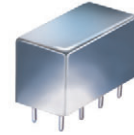


# Plug-In Frequency Mixer

## SRA-220+

Level 10 (LO Power +10 dBm) 0.05 to 2000 MHz



CASE STYLE: A01  
PRICE: \$36.20 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

- wideband, 0.05 to 2000 MHz
- low conversion loss, 5.59 dB typ.
- high L-R isolation, L-I isolation, 40 dB typ.
- hermetic, metal case

### Applications

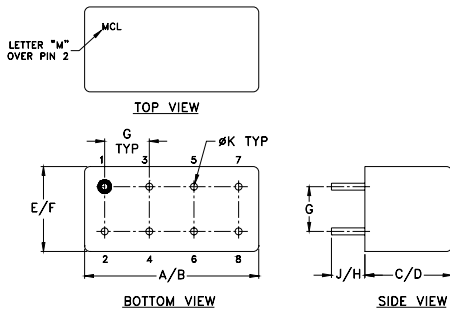
- GPS
- cellular
- defense & aeronautical systems
- military, hi-rel applications

### Electrical Specifications

| FREQUENCY (MHz)        | CONVERSION LOSS (dB)                       | LO-RF ISOLATION (dB)   |    |          | LO-IF ISOLATION (dB) |          |          |   |
|------------------------|--|------------------------|----|----------|----------------------|----------|----------|---|
|                        |  | L                      | M  | U        | L                    | M        | U        |   |
| LO/RF<br>$f_L$ - $f_U$ | Mid-Band<br>$m$<br>$\bar{X}$ $\sigma$ Max. | Total<br>Range<br>Max. | L  | M        | U                    | L        | M        | U |
| 0.05-2000              | .05-500                                    | 5.59 .11 8.0 9.0       | 25 | 20 40 30 | 30 20                | 25 20 40 | 30 25 15 |   |

1 dB COMP.: +5 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 [ $2 f_L$  to  $f_U/2$ ]

### Outline Drawing



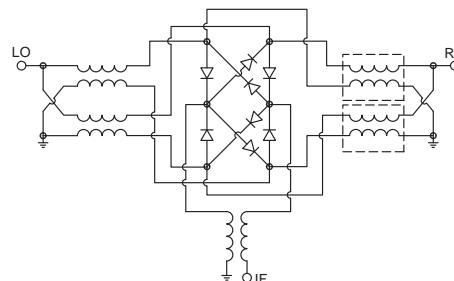
### Outline Dimensions (inch/mm)

| A     | B     | C    | D     | E     | F     |
|-------|-------|------|-------|-------|-------|
| .770  | .800  | .385 | .400  | .370  | .400  |
| 19.56 | 20.32 | 9.78 | 10.16 | 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 +10dBm          | LO +10dBm | LO +10dBm          | LO +10dBm | LO +10dBm         | LO +10dBm | LO +10dBm         |  |
| 0.05            | 30.05                | 6.31 | 20.56              | 20.32     | 1.42               | 1.38      |                   |           |                   |  |
| 1.00            | 31.00                | 5.23 | 37.02              | 35.22     | 1.42               | 1.38      |                   |           |                   |  |
| 5.00            | 35.00                | 5.34 | 41.42              | 40.80     | 1.44               | 1.34      |                   |           |                   |  |
| 20.00           | 50.00                | 5.57 | 42.73              | 42.42     | 1.45               | 1.41      |                   |           |                   |  |
| 50.00           | 80.00                | 5.59 | 42.75              | 42.09     | 1.44               | 1.37      |                   |           |                   |  |
| 100.00          | 70.00                | 5.50 | 42.49              | 40.87     | 1.49               | 1.34      |                   |           |                   |  |
| 153.89          | 123.89               | 5.49 | 42.03              | 38.92     | 1.63               | 1.30      |                   |           |                   |  |
| 230.81          | 200.81               | 5.78 | 41.75              | 36.48     | 2.03               | 1.24      |                   |           |                   |  |
| 307.73          | 277.73               | 5.75 | 41.49              | 34.62     | 2.73               | 1.22      |                   |           |                   |  |
| 500.00          | 470.00               | 5.97 | 38.13              | 32.70     | 3.06               | 1.24      |                   |           |                   |  |
| 615.42          | 585.42               | 6.37 | 40.61              | 34.50     | 3.23               | 1.30      |                   |           |                   |  |
| 692.34          | 662.34               | 6.90 | 42.63              | 35.22     | 3.35               | 1.25      |                   |           |                   |  |
| 846.18          | 816.12               | 7.39 | 40.51              | 34.89     | 2.98               | 1.34      |                   |           |                   |  |
| 1076.90         | 1047.20              | 7.31 | 36.30              | 27.82     | 2.40               | 1.38      |                   |           |                   |  |
| 1230.80         | 1200.80              | 6.91 | 32.05              | 23.22     | 1.60               | 1.36      |                   |           |                   |  |
| 1307.70         | 1277.80              | 6.81 | 30.96              | 21.56     | 1.20               | 1.31      |                   |           |                   |  |
| 1461.50         | 1431.70              | 7.49 | 24.40              | 19.73     | 1.04               | 1.35      |                   |           |                   |  |
| 1615.40         | 1585.50              | 7.29 | 34.31              | 19.71     | 1.19               | 1.37      |                   |           |                   |  |
| 1769.20         | 1739.20              | 7.80 | 38.84              | 18.84     | 1.31               | 1.43      |                   |           |                   |  |
| 2000.00         | 1970.30              | 8.89 | 31.97              | 19.56     | 1.41               | 1.56      |                   |           |                   |  |

### Electrical Schematic



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

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