

Non-Catalog Model

Frequency Mixer

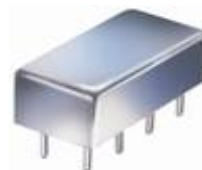
SBL-173SH

Level 17 (LO Power +17 dBm)

Important Note

This is a non-catalog model and can be manufactured on specific request. Pricing and delivery information can be supplied upon request.

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CASE STYLE : A06

| ELECTRICAL SPECIFICATIONS 50Ω @ +25°C | | | | | |
|---------------------------------------|---------------|-------|------|------|-------|
| Parameter | | Min. | Typ. | Max. | Units |
| Frequency | LO (fL to fU) | 5 | | 1200 | MHz |
| | RF (fL to fU) | 5 | | 1200 | MHz |
| | IF | 1 | | 1200 | MHz |
| Conversion Loss | mid band | | 5.7 | 7.0 | dB |
| | Total Range | | | 8.5 | dB |
| LO-RF Isolation | Low Range | 35 | 40 | | dB |
| | Mid Range | 25 | 35 | | dB |
| | Upper Range | 20 | 35 | | dB |
| LO-IF Isolation | Low Range | 35 | 40 | | dB |
| | Mid Range | 20 | 35 | | dB |
| | Upper Range | 20 | 30 | | dB |
| IP3 Input | | +27.5 | +30 | | dBm |
| 1 dB Comp. Input Power | | | +14 | | dBm |

Notes: Low Range = [fL to 10fL] Mid Range = [10fL to fU/2] Upper Range = [fU/2 to fU]
 mid band = [2fL to fU/2]

IP3 : RF Power = 0 dBm @ 200 MHz & 202 MHz , LO Power = +17 dBm @ 180 MHz

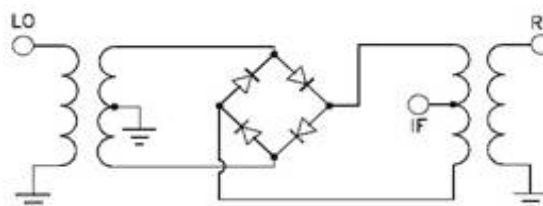
Non-hermetic

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

| PIN CONNECTIONS | |
|-----------------|------------|
| LO | 8 |
| RF | 1 |
| IF | 3, 4 ^ |
| GROUND | 2, 5, 6, 7 |

^ - pins must be connected together externally

Electrical Schematics



Frequency Mixer

SBL-173SH

Typical Performance Data

| RF (MHz) | LO (MHz) | CONVERSION LOSS (dB) | | | LO (MHz) | LO-RF ISOLATION (dB) | | | LO-IF ISOLATION (dB) | | |
|-------------|-------------|-------------------------|------|------|-------------|-------------------------|------|------|-------------------------|------|------|
| | | @LO (dBm) | | | | @LO (dBm) | | | @LO (dBm) | | |
| | | +7 | +10 | +13 | | +7 | +10 | +13 | +7 | +10 | +13 |
| 5.0 | 35.0 | 5.94 | 5.56 | 5.20 | 5.0 | 37.8 | 40.6 | 43.5 | 46.5 | 50.0 | 53.0 |
| 10.1 | 40.1 | 5.84 | 5.46 | 5.16 | 10.1 | 40.4 | 42.9 | 46.0 | 48.1 | 51.9 | 56.0 |
| 21.4 | 51.4 | 5.94 | 5.51 | 5.15 | 21.4 | 41.2 | 44.1 | 47.3 | 47.9 | 52.1 | 57.0 |
| 50.0 | 80.0 | 6.08 | 5.61 | 5.14 | 50.0 | 41.1 | 43.9 | 47.0 | 47.7 | 51.7 | 56.4 |
| 102.5 | 72.5 | 6.07 | 5.60 | 5.20 | 102.5 | 41.2 | 43.9 | 45.9 | 47.7 | 51.5 | 54.8 |
| 128.1 | 98.1 | 6.03 | 5.63 | 5.28 | 128.1 | 41.5 | 44.0 | 45.4 | 47.7 | 51.2 | 54.4 |
| 200.4 | 170.4 | 6.29 | 5.81 | 5.41 | 200.4 | 42.5 | 43.8 | 44.6 | 48.5 | 51.5 | 53.7 |
| 250.7 | 220.7 | 6.41 | 5.90 | 5.37 | 250.7 | 43.7 | 43.3 | 43.1 | 49.0 | 51.3 | 51.6 |
| 350.6 | 320.6 | 6.94 | 6.10 | 5.43 | 350.6 | 45.0 | 42.8 | 42.2 | 51.5 | 50.5 | 49.8 |
| 438.5 | 408.5 | 7.26 | 6.28 | 5.74 | 438.5 | 46.4 | 43.3 | 41.5 | 56.5 | 54.0 | 50.7 |
| 548.5 | 518.5 | 6.84 | 5.96 | 5.72 | 548.5 | 46.1 | 41.6 | 39.8 | 56.3 | 48.0 | 45.2 |
| 600.0 | 570.0 | 6.85 | 6.01 | 5.90 | 600.0 | 44.7 | 40.5 | 38.6 | 57.7 | 47.0 | 41.5 |
| 686.0 | 656.0 | 7.23 | 6.40 | 6.09 | 686.0 | 42.2 | 38.8 | 36.6 | 54.9 | 42.5 | 37.5 |
| 700.0 | 670.0 | 7.04 | 6.43 | 6.10 | 700.0 | 41.7 | 38.7 | 36.7 | 55.6 | 42.6 | 37.7 |
| 800.0 | 770.0 | 7.33 | 6.68 | 6.35 | 800.0 | 40.9 | 38.4 | 36.7 | 51.5 | 40.8 | 35.8 |
| 900.0 | 870.0 | 7.21 | 6.58 | 6.27 | 900.0 | 39.0 | 36.9 | 35.2 | 42.2 | 41.0 | 34.1 |
| 1000.0 | 970.0 | 7.11 | 6.44 | 6.18 | 1000.0 | 37.1 | 35.8 | 34.1 | 39.3 | 40.1 | 32.9 |
| 1100.0 | 1070.0 | 6.93 | 6.32 | 6.09 | 1100.0 | 36.0 | 35.4 | 34.3 | 41.2 | 38.4 | 32.3 |
| 1150.0 | 1120.0 | 6.96 | 6.30 | 6.09 | 1150.0 | 35.7 | 35.0 | 33.9 | 42.4 | 38.1 | 32.2 |
| 1200.0 | 1170.0 | 6.80 | 6.20 | 5.99 | 1200.0 | 35.0 | 34.3 | 33.2 | 43.6 | 36.5 | 31.7 |



Frequency Mixer

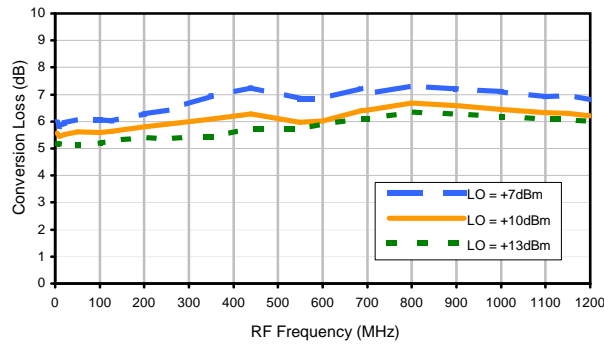
SBL-173SH

Typical Performance Data

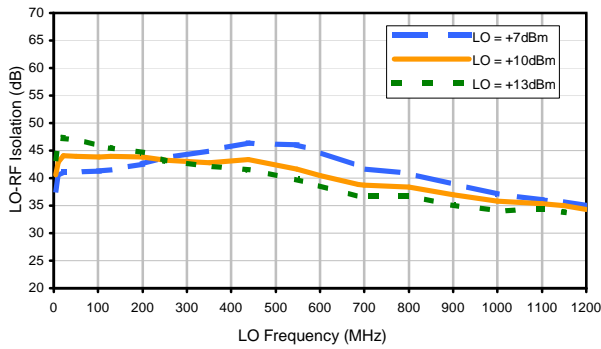
| RF/LO (MHz) | RF VSWR (:1) | | | LO VSWR (:1) | | | IF (MHz) | IF VSWR (:1) | | |
|----------------|-----------------|------|------|-----------------|------|------|-------------|-----------------|------|------|
| | @LO (dBm) | | | @LO (dBm) | | | | @LO (dBm) | | |
| | +7 | +10 | +13 | +7 | +10 | +13 | | +7 | +10 | +13 |
| 5.0 | 2.51 | 2.20 | 1.99 | 1.26 | 1.34 | 2.05 | 1.0 | 1.14 | 1.09 | 1.21 |
| 10.1 | 2.54 | 2.22 | 2.01 | 1.24 | 1.32 | 2.03 | 10.1 | 1.16 | 1.06 | 1.18 |
| 21.4 | 2.52 | 2.20 | 2.00 | 1.23 | 1.31 | 2.05 | 21.4 | 1.17 | 1.06 | 1.18 |
| 50.0 | 2.53 | 2.20 | 1.99 | 1.25 | 1.33 | 2.10 | 50.0 | 1.15 | 1.08 | 1.20 |
| 102.5 | 2.47 | 2.18 | 1.99 | 1.24 | 1.31 | 1.97 | 102.5 | 1.24 | 1.11 | 1.17 |
| 128.1 | 2.47 | 2.18 | 2.00 | 1.28 | 1.32 | 2.03 | 128.1 | 1.24 | 1.09 | 1.15 |
| 200.4 | 2.48 | 2.22 | 2.05 | 1.29 | 1.29 | 1.89 | 200.4 | 1.37 | 1.19 | 1.17 |
| 250.7 | 2.67 | 2.41 | 2.23 | 1.36 | 1.32 | 2.15 | 250.7 | 1.37 | 1.20 | 1.21 |
| 350.6 | 2.72 | 2.50 | 2.35 | 1.39 | 1.27 | 2.01 | 350.6 | 1.51 | 1.29 | 1.25 |
| 438.5 | 2.75 | 2.55 | 2.42 | 1.53 | 1.20 | 1.89 | 438.5 | 1.61 | 1.36 | 1.28 |
| 548.5 | 2.75 | 2.57 | 2.46 | 1.53 | 1.19 | 1.61 | 548.5 | 1.68 | 1.43 | 1.37 |
| 600.0 | 2.65 | 2.48 | 2.38 | 1.67 | 1.20 | 1.66 | 600.0 | 1.78 | 1.56 | 1.50 |
| 686.0 | 2.76 | 2.58 | 2.49 | 1.82 | 1.23 | 1.52 | 686.0 | 1.77 | 1.60 | 1.57 |
| 700.0 | 2.81 | 2.61 | 2.51 | 1.87 | 1.25 | 1.54 | 700.0 | 1.76 | 1.58 | 1.55 |
| 800.0 | 2.85 | 2.61 | 2.51 | 2.04 | 1.29 | 1.43 | 800.0 | 1.65 | 1.56 | 1.59 |
| 900.0 | 2.78 | 2.51 | 2.39 | 2.21 | 1.31 | 1.31 | 900.0 | 1.55 | 1.58 | 1.67 |
| 1000.0 | 2.64 | 2.31 | 2.17 | 2.35 | 1.35 | 1.18 | 1000.0 | 1.44 | 1.58 | 1.73 |
| 1100.0 | 2.50 | 2.12 | 1.93 | 2.44 | 1.40 | 1.07 | 1100.0 | 1.34 | 1.58 | 1.76 |
| 1150.0 | 2.47 | 2.06 | 1.84 | 2.47 | 1.41 | 1.07 | 1150.0 | 1.31 | 1.56 | 1.76 |
| 1200.0 | 2.44 | 2.00 | 1.74 | 2.45 | 1.42 | 1.13 | 1200.0 | 1.28 | 1.54 | 1.70 |

Typical Performance Curves

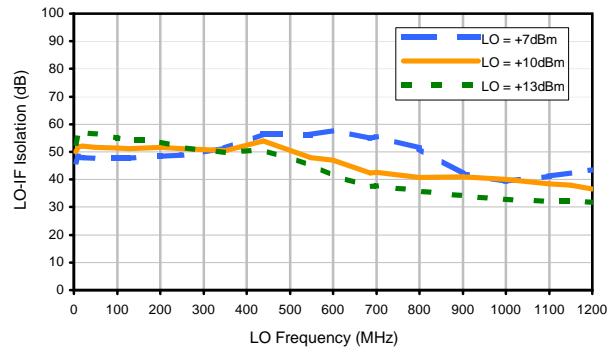
Conversion Loss



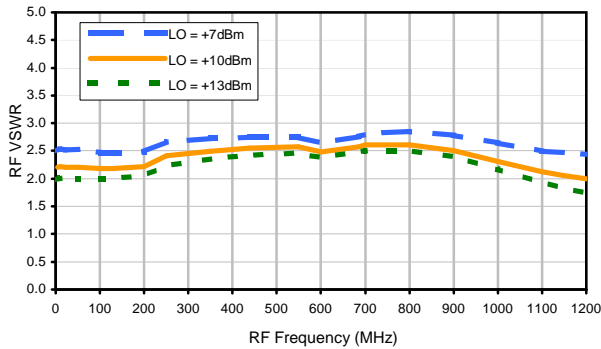
LO-RF Isolation



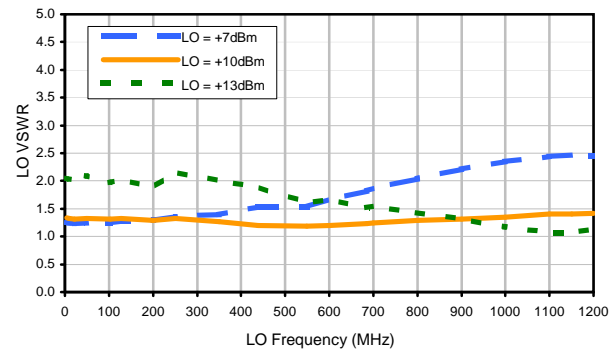
LO-IF Isolation



RF VSWR



LO VSWR



IF VSWR

