

# MIXERS SUB-HARMONIC

**LO = +7 dBm**

**EXCELLENT L.O. REJECTION**

## EVEN-HARMONIC MIXERS

An even-harmonic mixer will, by its inherent design, convert the fundamental input L.O. frequency into its even harmonics (m=2,4 or 8 etc.). These even harmonics will mix with the fundamental R.F. frequency to basically produce m L.O.  $\pm$  R. F. mixing results. Synergy specifies the 2 L.O. and 4 L.O. mixing products, as the higher L.O. even harmonics result in

much higher conversion losses. The best conversion loss is achieved at the 2 L.O. x 1 R.F. mixing condition.

These models allow for lower frequency local oscillators to be used, therefore reducing costs.

## SURFACE MOUNT

134J



159



| FREQUENCY RANGE (MHz) |          |        | CONVERSION LOSS (dB) |                | LO-RF ISOLATION (dB) | LO-IF ISOLATION (dB) | PACKAGE | PIN OUT | MODEL  |
|-----------------------|----------|--------|----------------------|----------------|----------------------|----------------------|---------|---------|--------|
| RF                    | LO       | IF     | 2LO-RF TYP/MAX       | 4LO-RF TYP/MAX | TYP/MIN              | TYP/MIN              |         |         |        |
| 280-800               | 140-400  | DC-100 | 11.5/13.5            | 17.0/26        | 45/33                | 30/22                | 159     | 1       | XLD-K1 |
| 280-800               | 140-400  | DC-100 | 11.5/13.5            | 17.0/26        | 45/33                | 30/22                | 134J    | 1       | XMZ-K1 |
| 500-1800              | 250-900  | DC-200 | 11.5/14.5            | 17.0/26        | 40/30                | 25/18                | 159     | 1       | XLD-K2 |
| 500-1800              | 250-900  | DC-200 | 11.5/14.5            | 17.0/26        | 40/30                | 25/18                | 134J    | 1       | XMZ-K2 |
| 800-2400              | 400-1200 | DC-300 | 12.5/16.5            | 18.0/27        | 30/25                | 25/16                | 159     | 1       | XLD-K3 |
| 800-2400              | 400-1200 | DC-300 | 12.5/16.5            | 18.0/27        | 30/25                | 25/16                | 134J    | 1       | XMZ-K3 |

## THROUGH HOLE

106



108



120



| FREQUENCY RANGE (MHz) |          |        | CONVERSION LOSS (dB) |                | LO-RF ISOLATION (dB) | LO-IF ISOLATION (dB) | PACKAGE | PIN OUT | MODEL   |
|-----------------------|----------|--------|----------------------|----------------|----------------------|----------------------|---------|---------|---------|
| RF                    | LO       | IF     | 2LO-RF TYP/MAX       | 4LO-RF TYP/MAX | TYP/MIN              | TYP/MIN              |         |         |         |
| 900-2400              | 450-1200 | DC-300 | 12.5/16.5            | 18.0/24        | 30/25                | 25/16                | 120     | 2       | CXP-237 |
| 900-2400              | 450-1200 | DC-300 | 12.5/16.5            | 18.0/24        | 30/25                | 25/16                | 106     | 3       | CXP-337 |
| 900-2400              | 450-1200 | DC-300 | 12.5/16.5            | 18.0/24        | 30/25                | 25/16                | 108     | 2       | CXP-437 |

### NOTES:

- 1dB Compression Point = -7 dBm (Typ.)
- IP3 (Input) = +4 dBm (Typ.)
- Maximum Input Power without damage = 100 mW ave. cw

### PIN-OUT TABLE

|    | RF | LO | IF | GND     | No Conn. |
|----|----|----|----|---------|----------|
| #1 | 4  | 1  | 5  | 2,3,6   | --       |
| #2 | 1  | 3  | 8  | 2,5,6,7 | 4        |
| #3 | 1  | 2  | 4  | 3       | --       |

GND = Ground externally

For pin location and package outline drawings, see back pages.