

# FREQUENCY MIXERS

Plug-In

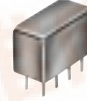
LEVEL 10 50 kHz to 8 GHz



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	CONNECTION	PRICE \$		
	LO/RF $f_L$ - $f_U$	IF	Mid-Band			Total Range Max.	L		M		U		L		M		U					Note B	Qty. (1-9)
			$\bar{x}$	$\sigma$	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	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	30	20	B13	aa	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  $10 f_L$ ]

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:

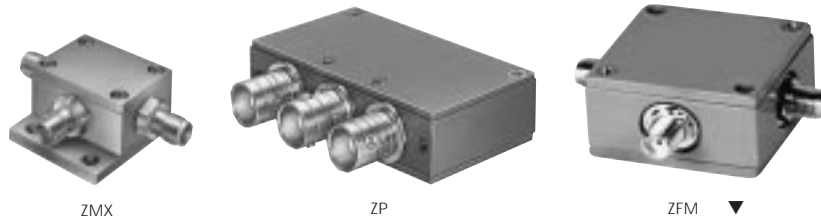
- $\bar{x}$  Average of conversion loss at center of mid-band frequency ( $f_L + f_U/4$ )
- $\sigma$  Standard deviation
- ☐ Non-hermetic
- ▼ When ordering, specify BNC or SMA connectors.
- \* L=50-100 MHz; M=100-500 MHz
- \*\* Below 10 MHz IF, conversion loss increase up to 6 dB higher as frequency 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

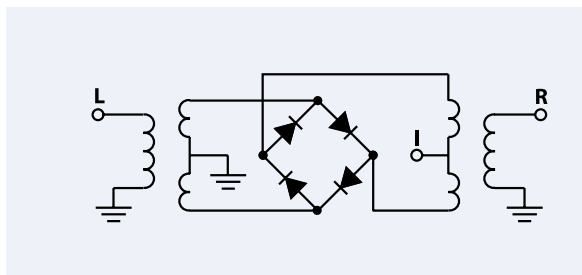
MODEL NO.	FREQUENCY MHz		CONVERSION LOSS dB				LO-RF ISOLATION, dB						LO-IF ISOLATION, dB						CASE STYLE	C O N N E C T I O N	PRICE \$	
	LO/RF $f_L-f_U$	IF	Mid-Band			Total Range Max.	L Typ.	M Typ.	U Typ.	L Min.	M Min.	U Min.	L Typ.	M Typ.	U Typ.	L Min.	M Min.	U Min.				Note B
			$\bar{x}$	$\sigma$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