0 8.6	53 40 36 (Typ.)	42 30 20 (Min.)	38 25	40 25 28 (Typ.)	30 18 15 (Min.)	22 8	GG60 GG60	ag ag	45.95 45.95
ZFM-15 ZFM-150**	10-3000 10-2000	10-800 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	20 20 25 20	K18 K18	ad ad	89.95 69.95

L = low range [f_L to 10 f_L]

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