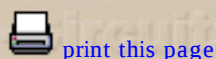


Frequency Mixers

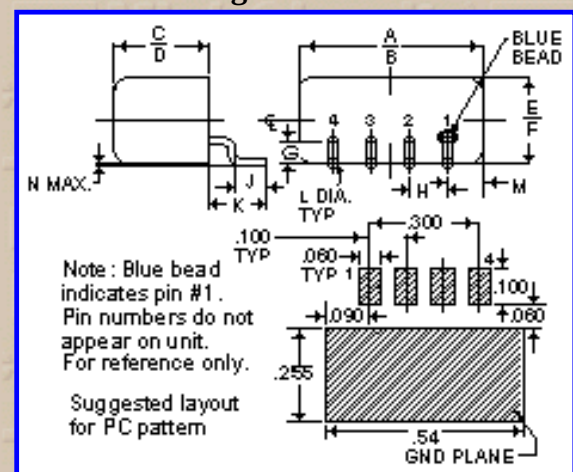


LO Power Level 13 dBm

Pin Configuration

Port	LO	RF	IF	Gnd Ext.	Case Gnd	Not Used
z	4	1	2	3	3	-

Outline Drawing



Case Style - NNN150 (inch,mm) weight: 1.9 grams.

A	B	C	D	E	F	G	H	J
.50	.48	.255	.240	.23	.21	.06	.100	.09
12.700	12.192	6.477	6.096	5.842	5.334	1.524	2.540	2.286
K	L	M	N	P	Q	R	S	T
.16	.020	.09	.005					
4.064	0.508	2.286	0.127					

Tolerance: .x ± .1 .xx ± .03 .xxx ± .015 inch.

Material and Finish:

Header material: C.R.S. Pin material: #52 alloy. Finish: electro tin, hot-oil flowed. Cover material:upro-nickel.

Mounting:

Pin's meniscus (of header): 0.015" max.

Special Tolerances:

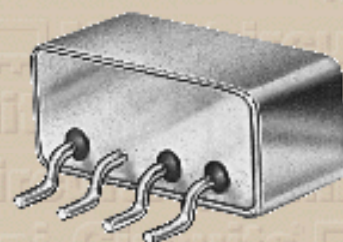
Pin diameter ±.005 inch.

Packaging:

Notes:

- For Surface Mount Environmental Specifications, please click [here](#).
- General Quality Control Procedures and Environmental Specifications are given in [Mini-Circuits Guarantees Quality](#). Hi-Rel, MIL description are given in [Hi-Rel and MIL](#)
- Prices and Specifications subjects to change without notice.

TUF-1MHSM



Electrical Specifications

TUF-1MHSM

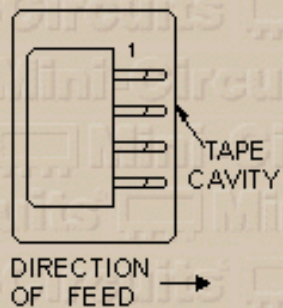
LO Power Level 13 dBm

Frequency MHz		Max. Conversion Loss dB		Min. LO-RF Isolation dB			Min. LO-IF Isolation dB		
LO/RF	IF	Mid-Band	Total Range	L	M	U	L	M	U
2.00-600	DC-600	7.0	8.0	50	30	25	45	30	22

L=low range(f_L to $10f_L$) M=mid range($10f_L$ to $f_U/2$) U=upper range($f_U/2$ to f_U)

Typical Performance Data

TUF-1MHSM		Conversion Loss (dB)			ISO	Isolation L-R (dB)			Isolation L-I (dB)		
RF MHz	LO MHz	LO +10 dBm	LO +13 dBm	LO +16 dBm	LO (MHz)	LO +10 dBm	LO +13 dBm	LO +16 dBm	LO +10 dBm	LO +13 dBm	LO +16 dBm
2.000	32.000	7.06	6.55	6.24	2.000	65.69	61.53	59.57	70.00	62.13	57.11
5.000	35.000	6.49	6.06	5.82	5.000	64.70	60.97	59.24	70.00	60.92	56.61
10.000	40.000	6.42	5.98	5.73	10.000	64.09	60.65	59.12	70.00	60.61	56.57
20.000	50.000	6.47	6.00	5.73	20.000	62.88	60.05	58.36	70.00	59.98	56.14
34.130	64.130	6.40	5.97	5.72	34.130	60.04	58.47	57.25	64.40	59.11	55.82
50.000	80.000	6.34	5.96	5.71	50.000	57.81	56.47	55.53	60.98	57.96	55.23
98.390	68.390	6.20	5.88	5.69	98.390	52.57	52.10	51.25	54.82	54.24	52.74
100.000	70.000	6.21	5.89	5.69	100.000	52.48	52.04	51.17	54.67	54.11	52.66
130.520	100.520	6.24	5.90	5.69	130.520	50.38	49.90	49.14	52.37	52.13	51.57
162.650	132.650	6.40	5.95	5.76	162.650	48.58	47.90	47.13	50.32	50.16	50.32
200.000	170.000	6.41	6.00	5.84	200.000	46.76	45.86	45.12	48.20	48.87	47.95
259.040	229.040	6.08	5.85	5.75	259.040	43.95	43.28	43.00	45.59	46.20	44.51
291.170	261.170	6.06	5.87	5.78	291.170	42.69	42.16	41.98	44.62	44.62	42.93
323.300	293.300	6.16	6.02	5.93	323.300	41.51	41.14	41.06	43.63	43.00	41.88
355.430	325.430	6.40	6.19	6.04	355.430	40.55	40.26	40.19	42.70	41.67	40.76
387.560	357.560	6.38	6.19	6.04	387.560	40.00	39.90	39.94	41.59	41.00	40.08
419.690	389.690	6.51	6.32	6.13	419.690	39.33	39.24	39.19	40.82	40.20	39.53
451.820	421.820	6.50	6.22	5.98	451.820	38.62	38.55	38.88	40.01	38.94	38.26
483.950	453.950	6.43	6.16	5.96	483.950	37.86	38.04	38.47	39.22	37.91	37.19
500.000	470.000	6.45	6.17	5.96	500.000	37.70	37.96	38.29	38.55	37.30	36.53

UNIT ORIENTATION**Packaging information:**

Tape Width(mm): 24
 Reel Size(inches): 13
 Device Cavity Pitch(mm): 16
 Devices Per Reel: 500

RF/LO	VSWR RF port			VSWR LO port			IF	VSWR IF port			Ø detection		
FREQ. (MHz)	LO +10 dBm	LO +13 dBm	LO +16 dBm	LO +10 dBm	LO +13 dBm	LO +16 dBm	FREQ. (MHz)	LO +10 dBm	LO +13 dBm	LO +16 dBm	FREQ. MHz	max.DC output mV	DC offset mV
5.001	1.31	1.24	1.23	1.25	1.92	2.86	5.001	1.54	1.35	1.25	2.00	-509.70	0.20
10.000	1.23	1.12	1.11	1.15	1.78	2.68	10.000	1.55	1.35	1.26	5.00	-523.00	0.26
20.000	1.19	1.06	1.04	1.20	1.84	2.66	20.000	1.54	1.35	1.25	10.00	-529.40	0.28
35.938	1.17	1.03	1.04	1.15	1.82	2.64	35.938	1.53	1.34	1.24	20.00	-528.30	0.29
50.000	1.16	1.02	1.05	1.13	1.80	2.75	50.000	1.54	1.35	1.25	47.27	519.90	0.30
66.876	1.15	1.02	1.05	1.12	1.78	2.51	66.876	1.53	1.34	1.24	50.00	-519.30	0.30
100.000	1.15	1.02	1.05	1.12	1.78	2.51	100.000	1.54	1.35	1.25	100.00	-524.40	0.32
144.220	1.14	1.01	1.05	1.12	1.75	2.40	144.220	1.53	1.35	1.25	122.73	-534.10	0.30
175.160	1.14	1.01	1.06	1.12	1.73	2.40	175.160	1.55	1.36	1.27	152.91	-539.70	0.33
200.000	1.13	1.01	1.06	1.10	1.68	2.31	200.000	1.55	1.37	1.27	183.09	-545.40	0.41
237.040	1.13	1.01	1.06	1.10	1.67	2.28	237.040	1.59	1.40	1.30	200.00	-547.90	0.48
267.970	1.12	1.01	1.07	1.10	1.71	2.34	267.970	1.61	1.42	1.32	243.46	-562.60	0.69
298.910	1.11	1.01	1.07	1.09	1.65	2.28	298.910	1.64	1.44	1.34	288.73	-576.40	1.04
329.850	1.11	1.02	1.08	1.08	1.71	2.35	329.850	1.68	1.47	1.36	334.00	-538.60	1.57
360.790	1.10	1.02	1.09	1.10	1.69	2.29	360.790	1.69	1.49	1.38	349.09	-524.10	1.73
391.730	1.09	1.03	1.09	1.14	1.70	2.37	391.730	1.74	1.53	1.41	379.28	-503.50	1.78
422.660	1.08	1.04	1.10	1.13	1.71	2.30	422.660	1.80	1.57	1.45	424.55	-497.90	1.85
453.600	1.07	1.05	1.11	1.17	1.72	2.34	453.600	1.83	1.60	1.48	454.73	-490.70	1.96
484.540	1.06	1.06	1.12	1.17	1.72	2.33	484.540	1.89	1.63	1.51	469.82	-496.30	1.89
500.000	1.05	1.06	1.13	1.20	1.74	2.36	500.000	1.89	1.64	1.52	500.00	-508.30	1.87

Click Above for Actual Performance Data.



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