

# Frequency Mixer

Level 17 (LO Power +17 dBm) 0.05 to 300 MHz

TAK-3H+



CASE STYLE: A05  
PRICE: \$28.70 ea. QTY (1-9)

## 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, 4.82 dB typ.
- high isolation, 40 dB typ. L-R, 35 dB typ. L-I
- rugged welded construction
- hermetically sealed

## Applications

- VHF
- FM radio
- instrumentation

## +RoHS Compliant

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

## Electrical Specifications

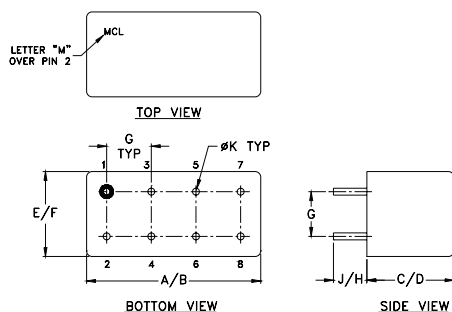
| FREQUENCY<br>(MHz) |        | CONVERSION LOSS<br>(dB) |          |                |      | LO-RF ISOLATION<br>(dB) |      |      |      |      |      | LO-IF ISOLATION<br>(dB) |      |      |      |      |      |
|--------------------|--------|-------------------------|----------|----------------|------|-------------------------|------|------|------|------|------|-------------------------|------|------|------|------|------|
|                    |        | Mid-Band<br>m           |          | Total<br>Range |      | L                       |      | M    |      | U    |      | L                       |      | M    |      | U    |      |
| LO/RF              | IF     | $\bar{X}$               | $\sigma$ | Max.           | Max. | Typ.                    | Min. | Typ. | Min. | Typ. | Min. | Typ.                    | Min. | Typ. | Min. | Typ. | Min. |
| $f_L$ - $f_U$      |        |                         |          |                |      |                         |      |      |      |      |      |                         |      |      |      |      |      |
| 0.05-300           | DC-300 | 4.82                    | 0.09     | 7.0            | 8.5  | 55                      | 45   | 40   | 30   | 30   | 25   | 50                      | 40   | 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  $f_U/2$ ]

## Outline Drawing



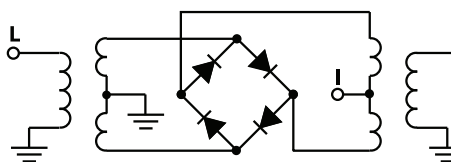
## Outline Dimensions (inch/mm)

| 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   |       |

## Typical Performance Data

| Frequency<br>(MHz) |        | Conversion<br>Loss<br>(dB) | Isolation<br>L-R<br>(dB) | Isolation<br>L-I<br>(dB) | VSWR<br>RF Port<br>(:1) | VSWR<br>LO Port<br>(:1) |
|--------------------|--------|----------------------------|--------------------------|--------------------------|-------------------------|-------------------------|
| RF                 | LO     | LO<br>+17dBm               | LO<br>+17dBm             | LO<br>+17dBm             | LO<br>+17dBm            | LO<br>+17dBm            |
| 0.05               | 30.05  | 5.81                       | 65.01                    | 59.81                    | 1.63                    | 1.53                    |
| 1.00               | 31.00  | 4.70                       | 61.51                    | 56.17                    | 1.64                    | 1.52                    |
| 2.00               | 32.00  | 4.63                       | 62.05                    | 56.05                    | 1.64                    | 1.39                    |
| 10.00              | 40.00  | 4.79                       | 64.41                    | 56.12                    | 1.61                    | 1.53                    |
| 20.00              | 50.00  | 5.00                       | 57.00                    | 52.66                    | 1.61                    | 1.46                    |
| 29.94              | 59.94  | 4.75                       | 51.03                    | 48.60                    | 1.60                    | 1.56                    |
| 49.23              | 79.23  | 4.69                       | 47.42                    | 46.33                    | 1.56                    | 1.51                    |
| 68.52              | 98.52  | 4.67                       | 42.12                    | 42.25                    | 1.53                    | 1.51                    |
| 87.81              | 57.81  | 4.57                       | 38.18                    | 38.54                    | 1.51                    | 1.54                    |
| 100.00             | 70.00  | 4.50                       | 36.56                    | 37.81                    | 1.46                    | 1.59                    |
| 136.03             | 106.03 | 4.45                       | 35.70                    | 36.26                    | 1.40                    | 1.60                    |
| 155.32             | 125.32 | 4.61                       | 33.06                    | 33.98                    | 1.31                    | 1.59                    |
| 174.61             | 144.61 | 4.84                       | 32.15                    | 32.92                    | 1.28                    | 1.59                    |
| 193.90             | 163.90 | 4.96                       | 31.48                    | 32.48                    | 1.22                    | 1.65                    |
| 213.19             | 183.19 | 4.98                       | 29.23                    | 30.80                    | 1.17                    | 1.75                    |
| 232.48             | 202.48 | 5.17                       | 27.78                    | 29.94                    | 1.11                    | 1.87                    |
| 242.13             | 212.13 | 5.27                       | 28.94                    | 32.37                    | 1.05                    | 1.81                    |
| 261.42             | 231.42 | 5.60                       | 31.41                    | 33.19                    | 1.03                    | 1.76                    |
| 280.71             | 250.71 | 6.03                       | 34.81                    | 33.60                    | 1.02                    | 1.78                    |
| 300.00             | 270.00 | 6.64                       | 36.67                    | 31.62                    | 1.02                    | 1.72                    |

## Electrical Schematic



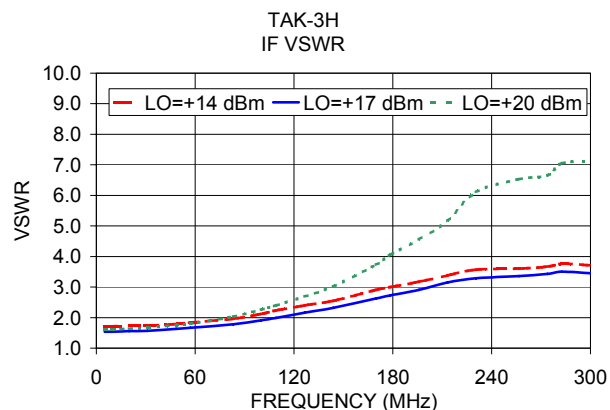
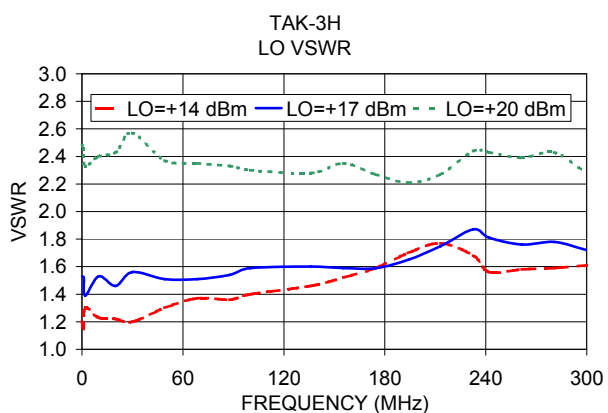
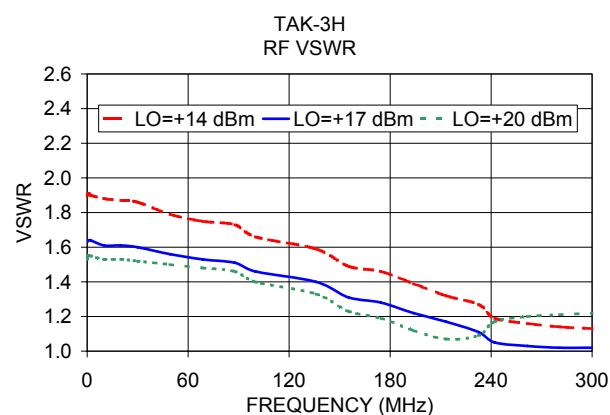
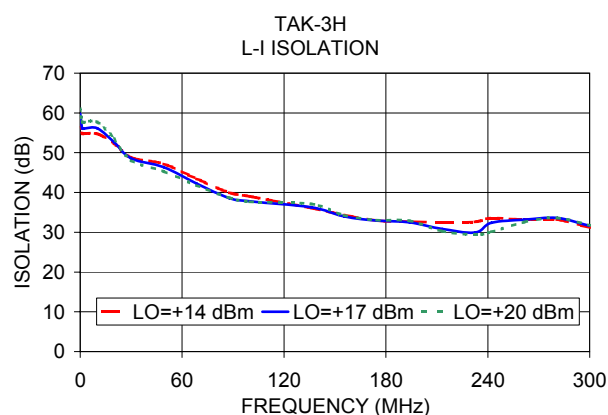
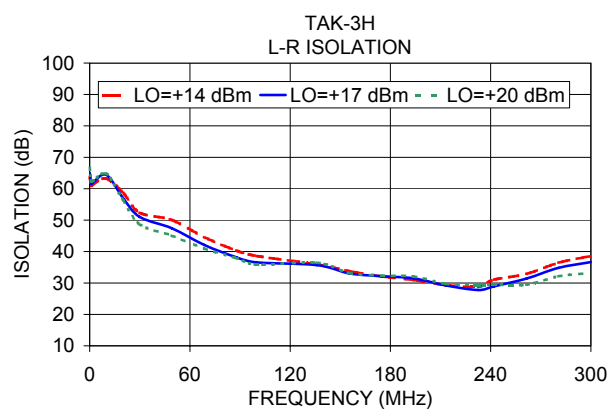
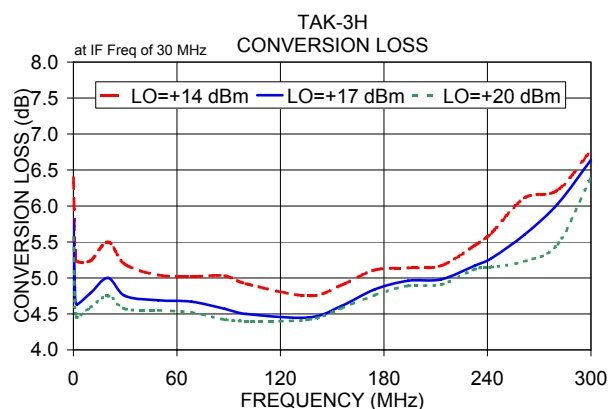
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