

## Power Divider, 4-way, 0.5-26.5 GHz, SMA Female

## ESAT-4PD005265S

### Description

Model ESAT-4PD005265S is a wideband 4-way in-line power splitter covering of 500 MHz to 26.5 GHz with excellent return loss, low insertion loss, and high isolation performance. The product is a new offering of the 26.5GHz series offered by Esatcom Inc. Precision assembled, tested, and designed in the USA.



*Photo is representative.*

| Parameter                                  | Frequency (MHz) | Min. | Typ. | Max.  | Unit     |
|--------------------------------------------|-----------------|------|------|-------|----------|
| Frequency Range                            | --              | 500  | --   | 26500 | MHz      |
| Impedance                                  | --              | --   | 50   | --    | $\Omega$ |
| Return Loss (Port S)                       | 500-8000        | 12   | 17   | --    | dB       |
|                                            | 8000-18000      | 12   | 16   |       |          |
|                                            | 18000-26500     | 12   | 17   |       |          |
| Return Loss (Port 1-2)                     | 500-8000        | 14   | 18   | --    | dB       |
|                                            | 8000-18000      | 14   | 21   |       |          |
|                                            | 18000-26500     | 14   | 20   |       |          |
| Insertion Loss Above 6.0dB                 | 500-8000        | --   | 1.7  | 2.3   | dB       |
|                                            | 8000-18000      |      | 3.0  | 3.9   |          |
|                                            | 18000-26500     |      | 4.4  | 5.1   |          |
| Isolation                                  | 500-1500        | 12   | 14   | --    | dB       |
|                                            | 1500-18000      | 16   | 21   |       |          |
|                                            | 18000-26500     | 12   | 17   |       |          |
| Amplitude Unbalance ( $\pm$ ) <sup>1</sup> | 500-8000        | --   | 0.23 | 0.5   | dB       |
|                                            | 8000-18000      |      | 0.53 | 0.8   |          |
|                                            | 18000-26500     |      | 0.82 | 1.1   |          |
| Phase Unbalance ( $\pm$ ) <sup>1</sup>     | 500-8000        | --   | 3.2  | 4.5   | Degree   |
|                                            | 8000-18000      |      | 5.2  | 9.0   |          |
|                                            | 18000-26500     |      | 6.6  | 12    |          |
| Input Power (CW) <sup>2</sup>              | --              | --   | --   | 10    | W        |

### Mechanical

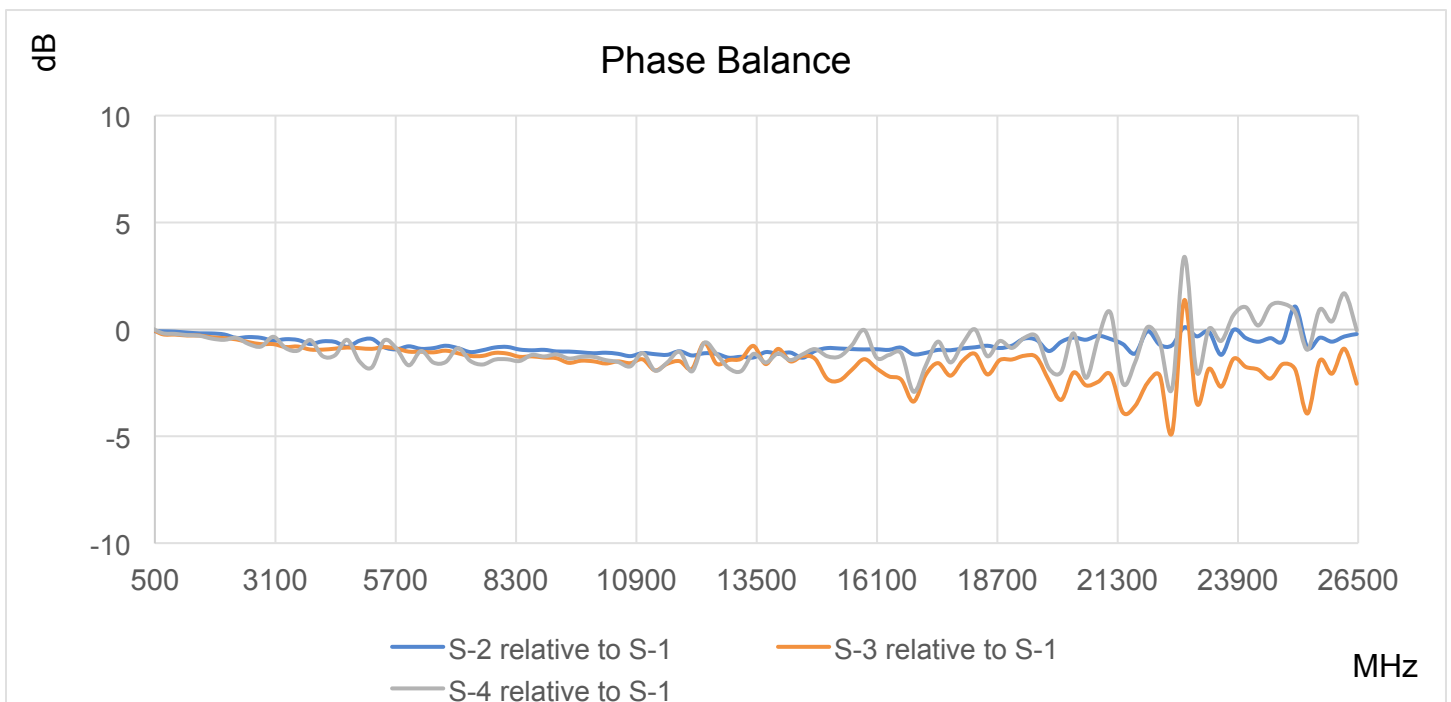
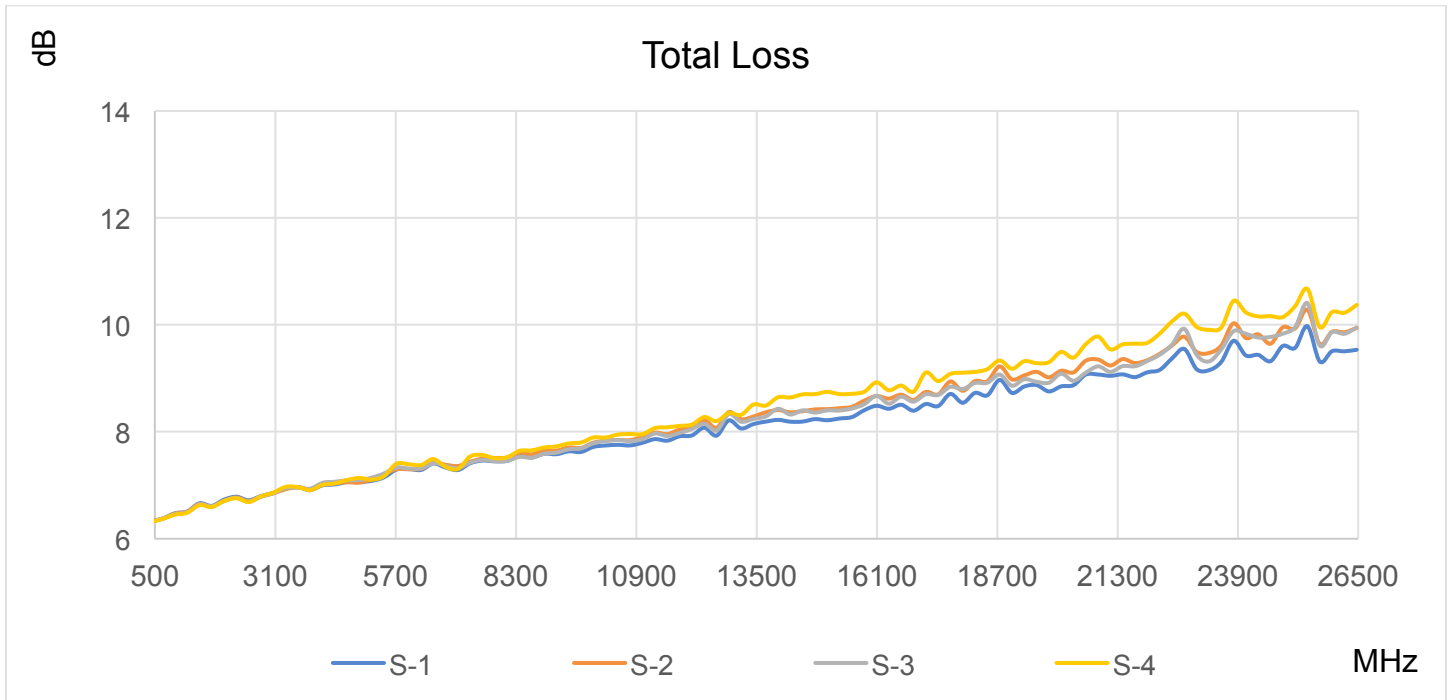
|                                    |                       |
|------------------------------------|-----------------------|
| Connector Interface                | SMA-Female            |
| Operating Temperature <sup>3</sup> | -55 to +85 °C         |
| Storage Temperature                | -55 to +100 °C        |
| Nominal Weight                     | 316 g (11.1 oz)       |
| Humidity                           | 10-90% non-condensing |
| Environment                        | Indoors Use Only      |
| CAGE Code                          | 87MG8                 |

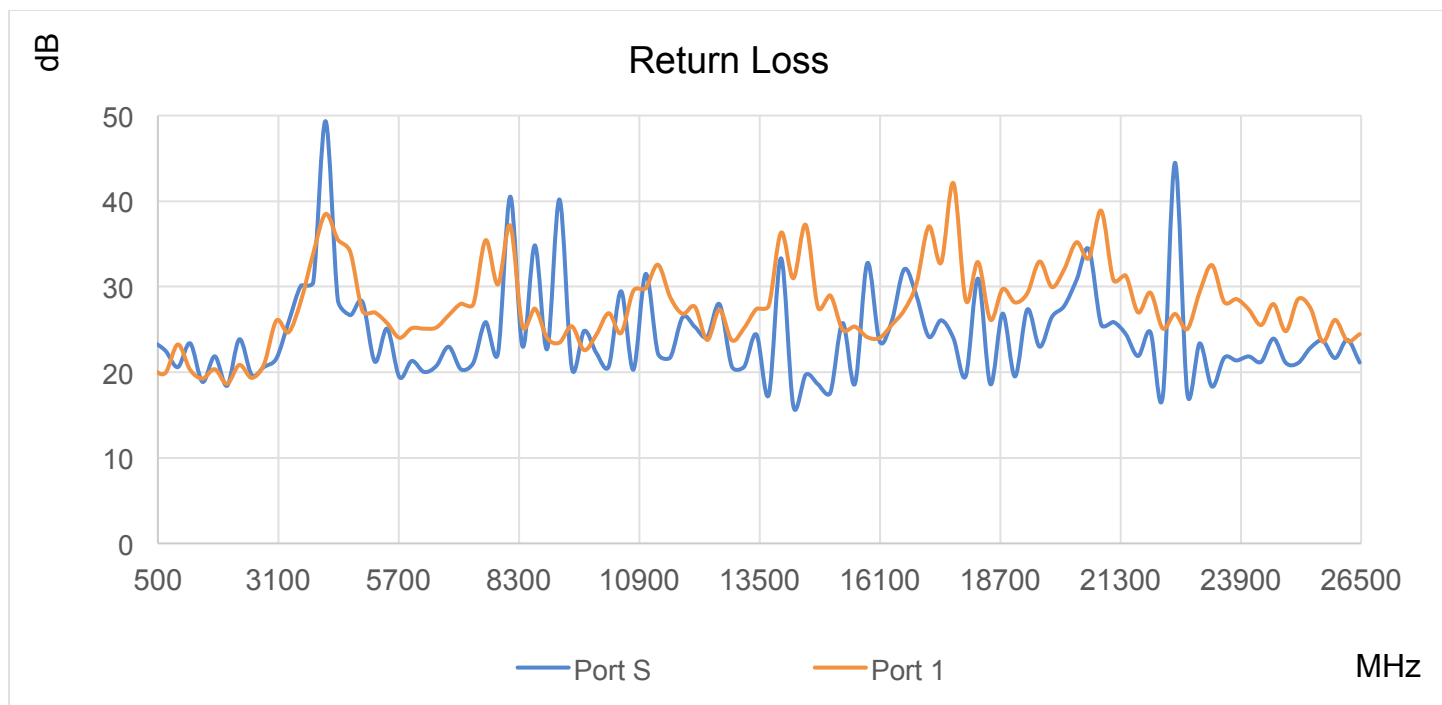
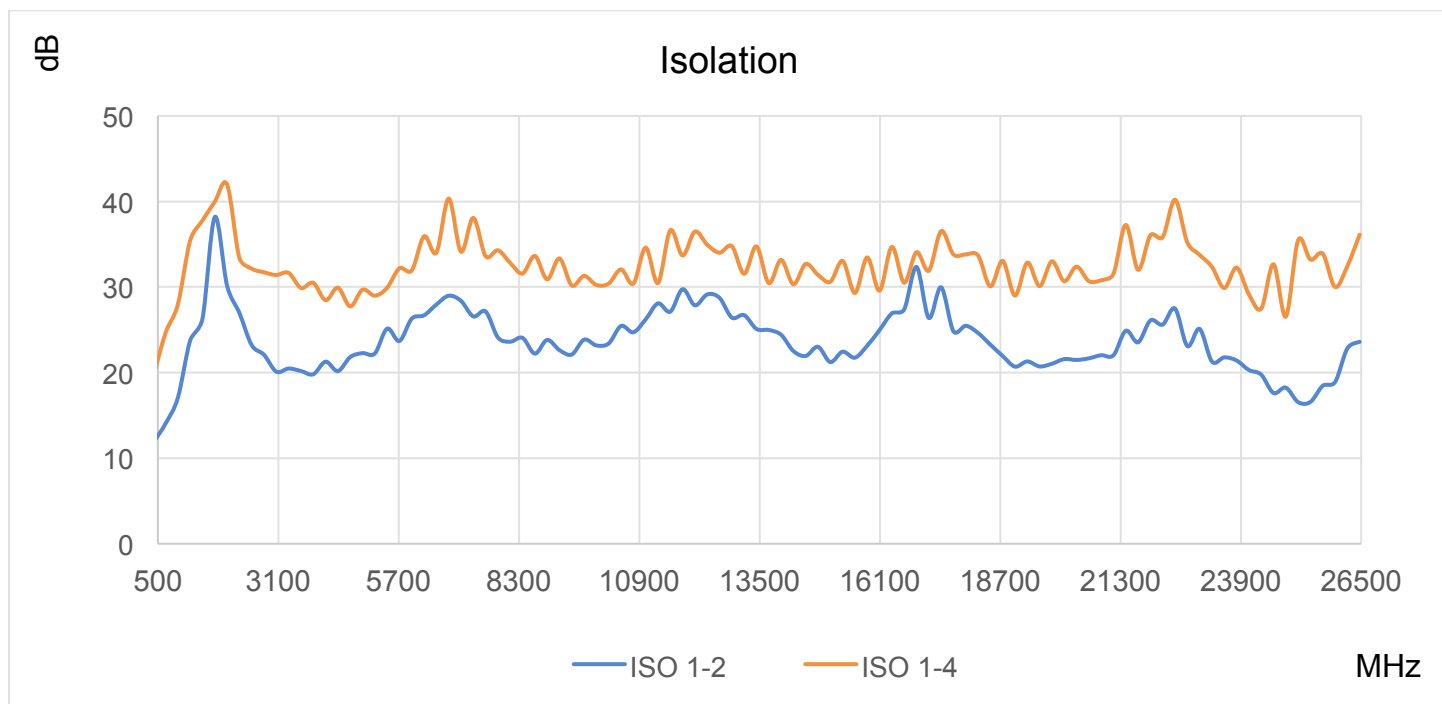
### Materials

|                              |                    |
|------------------------------|--------------------|
| RoHS Compliant <sup>4</sup>  | Yes                |
| REACH Compliant <sup>4</sup> | Yes                |
| Enclosure                    | Aluminum           |
| Connectors                   | Stainless Steel    |
| Contacts                     | Be Cu, Gold Plated |
| Insulators                   | PTFE               |
| Finish                       | Green Paint        |

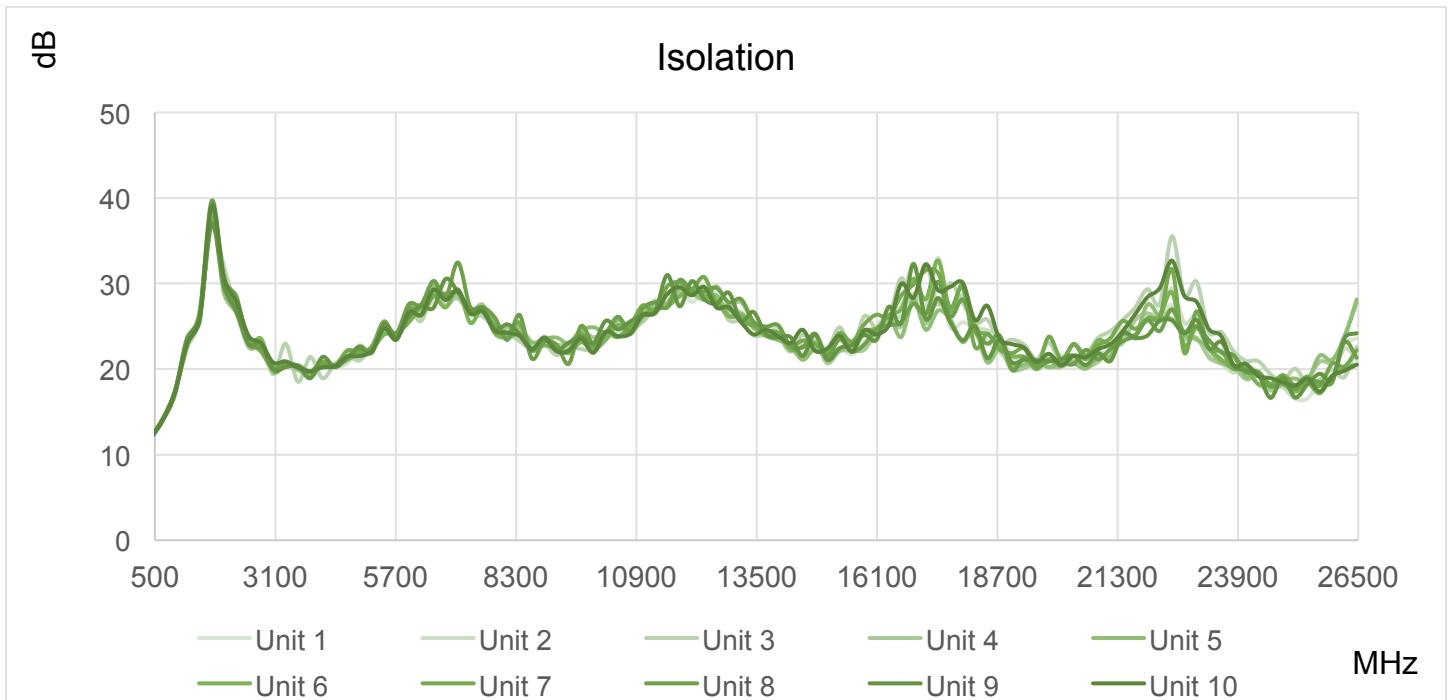
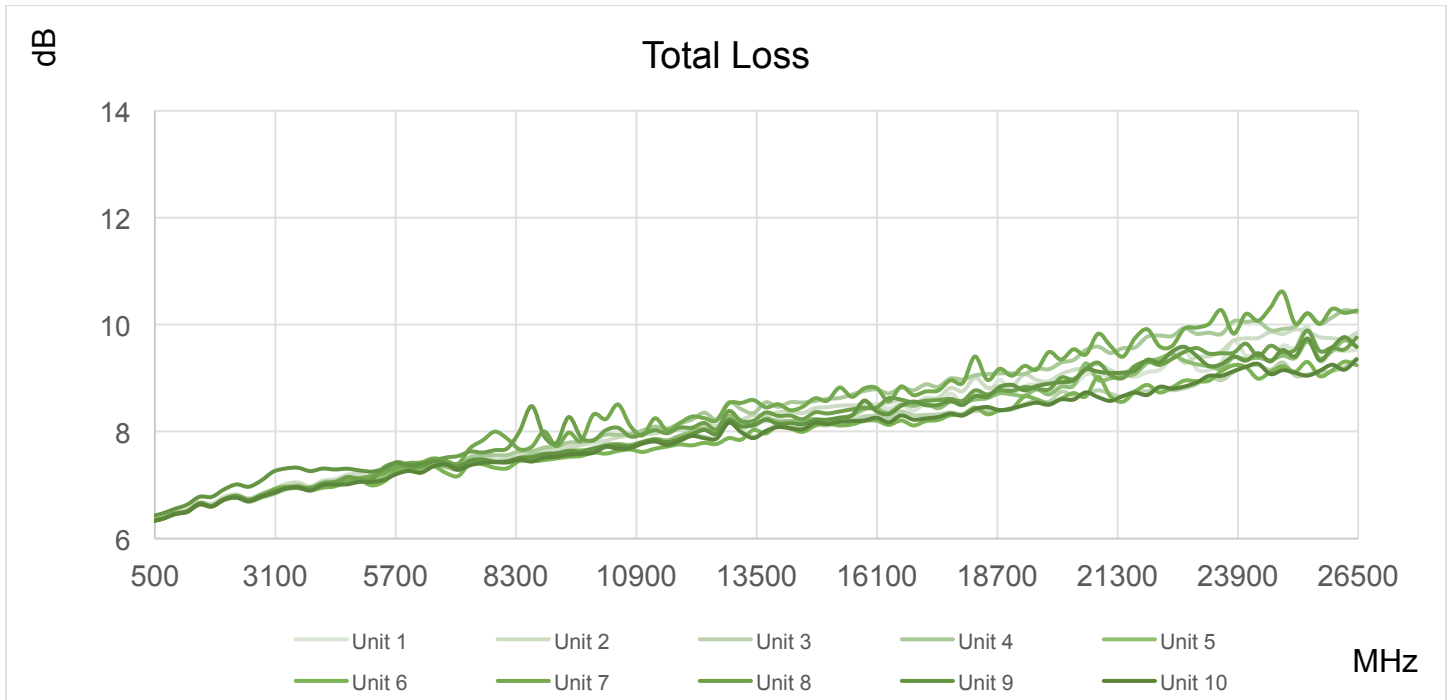
1. With reference to average.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Electrical specifications at +25 °C.
4. To the best of our knowledge at the time of publication.

## Typical Performance at +25 °C





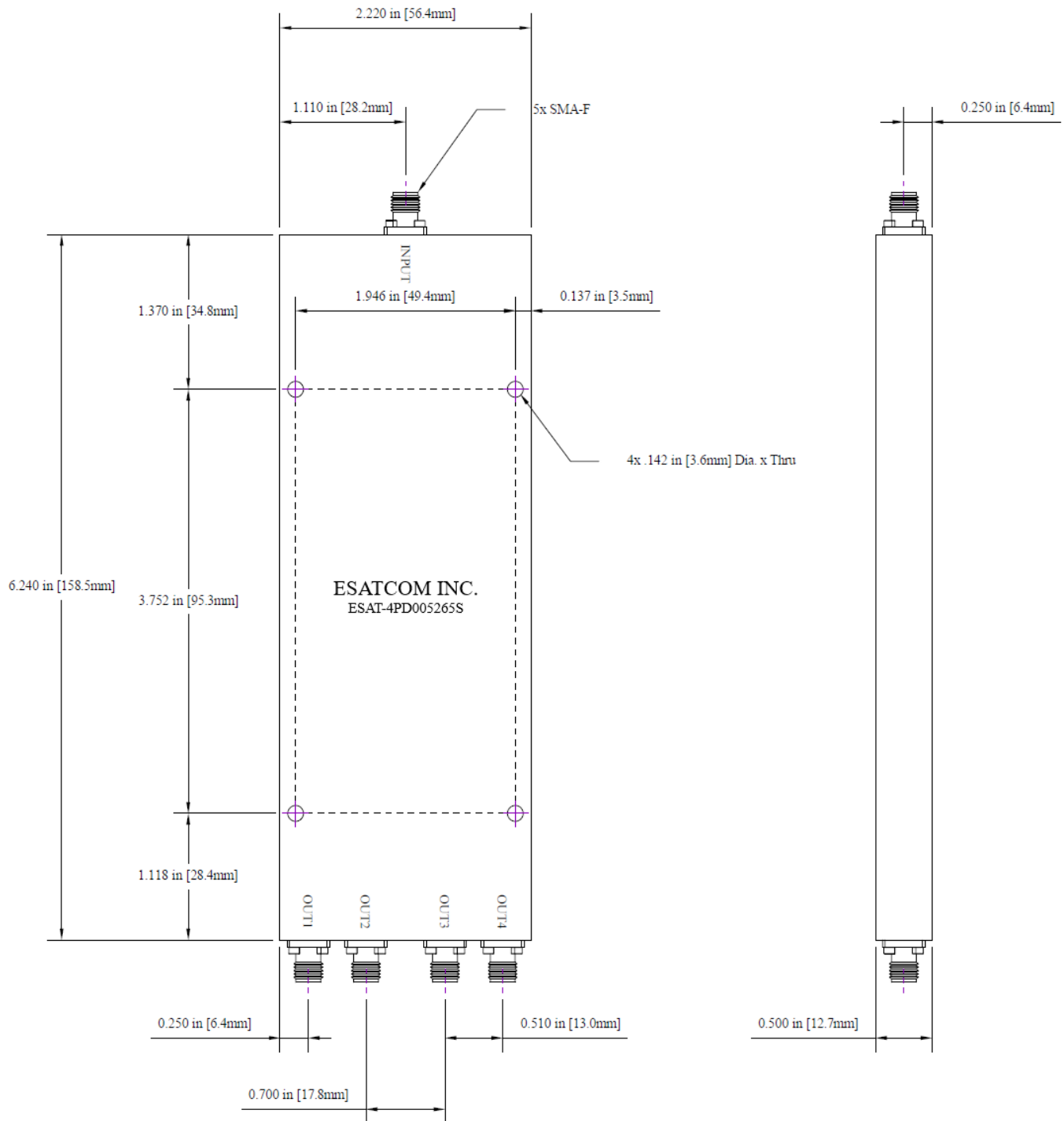
## Repeatability in Production



## Typical Performance Data

| Frequency<br>(MHz) | Return<br>Loss<br>(dB) |        |        | Total Loss<br>(dB) |      | Isolation<br>(dB) |       |
|--------------------|------------------------|--------|--------|--------------------|------|-------------------|-------|
|                    | Port S                 | Port 1 | Port 4 | S-1                | S-4  | 1-2               | 1-4   |
| 500                | 20.48                  | 33.15  | 33.30  | 6.31               | 6.30 | 14.44             | 24.92 |
| 600                | 24.12                  | 26.23  | 25.57  | 6.29               | 6.30 | 16.93             | 27.22 |
| 700                | 21.28                  | 20.63  | 20.28  | 6.33               | 6.34 | 24.95             | 29.68 |
| 800                | 22.41                  | 21.72  | 21.63  | 6.35               | 6.33 | 31.66             | 36.08 |
| 900                | 33.04                  | 28.97  | 29.01  | 6.34               | 6.34 | 26.54             | 47.51 |
| 1000               | 18.28                  | 20.94  | 21.00  | 6.43               | 6.43 | 27.10             | 47.10 |
| 1500               | 31.66                  | 25.76  | 25.88  | 6.44               | 6.44 | 26.12             | 29.95 |
| 2000               | 34.53                  | 24.07  | 24.00  | 6.54               | 6.52 | 20.74             | 31.17 |
| 2500               | 21.78                  | 20.03  | 20.44  | 6.64               | 6.62 | 22.29             | 29.04 |
| 3000               | 39.49                  | 22.95  | 22.53  | 6.69               | 6.66 | 21.16             | 30.25 |
| 3500               | 25.27                  | 23.83  | 23.48  | 6.76               | 6.75 | 22.37             | 31.26 |
| 4000               | 24.08                  | 33.97  | 38.76  | 6.81               | 6.80 | 28.25             | 36.02 |
| 4500               | 26.24                  | 24.49  | 24.09  | 6.87               | 6.85 | 35.10             | 41.19 |
| 5000               | 22.36                  | 20.15  | 19.73  | 6.95               | 6.94 | 25.03             | 33.76 |
| 5500               | 22.30                  | 23.43  | 22.96  | 7.03               | 6.99 | 23.28             | 28.92 |
| 6000               | 25.17                  | 20.80  | 22.15  | 7.04               | 7.04 | 24.51             | 30.14 |
| 6500               | 19.62                  | 31.97  | 31.71  | 7.18               | 7.16 | 25.03             | 31.74 |
| 7000               | 25.97                  | 23.75  | 24.61  | 7.17               | 7.18 | 24.89             | 33.66 |
| 7500               | 20.53                  | 22.13  | 23.56  | 7.27               | 7.26 | 31.24             | 34.25 |
| 8000               | 20.98                  | 20.17  | 21.36  | 7.34               | 7.32 | 28.11             | 41.06 |
| 8500               | 20.39                  | 20.77  | 20.57  | 7.32               | 7.36 | 22.59             | 33.78 |
| 9000               | 18.50                  | 24.86  | 24.26  | 7.42               | 7.42 | 25.65             | 30.86 |
| 9500               | 24.76                  | 20.90  | 21.93  | 7.43               | 7.47 | 21.99             | 29.66 |
| 10000              | 18.15                  | 18.81  | 18.84  | 7.59               | 7.54 | 24.00             | 31.93 |
| 10500              | 17.52                  | 17.03  | 16.73  | 7.60               | 7.61 | 26.42             | 33.30 |
| 11000              | 24.61                  | 20.85  | 20.37  | 7.59               | 7.55 | 28.58             | 41.19 |
| 11500              | 21.70                  | 21.38  | 22.12  | 7.74               | 7.71 | 27.16             | 34.92 |
| 12000              | 29.35                  | 19.68  | 20.59  | 7.71               | 7.67 | 23.47             | 30.19 |
| 12500              | 27.79                  | 19.83  | 20.01  | 7.82               | 7.72 | 21.77             | 34.63 |
| 13000              | 29.00                  | 17.95  | 18.19  | 7.90               | 7.81 | 24.25             | 31.45 |
| 13500              | 21.90                  | 20.27  | 21.82  | 8.03               | 7.83 | 25.22             | 30.44 |
| 14000              | 25.55                  | 21.99  | 25.05  | 8.08               | 7.93 | 30.12             | 38.85 |
| 14500              | 25.77                  | 20.85  | 22.03  | 8.09               | 7.95 | 35.83             | 46.70 |
| 15000              | 23.07                  | 20.94  | 20.24  | 8.17               | 8.02 | 22.33             | 31.97 |
| 15500              | 29.87                  | 17.84  | 18.14  | 8.21               | 8.09 | 23.37             | 29.56 |
| 16000              | 30.12                  | 21.22  | 24.28  | 8.25               | 8.11 | 19.91             | 28.52 |
| 16500              | 33.60                  | 24.33  | 24.82  | 8.27               | 8.21 | 26.10             | 31.70 |
| 17000              | 21.04                  | 26.76  | 25.45  | 8.47               | 8.37 | 25.59             | 38.13 |
| 17500              | 21.99                  | 20.48  | 23.33  | 8.54               | 8.36 | 36.26             | 37.67 |
| 18000              | 22.52                  | 22.54  | 23.73  | 8.61               | 8.43 | 24.92             | 33.79 |

## Outline Dimensions



Outline drawing: OL-4300



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Dimensions are in inches, [mm] shown for convenience.  
Tolerances on 2-pl decimals:  $\pm .03$ . 3-pl decimals:  $\pm .015$ .

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