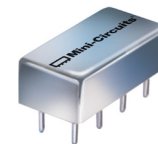


Frequency Mixer

TAK-1H+

Level 17 (LO Power +17 dBm) 2 to 500 MHz



CASE STYLE: A05

Maximum Ratings

| | |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 200mW |
| IF Current | 40mA |

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

| | |
|-------------|------------------|
| LO | 8 |
| RF | 1 |
| IF | 3,4 [^] |
| GROUND | 2,5,6,7 |
| CASE GROUND | 2 |

[^] pins must be connected together externally

Features

- low conversion loss, 5.93 dB typ.
- high isolation, 40 dB typ. L-R, 35 dB typ. L-I
- rugged welded construction
- hermetically sealed

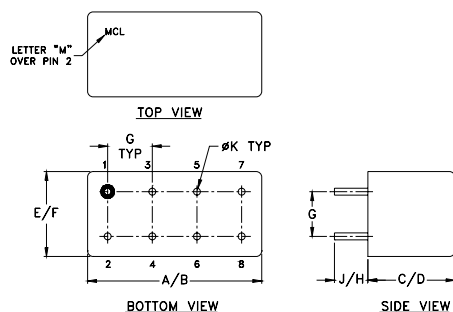
Applications

- VHF/UHF
- instrumentation
- defense & federal communications

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Outline Drawing



Outline Dimensions (inch/mm)

| | | | | | |
|-------|-------|------|------|-------|-------|
| A | B | C | D | E | F |
| .770 | .800 | .240 | .250 | .370 | .400 |
| 19.56 | 20.32 | 6.10 | 6.35 | 9.40 | 10.16 |
| G | H | J | K | wt | |
| .200 | .20 | .14 | .031 | grams | |
| 5.08 | 5.08 | 3.56 | 0.79 | 3.7 | |

Electrical Specifications

| FREQUENCY (MHz) | | CONVERSION LOSS (dB) | | | | LO-RF ISOLATION (dB) | | | | | | LO-IF ISOLATION (dB) | | | | | |
|-----------------|--------|----------------------|----------|-------|------|----------------------|------|------|------|------|------|----------------------|------|------|------|------|------|
| LO/RF | IF | Mid-Band | | Total | L | | M | | U | | L | | M | | U | | |
| $f_c - f_u$ | | \bar{X} | σ | Max. | Max. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. |
| 2-500 | DC-500 | 5.93 | 0.08 | 7.5 | 8.5 | 50 | 40 | 40 | 30 | 30 | 25 | 45 | 35 | 35 | 25 | 25 | 20 |

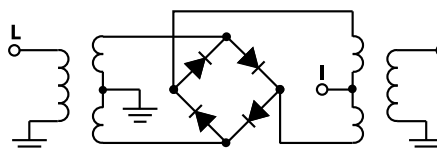
1 dB COMP.: +14 dBm typ.

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 $f_u/2$]

Typical Performance Data

| Frequency (MHz) | | Conversion Loss (dB) | Isolation L-R (dB) | Isolation L-I (dB) | VSWR RF Port (:1) | VSWR LO Port (:1) |
|-----------------|--------|----------------------|--------------------|--------------------|-------------------|-------------------|
| RF | LO | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm |
| 2.00 | 32.00 | 6.30 | 62.98 | 52.28 | 1.22 | 1.67 |
| 5.00 | 35.00 | 5.95 | 62.06 | 52.79 | 1.10 | 1.60 |
| 10.00 | 40.00 | 5.92 | 60.47 | 52.35 | 1.03 | 1.63 |
| 20.00 | 50.00 | 5.91 | 57.14 | 51.13 | 1.02 | 1.61 |
| 34.13 | 64.13 | 5.81 | 53.27 | 49.30 | 1.04 | 1.58 |
| 50.00 | 80.00 | 5.72 | 50.24 | 47.27 | 1.06 | 1.57 |
| 66.26 | 96.26 | 5.66 | 48.03 | 45.61 | 1.07 | 1.55 |
| 82.33 | 52.33 | 5.71 | 46.33 | 44.27 | 1.08 | 1.54 |
| 100.00 | 70.00 | 5.63 | 44.99 | 43.26 | 1.09 | 1.57 |
| 130.52 | 100.52 | 5.61 | 43.18 | 41.91 | 1.10 | 1.55 |
| 162.65 | 132.65 | 5.61 | 41.46 | 40.45 | 1.10 | 1.55 |
| 200.00 | 170.00 | 5.60 | 40.12 | 39.22 | 1.08 | 1.60 |
| 259.04 | 229.04 | 5.42 | 38.10 | 37.51 | 1.07 | 1.67 |
| 307.24 | 277.24 | 5.62 | 37.54 | 36.13 | 1.06 | 1.70 |
| 355.43 | 325.43 | 5.86 | 37.41 | 36.94 | 1.05 | 1.76 |
| 387.56 | 357.56 | 5.92 | 36.35 | 35.99 | 1.04 | 1.82 |
| 435.76 | 405.76 | 5.81 | 35.35 | 33.91 | 1.05 | 1.84 |
| 467.89 | 437.89 | 5.90 | 36.34 | 33.81 | 1.06 | 1.85 |
| 483.95 | 453.95 | 6.08 | 36.44 | 33.54 | 1.08 | 1.87 |
| 500.00 | 470.00 | 6.27 | 36.27 | 33.21 | 1.09 | 1.90 |

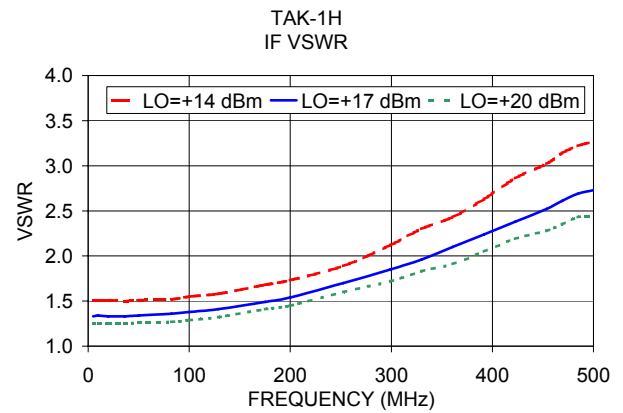
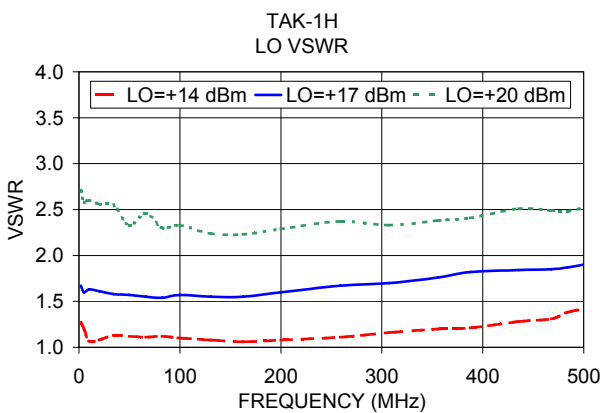
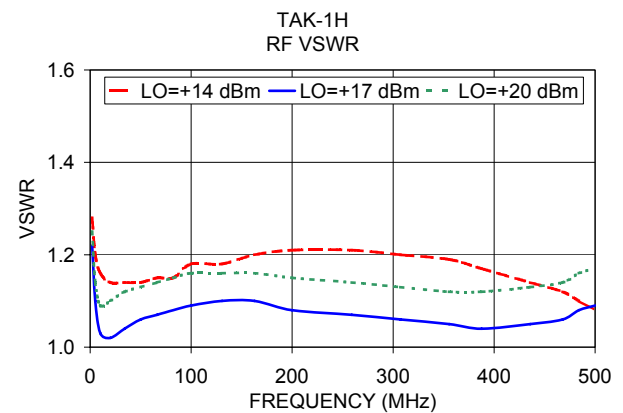
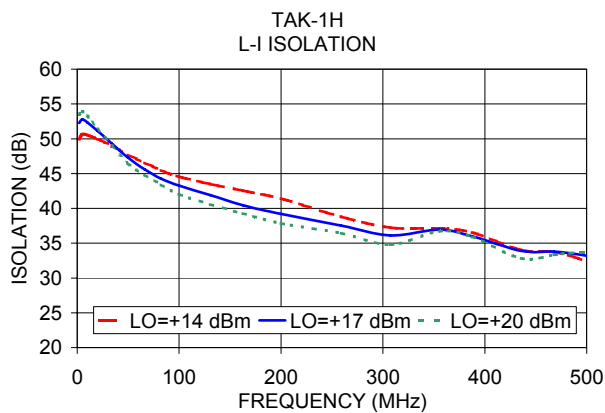
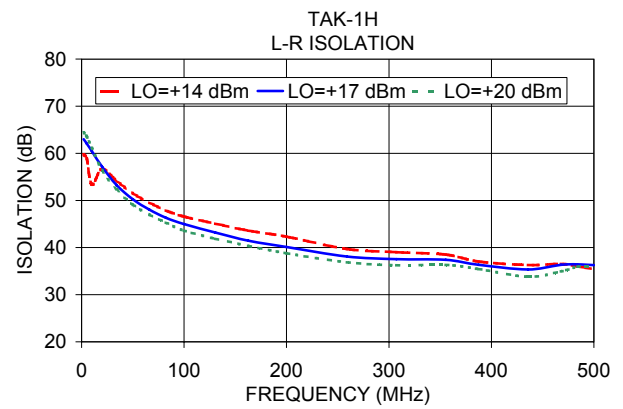
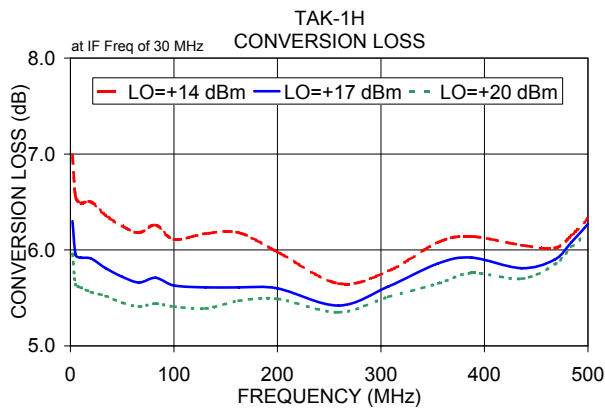
Electrical Schematic



Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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