

## Power Divider, 3-way, 6-18GHz, SMA Female

## ESAT-3PD0618S

### Description

ESAT-3PD0618S is a 3-way Wilkinson divider that operates from 6 to 18 GHz. It is part of Esatcom Inc.'s catalog of splitters that offer a wide range of port count and frequency ranges. Its compact aluminum enclosure measures 1.57 x 1.57 x 0.38 inches. The device is RoHS compliant, however it may be specially ordered with lead solder. Return loss 14dB typical input, 15dB typical output. Insertion loss above 4.8dB is 0.3dB typical. Isolation 23 dB typ. Phase balance 3.4 degrees typical. Designed, assembled and tested in USA.



Photo is representative.

| Specification                 | Min. | Typ. | Max. | Units   |
|-------------------------------|------|------|------|---------|
| Frequency                     | 6    | --   | 18   | GHz     |
| Impedance                     | --   | 50   | --   | Ohm     |
| Return Loss (Port S)          | 14   | 19   | --   | dB      |
| Return Loss (Port I-3)        | 14   | 23   | --   | dB      |
| Insertion Loss (above 4.8 dB) | --   | 0.3  | 1.0  | dB      |
| Isolation                     | 18   | 23   | --   | dB      |
| Amplitude Balance             | --   | 0.3  | 0.9  | dB      |
| Phase Balance                 | --   | 3.4  | 12   | Degrees |
| Input Power (CW) <sup>1</sup> | --   | --   | 10   | Watts   |

### Mechanical

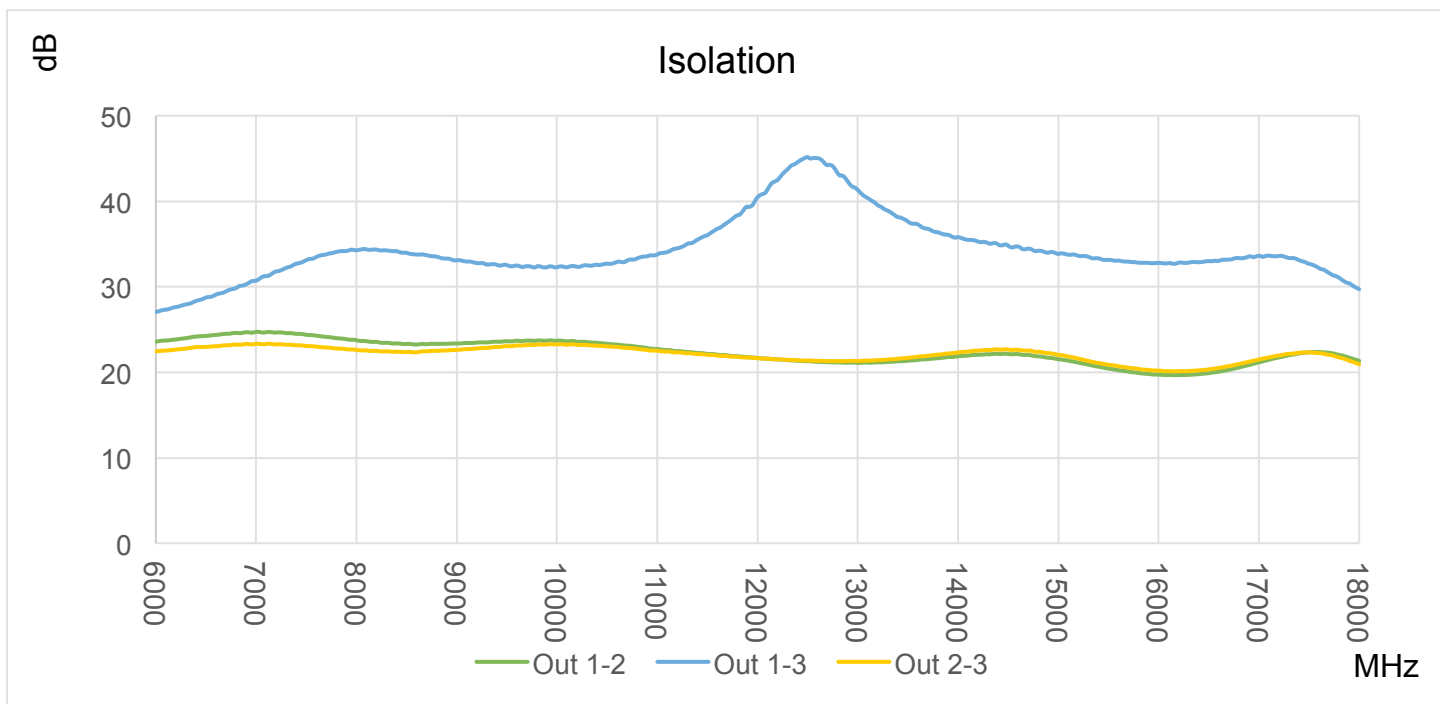
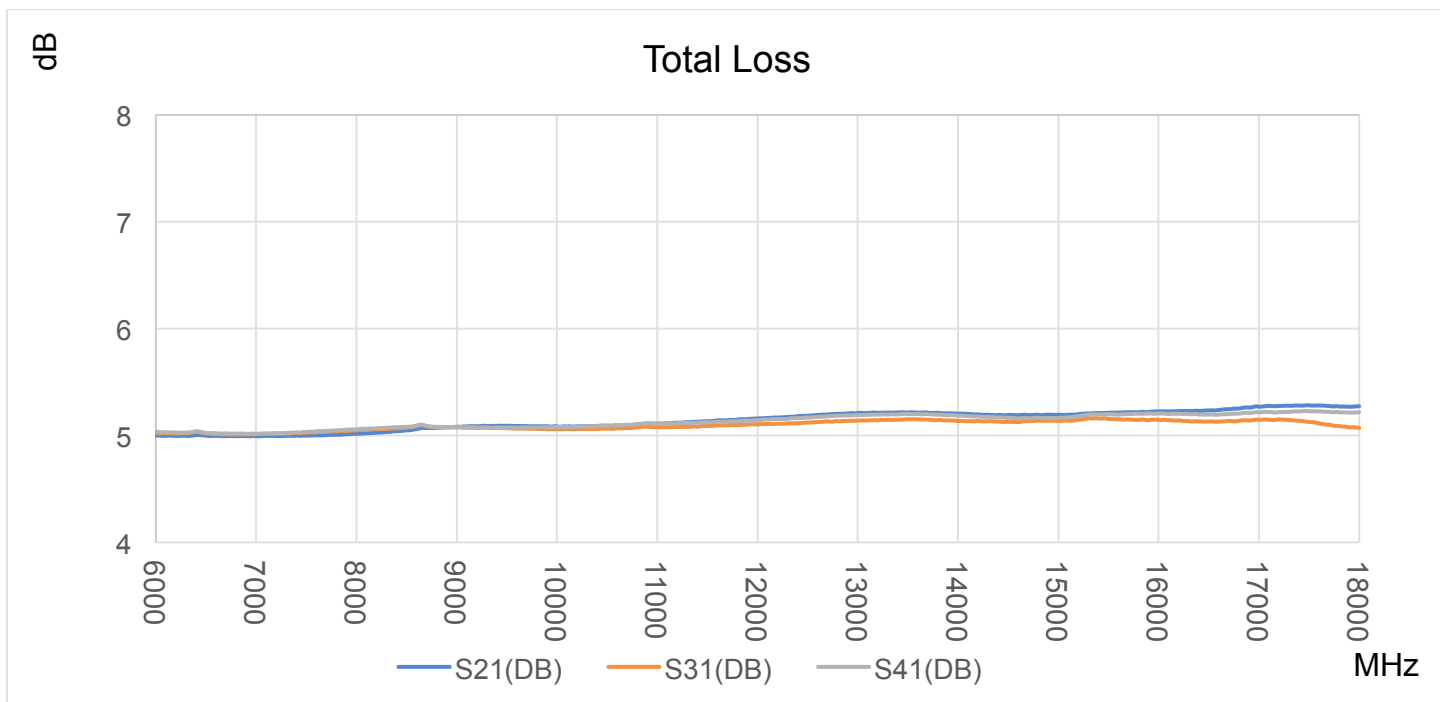
|                                    |                       |
|------------------------------------|-----------------------|
| Connector Interface                | SMA-Female            |
| Operating Temperature <sup>2</sup> | -55 to +85 °C         |
| Storage Temperature                | -55 to +100 °C        |
| Weight Estimate                    | 2 oz (57 g)           |
| Humidity                           | 10-90% non-condensing |
| Environment                        | Indoors Use Only      |

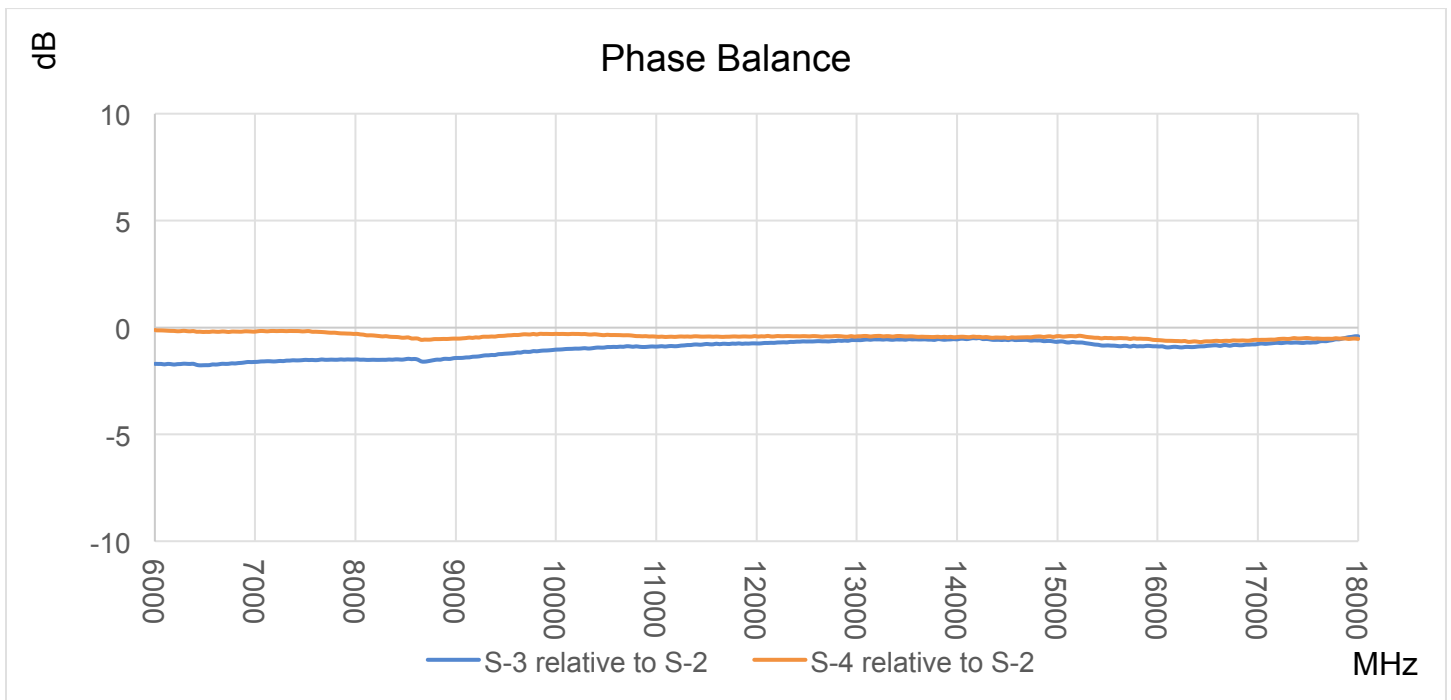
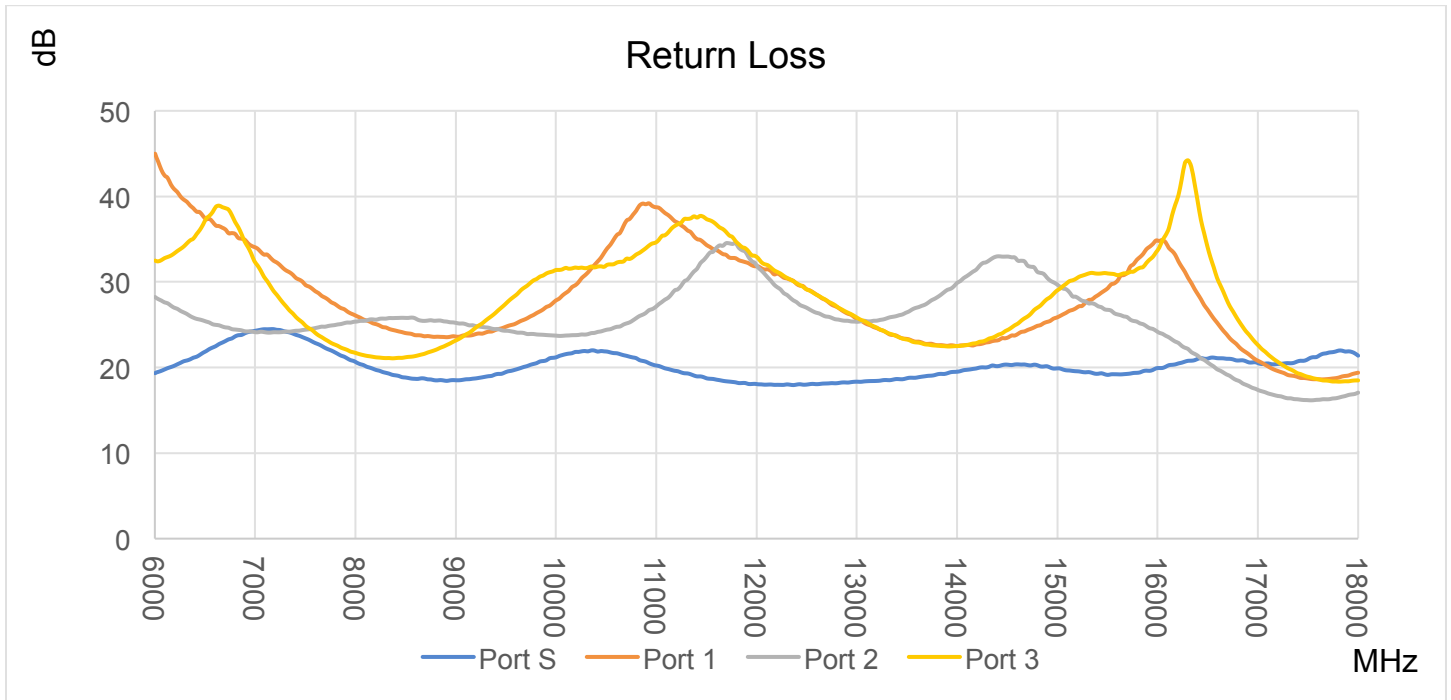
### Materials

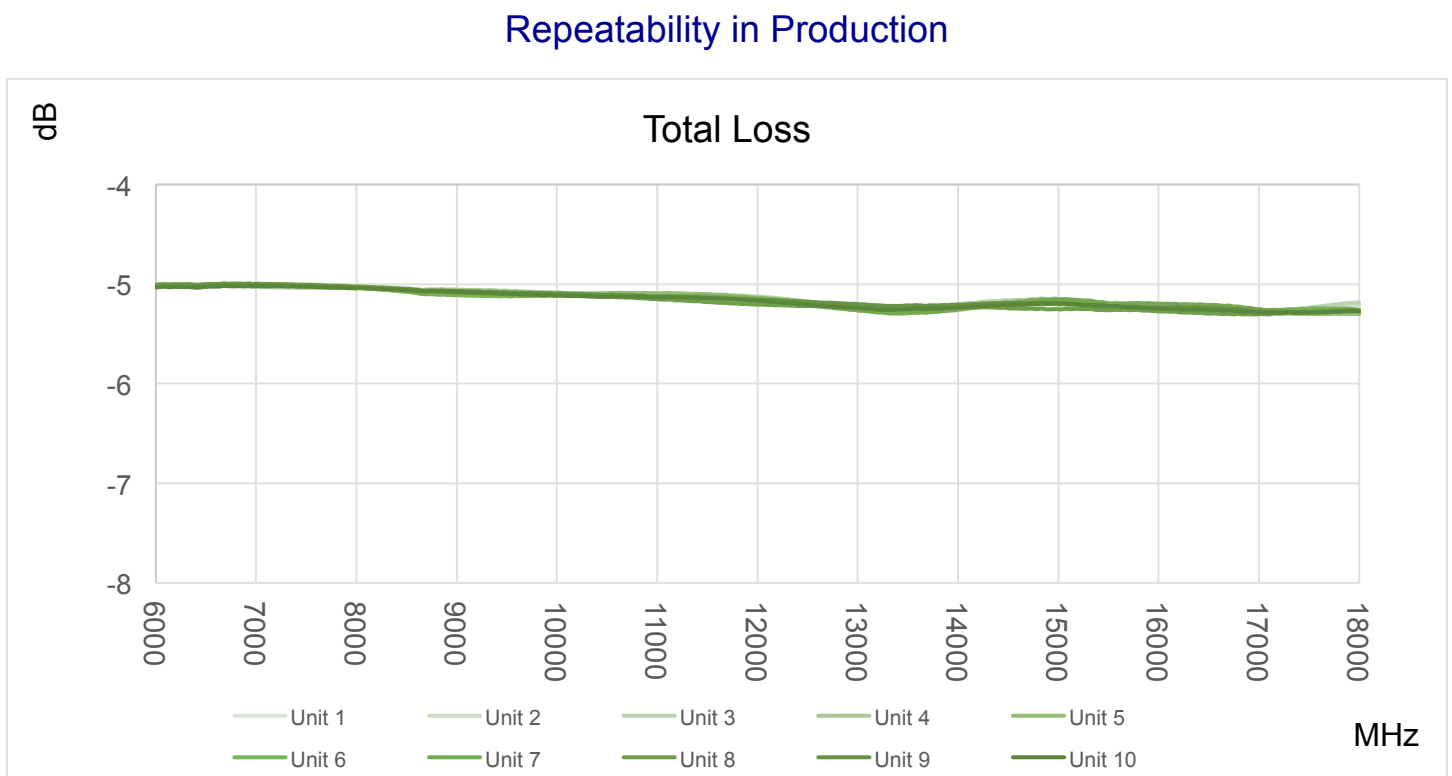
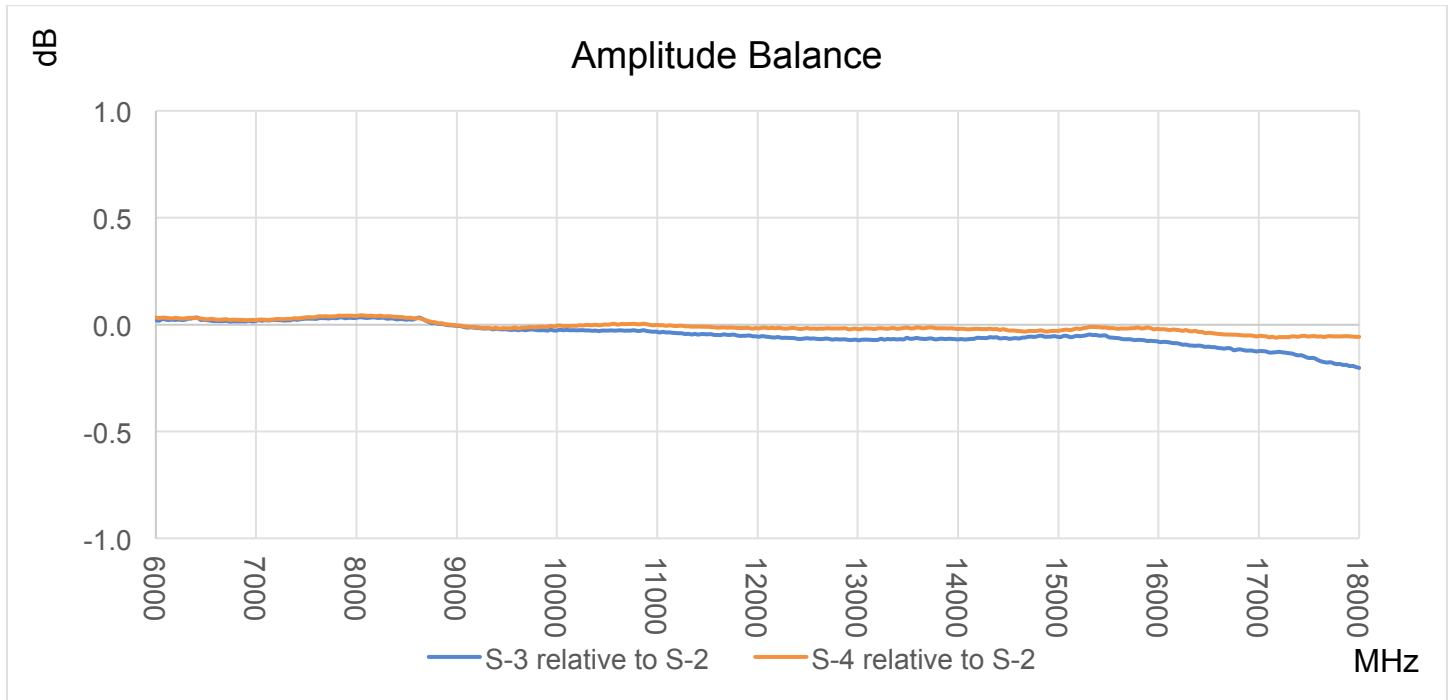
|                              |                    |
|------------------------------|--------------------|
| RoHS Compliant <sup>3</sup>  | Yes                |
| REACH Compliant <sup>3</sup> | Yes                |
| Enclosure                    | Aluminum           |
| Connectors                   | Brass, Gold Plated |
| Contacts                     | Be Cu, Gold Plated |
| Insulators                   | PTFE               |
| Finish                       | Green Paint        |

1. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
2. Electrical specification at +25 °C.
3. To the best of our knowledge at the time of publication.

## Typical Performance at +25 °C



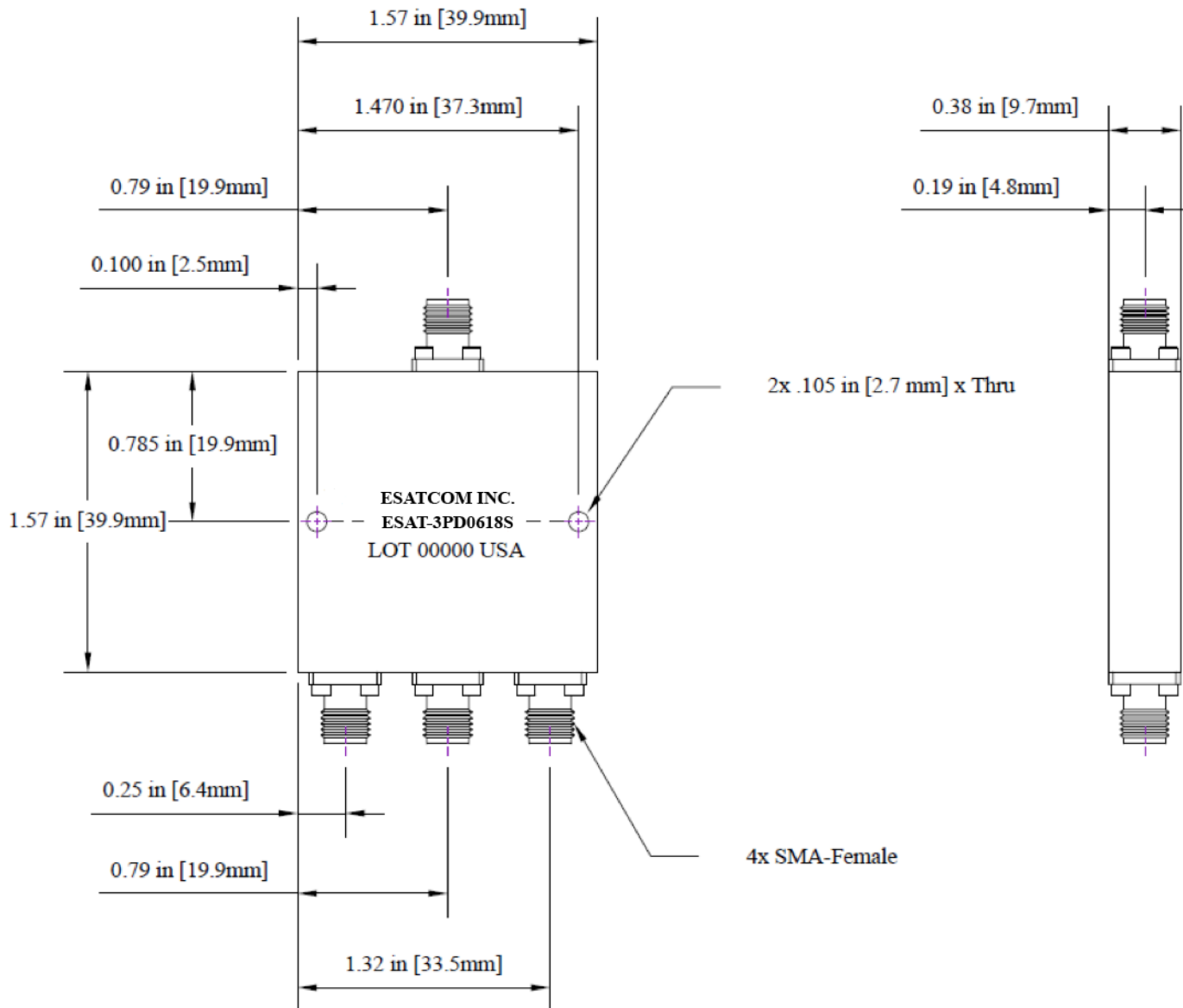




## Typical Performance Data

| Frequency<br>(MHz) | Return Loss<br>(dB) |        |        | Total Loss<br>(dB) |      | Isolation<br>(dB) |       |
|--------------------|---------------------|--------|--------|--------------------|------|-------------------|-------|
|                    | Port S              | Port 1 | Port 2 | S-1                | S-2  | I-2               | I-3   |
| 6000               | 19.37               | 44.96  | 28.24  | 5.00               | 5.03 | 23.60             | 27.06 |
| 6500               | 21.92               | 37.35  | 25.38  | 5.00               | 5.02 | 24.28             | 28.80 |
| 7000               | 24.34               | 33.90  | 24.12  | 4.99               | 5.02 | 24.75             | 30.87 |
| 7500               | 23.40               | 29.62  | 24.43  | 5.00               | 5.03 | 24.41             | 33.15 |
| 8000               | 20.56               | 25.99  | 25.38  | 5.02               | 5.05 | 23.73             | 34.31 |
| 8500               | 18.84               | 24.04  | 25.80  | 5.05               | 5.07 | 23.33             | 33.99 |
| 9000               | 18.51               | 23.60  | 25.20  | 5.08               | 5.08 | 23.38             | 33.13 |
| 9500               | 19.55               | 24.86  | 24.30  | 5.09               | 5.07 | 23.65             | 32.46 |
| 10000              | 21.19               | 27.85  | 23.73  | 5.09               | 5.06 | 23.70             | 32.33 |
| 10500              | 21.86               | 33.95  | 24.43  | 5.09               | 5.07 | 23.33             | 32.69 |
| 11000              | 20.25               | 38.74  | 27.06  | 5.11               | 5.08 | 22.75             | 33.78 |
| 11500              | 18.73               | 34.30  | 32.98  | 5.14               | 5.09 | 22.16             | 36.05 |
| 12000              | 18.04               | 31.83  | 31.70  | 5.16               | 5.11 | 21.67             | 40.66 |
| 12500              | 18.00               | 29.16  | 27.01  | 5.19               | 5.12 | 21.32             | 45.18 |
| 13000              | 18.34               | 25.65  | 25.35  | 5.21               | 5.14 | 21.11             | 41.27 |
| 13500              | 18.80               | 23.30  | 26.55  | 5.22               | 5.15 | 21.40             | 37.50 |
| 14000              | 19.51               | 22.50  | 29.89  | 5.21               | 5.14 | 21.88             | 35.80 |
| 14500              | 20.32               | 23.54  | 32.97  | 5.20               | 5.13 | 22.14             | 34.70 |
| 15000              | 19.90               | 25.84  | 29.76  | 5.20               | 5.14 | 21.57             | 33.84 |
| 15500              | 19.14               | 29.28  | 26.74  | 5.21               | 5.16 | 20.44             | 33.15 |
| 16000              | 19.94               | 34.80  | 24.06  | 5.23               | 5.15 | 19.74             | 32.80 |
| 16500              | 21.03               | 26.80  | 20.62  | 5.24               | 5.13 | 19.91             | 33.03 |
| 17000              | 20.49               | 20.75  | 17.34  | 5.27               | 5.15 | 21.22             | 33.65 |
| 17500              | 21.12               | 18.68  | 16.17  | 5.28               | 5.13 | 22.37             | 32.66 |
| 18000              | 21.39               | 19.40  | 17.07  | 5.28               | 5.07 | 21.32             | 29.73 |

## Outline Dimensions



Outline drawing: OL-3186

Dimensions are in inches, [mm] shown for convenience.

Tolerances on 2-pl decimals:  $\pm 0.03$ . 3-pl decimals:  $\pm 0.015$ .

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