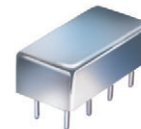


# Plug-In Frequency Mixer

## SBL-11+

Level 7 (LO Power +7 dBm) 5 to 2000 MHz



CASE STYLE: A06  
PRICE: \$24.20 ea. QTY (1-9)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| RF Power              | 50mW           |
| IF Current            | 40mA           |

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

### Pin Connections

|             |         |
|-------------|---------|
| LO          | 8       |
| RF          | 1       |
| IF          | 3       |
| GROUND      | 2,5,6,7 |
| CASE GROUND | 2,5,6,7 |
| NOT USED    | 4       |

### Features

- broadband 5 to 2000 MHz
- good conversion loss, 7.08 dB typ.
- rugged welded construction

### Applications

- VHF/UHF
- GPS
- defense & satellite communications

### Electrical Specifications

| FREQUENCY (MHz)        |        | CONVERSION LOSS (dB) |          |                        |                        | LO-RF ISOLATION (dB) |      |      |      |      |      | LO-IF ISOLATION (dB) |      |      |      |      |      |
|------------------------|--------|----------------------|----------|------------------------|------------------------|----------------------|------|------|------|------|------|----------------------|------|------|------|------|------|
| LO/RF<br>$f_L$ - $f_U$ | IF     | Mid-Band<br>m        |          | Total<br>Range<br>Max. | Total<br>Range<br>Max. | L                    |      | M    |      | U    |      | L                    |      | M    |      | U    |      |
|                        |        | $\bar{X}$            | $\sigma$ |                        |                        | Typ.                 | Min. | Typ. | Min. | Typ. | Min. | Typ.                 | Min. | Typ. | Min. | Typ. | Min. |
| 5-2000                 | 10-600 | 7.08                 | .11      | 8.5                    | 9.0                    | 50                   | 45   | 35   | 25   | 30   | 20   | 45                   | 40   | 30   | 20   | 25   | 15   |

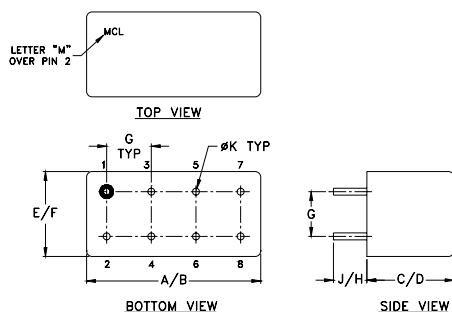
1 dB COMP.: +1 dBm typ.

L = low range [ $f_L$  to  $10 f_L$ ]  
m = mid band [ $2 f_L$  to  $f_U/2$ ]

M = mid range [ $10 f_L$  to  $f_U/2$ ]

U = upper range [ $f_U/2$  to  $f_U$ ]

### Outline Drawing



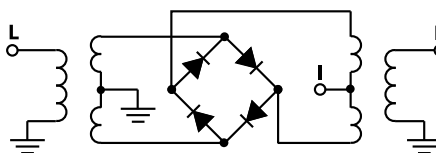
### Outline Dimensions (inch/mm)

|       |       |      |      |       |       |
|-------|-------|------|------|-------|-------|
| A     | B     | C    | D    | E     | F     |
| .770  | .800  | .285 | .310 | .370  | .400  |
| 19.56 | 20.32 | 7.24 | 7.87 | 9.40  | 10.16 |
| G     | H     | J    | K    | wt    |       |
| .200  | .20   | .14  | .031 | grams |       |
| 5.08  | 5.08  | 3.56 | 0.79 | 5.2   |       |

### 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 +7dBm             | LO +7dBm           | LO +7dBm           | LO +7dBm          | LO +7dBm          |
| 5.00            | 35.00   | 5.85                 | 46.19              | 67.00              | 3.19              | 3.03              |
| 10.00           | 40.00   | 5.88                 | 46.23              | 67.00              | 2.54              | 2.69              |
| 20.00           | 50.00   | 6.11                 | 46.26              | 67.00              | 2.45              | 2.70              |
| 50.00           | 80.00   | 6.37                 | 45.89              | 67.00              | 2.62              | 2.61              |
| 100.00          | 70.00   | 6.25                 | 44.70              | 64.66              | 2.96              | 2.46              |
| 200.00          | 170.00  | 6.62                 | 41.17              | 55.90              | 3.21              | 2.31              |
| 311.92          | 281.92  | 6.71                 | 38.72              | 50.11              | 3.31              | 2.27              |
| 465.39          | 435.39  | 7.06                 | 37.94              | 46.15              | 3.42              | 2.13              |
| 618.85          | 588.85  | 7.40                 | 38.38              | 45.38              | 3.19              | 2.08              |
| 772.31          | 742.31  | 7.53                 | 38.07              | 45.67              | 2.96              | 1.93              |
| 849.04          | 819.04  | 7.22                 | 37.13              | 43.78              | 2.41              | 1.73              |
| 1000.00         | 970.00  | 7.05                 | 36.28              | 38.27              | 2.10              | 1.58              |
| 1156.00         | 1126.00 | 6.76                 | 35.18              | 43.23              | 1.86              | 1.45              |
| 1386.20         | 1356.20 | 7.53                 | 41.65              | 38.52              | 2.12              | 1.17              |
| 1462.90         | 1432.90 | 7.62                 | 41.43              | 41.57              | 2.27              | 1.17              |
| 1500.00         | 1470.00 | 7.48                 | 41.94              | 42.71              | 2.19              | 1.32              |
| 1616.40         | 1586.40 | 6.96                 | 43.41              | 43.97              | 2.08              | 1.39              |
| 1800.20         | 1770.00 | 6.79                 | 41.03              | 38.23              | 1.87              | 1.59              |
| 1923.30         | 1893.30 | 6.64                 | 38.49              | 30.27              | 1.79              | 1.70              |
| 2000.00         | 1970.00 | 6.69                 | 39.35              | 27.98              | 1.67              | 1.74              |

### Electrical Schematic



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

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IF/RF MICROWAVE COMPONENTS

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