

# Power Splitter/Combiner

2 Way-0° Resistive 50Ω DC to 10000 MHz

## ZFRSC-14-S+



Generic photo used for illustration purposes only

CASE STYLE: JJJ245

Connectors Model

SMA ZFRSC-14-S+

BRACKET (OPTION "B")

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

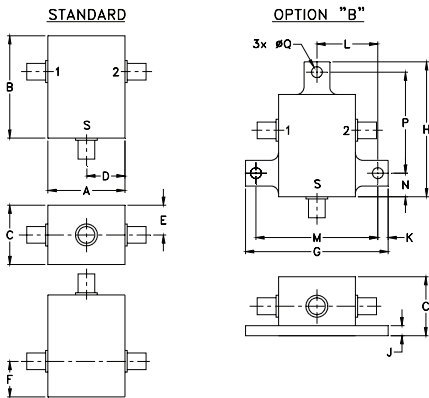
### Maximum Ratings

|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| Operating Temperature                                           | -55°C to 100°C |
| Storage Temperature                                             | -55°C to 100°C |
| Power Input (as a splitter)                                     | 0.16W max.     |
| Internal Dissipation                                            | 0.08W max.     |
| Permanent damage may occur if any of these limits are exceeded. |                |

### Coaxial Connections

|          |   |
|----------|---|
| SUM PORT | S |
| PORT 1   | 1 |
| PORT 2   | 2 |

### Outline Drawing



### Outline Dimensions (inch/mm)

| A     | B    | C      | D     | E    | F     | G     | H     |
|-------|------|--------|-------|------|-------|-------|-------|
| 0.75  | 1.00 | 0.58   | 0.38  | 0.29 | 0.35  | 1.39  | 1.32  |
| 19.05 | 25.4 | 14.732 | 9.65  | 7.37 | 8.89  | 35.31 | 33.53 |
| J     | K    | L      | M     | N    | P     | Q     | wt    |
| 0.10  | 0.10 | 0.595  | 1.19  | 0.23 | 0.995 | 0.106 | grams |
| 2.54  | 2.54 | 15.11  | 30.23 | 5.84 | 25.27 | 2.69  | 22.0  |

### Electrical Schematic



### Features

- very wideband, DC to 10000 MHz
- very good phase unbalance, 2 deg. typ.
- excellent amplitude unbalance, 0.2 dB typ.
- rugged shielded case

### Applications

- laboratory
- test set-ups

### Electrical Specifications at 25°C

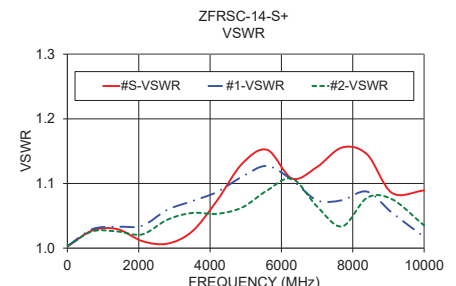
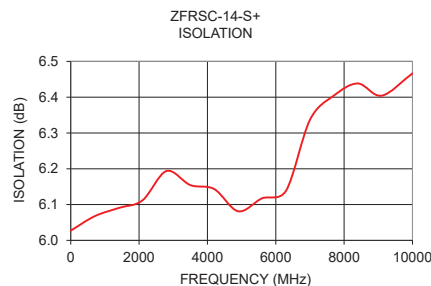
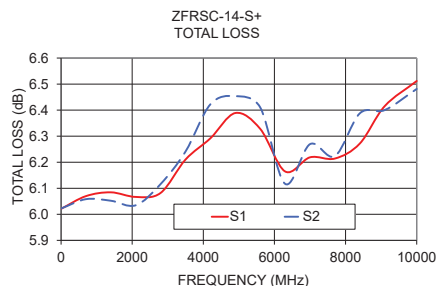
| Parameter                          | Frequency (MHz) | Min. | Typ. | Max.  | Unit   |
|------------------------------------|-----------------|------|------|-------|--------|
| <b>Frequency Range</b>             |                 | DC   |      | 10000 | MHz    |
| <b>Insertion Loss Above 6.0 dB</b> | DC - 6000       | —    | 0.3  | 0.7   | dB     |
|                                    | 6000 - 10000    | —    | 0.7  | 1.0   |        |
| <b>Isolation</b>                   | DC - 6000       | —    | 6.2  | —     | dB     |
|                                    | 6000 - 10000    | —    | 6.5  | —     |        |
| <b>Phase Unbalance</b>             | DC - 6000       | —    | 2    | 5     | Degree |
|                                    | 6000 - 10000    | —    | 4    | 8     |        |
| <b>Amplitude Unbalance</b>         | DC - 6000       | —    | 0.2  | 0.5   | dB     |
|                                    | 6000 - 10000    | —    | 0.3  | 0.7   |        |
| <b>VSWR (Port S)</b>               | DC - 6000       | —    | 1.15 | —     | :1     |
|                                    | 6000 - 10000    | —    | 1.20 | —     |        |
| <b>VSWR (Port 1-4)</b>             | DC - 6000       | —    | 1.10 | —     | :1     |
|                                    | 6000 - 10000    | —    | 1.10 | —     |        |

This is a resistive power divider to enable frequency coverage from DC to the highest rated frequency. Since resistive power divider do not provide a high degree of isolation (basically isolation equals the insertion loss between ports).

### Typical Performance Data

| Frequency (MHz) | Total Loss <sup>1</sup> (dB) |      | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|--------|--------|--------|
|                 | S-1                          | S-2  |                          |                |                        |        |        |        |
| 1               | 6.02                         | 6.02 | 0.00                     | 6.03           | 0.01                   | 1.00   | 1.00   | 1.00   |
| 700             | 6.07                         | 6.06 | 0.01                     | 6.07           | 0.29                   | 1.03   | 1.03   | 1.03   |
| 1400            | 6.08                         | 6.05 | 0.03                     | 6.09           | 0.39                   | 1.03   | 1.03   | 1.03   |
| 2100            | 6.07                         | 6.03 | 0.03                     | 6.11           | 0.37                   | 1.01   | 1.03   | 1.02   |
| 2800            | 6.08                         | 6.12 | 0.03                     | 6.19           | 0.68                   | 1.01   | 1.06   | 1.04   |
| 3500            | 6.21                         | 6.24 | 0.03                     | 6.15           | 1.00                   | 1.03   | 1.07   | 1.05   |
| 4200            | 6.29                         | 6.42 | 0.13                     | 6.14           | 1.34                   | 1.07   | 1.09   | 1.05   |
| 4900            | 6.39                         | 6.45 | 0.06                     | 6.08           | 1.86                   | 1.13   | 1.11   | 1.06   |
| 5600            | 6.33                         | 6.41 | 0.08                     | 6.12           | 2.05                   | 1.15   | 1.13   | 1.09   |
| 6300            | 6.16                         | 6.12 | 0.05                     | 6.14           | 2.49                   | 1.11   | 1.11   | 1.11   |
| 7000            | 6.22                         | 6.27 | 0.05                     | 6.34           | 2.65                   | 1.13   | 1.07   | 1.06   |
| 7700            | 6.21                         | 6.22 | 0.01                     | 6.40           | 2.16                   | 1.16   | 1.07   | 1.03   |
| 8400            | 6.27                         | 6.39 | 0.12                     | 6.44           | 3.89                   | 1.15   | 1.09   | 1.08   |
| 9100            | 6.42                         | 6.40 | 0.02                     | 6.40           | 1.75                   | 1.09   | 1.05   | 1.08   |
| 10000           | 6.51                         | 6.48 | 0.03                     | 6.47           | 3.39                   | 1.09   | 1.02   | 1.04   |

1. Total Loss = Insertion Loss + 6dB splitter loss.



#### Notes

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REV. B  
M175652  
ED-14980/1  
ZFRSC-14+  
WZ/CP/AM  
190801

# 2 Way-0° Resistive Power Splitter/Combiner

ZFRSC-14+

## Typical Performance Data

| FREQ.<br>(MHz) | TOTAL LOSS <sup>1</sup><br>(dB) |      | AMP.<br>UNBAL.<br>(dB) | ISOLATION<br>(dB) | PHASE<br>UNBAL.<br>(Deg.) | FREQ.<br>(MHz) | VSWR<br>(:1) |      |      |
|----------------|---------------------------------|------|------------------------|-------------------|---------------------------|----------------|--------------|------|------|
|                | S-1                             | S-2  |                        |                   |                           |                | S            | 1    | 2    |
| 1.0            | 6.02                            | 6.02 | 0.00                   | 6.03              | 0.01                      | 1.0            | 1.00         | 1.00 | 1.00 |
| 10.0           | 6.03                            | 6.03 | 0.00                   | 6.02              | 0.03                      | 10.0           | 1.00         | 1.00 | 1.00 |
| 50.0           | 6.04                            | 6.04 | 0.00                   | 6.02              | 0.07                      | 50.0           | 1.01         | 1.01 | 1.01 |
| 100.0          | 6.04                            | 6.04 | 0.00                   | 6.02              | 0.11                      | 100.0          | 1.01         | 1.01 | 1.01 |
| 200.0          | 6.06                            | 6.05 | 0.01                   | 6.03              | 0.09                      | 200.0          | 1.01         | 1.01 | 1.01 |
| 400.0          | 6.07                            | 6.05 | 0.02                   | 6.04              | 0.22                      | 400.0          | 1.02         | 1.02 | 1.02 |
| 600.0          | 6.07                            | 6.06 | 0.01                   | 6.06              | 0.25                      | 600.0          | 1.03         | 1.03 | 1.02 |
| 700.0          | 6.07                            | 6.06 | 0.01                   | 6.07              | 0.29                      | 700.0          | 1.03         | 1.03 | 1.03 |
| 800.0          | 6.07                            | 6.06 | 0.01                   | 6.07              | 0.28                      | 800.0          | 1.03         | 1.03 | 1.03 |
| 1000.0         | 6.07                            | 6.06 | 0.01                   | 6.07              | 0.30                      | 1000.0         | 1.03         | 1.03 | 1.03 |
| 1200.0         | 6.08                            | 6.06 | 0.02                   | 6.08              | 0.32                      | 1200.0         | 1.03         | 1.03 | 1.03 |
| 1400.0         | 6.08                            | 6.05 | 0.03                   | 6.09              | 0.39                      | 1400.0         | 1.03         | 1.03 | 1.03 |
| 1600.0         | 6.07                            | 6.04 | 0.03                   | 6.11              | 0.48                      | 1600.0         | 1.02         | 1.03 | 1.02 |
| 1800.0         | 6.06                            | 6.03 | 0.03                   | 6.11              | 0.46                      | 1800.0         | 1.01         | 1.03 | 1.02 |
| 2000.0         | 6.06                            | 6.03 | 0.02                   | 6.11              | 0.41                      | 2000.0         | 1.01         | 1.03 | 1.02 |
| 2200.0         | 6.07                            | 6.04 | 0.03                   | 6.12              | 0.39                      | 2200.0         | 1.01         | 1.04 | 1.03 |
| 2400.0         | 6.09                            | 6.06 | 0.03                   | 6.14              | 0.48                      | 2400.0         | 1.01         | 1.04 | 1.03 |
| 2600.0         | 6.09                            | 6.09 | 0.00                   | 6.18              | 0.58                      | 2600.0         | 1.01         | 1.05 | 1.04 |
| 2800.0         | 6.08                            | 6.12 | 0.03                   | 6.19              | 0.68                      | 2800.0         | 1.01         | 1.06 | 1.04 |
| 3000.0         | 6.08                            | 6.14 | 0.05                   | 6.20              | 0.82                      | 3000.0         | 1.00         | 1.07 | 1.05 |
| 3200.0         | 6.12                            | 6.17 | 0.05                   | 6.18              | 0.80                      | 3200.0         | 1.00         | 1.07 | 1.06 |
| 3400.0         | 6.18                            | 6.22 | 0.04                   | 6.16              | 0.92                      | 3400.0         | 1.02         | 1.07 | 1.06 |
| 3600.0         | 6.24                            | 6.26 | 0.02                   | 6.15              | 1.15                      | 3600.0         | 1.03         | 1.07 | 1.05 |
| 3800.0         | 6.27                            | 6.31 | 0.04                   | 6.16              | 1.39                      | 3800.0         | 1.05         | 1.08 | 1.06 |
| 4000.0         | 6.28                            | 6.37 | 0.09                   | 6.15              | 1.40                      | 4000.0         | 1.06         | 1.08 | 1.06 |
| 4200.0         | 6.29                            | 6.42 | 0.13                   | 6.14              | 1.34                      | 4200.0         | 1.07         | 1.09 | 1.05 |
| 4400.0         | 6.33                            | 6.46 | 0.13                   | 6.14              | 1.31                      | 4400.0         | 1.10         | 1.09 | 1.05 |
| 4600.0         | 6.39                            | 6.48 | 0.10                   | 6.13              | 1.59                      | 4600.0         | 1.12         | 1.09 | 1.07 |
| 4800.0         | 6.41                            | 6.47 | 0.06                   | 6.10              | 1.81                      | 4800.0         | 1.13         | 1.10 | 1.07 |
| 5000.0         | 6.36                            | 6.44 | 0.07                   | 6.07              | 1.84                      | 5000.0         | 1.12         | 1.12 | 1.07 |
| 5200.0         | 6.33                            | 6.41 | 0.08                   | 6.07              | 1.76                      | 5200.0         | 1.12         | 1.12 | 1.09 |
| 5400.0         | 6.31                            | 6.41 | 0.10                   | 6.10              | 1.76                      | 5400.0         | 1.14         | 1.13 | 1.10 |
| 5600.0         | 6.33                            | 6.41 | 0.08                   | 6.12              | 2.05                      | 5600.0         | 1.15         | 1.13 | 1.09 |
| 5800.0         | 6.34                            | 6.36 | 0.02                   | 6.10              | 2.46                      | 5800.0         | 1.12         | 1.12 | 1.09 |
| 6000.0         | 6.28                            | 6.26 | 0.02                   | 6.08              | 2.57                      | 6000.0         | 1.10         | 1.12 | 1.12 |
| 6200.0         | 6.20                            | 6.15 | 0.05                   | 6.09              | 2.51                      | 6200.0         | 1.11         | 1.11 | 1.13 |
| 6400.0         | 6.13                            | 6.11 | 0.02                   | 6.17              | 2.32                      | 6400.0         | 1.09         | 1.10 | 1.09 |
| 6600.0         | 6.17                            | 6.16 | 0.01                   | 6.24              | 2.15                      | 6600.0         | 1.06         | 1.09 | 1.07 |
| 6800.0         | 6.24                            | 6.22 | 0.02                   | 6.29              | 2.13                      | 6800.0         | 1.09         | 1.09 | 1.09 |
| 6900.0         | 6.26                            | 6.26 | 0.00                   | 6.31              | 2.33                      | 6900.0         | 1.11         | 1.08 | 1.07 |
| 7000.0         | 6.22                            | 6.27 | 0.05                   | 6.34              | 2.65                      | 7000.0         | 1.13         | 1.07 | 1.06 |
| 7200.0         | 6.14                            | 6.27 | 0.13                   | 6.38              | 3.17                      | 7200.0         | 1.10         | 1.07 | 1.06 |
| 7400.0         | 6.10                            | 6.25 | 0.15                   | 6.45              | 3.17                      | 7400.0         | 1.09         | 1.07 | 1.08 |
| 7600.0         | 6.15                            | 6.23 | 0.08                   | 6.43              | 2.41                      | 7600.0         | 1.14         | 1.07 | 1.06 |
| 7800.0         | 6.29                            | 6.23 | 0.06                   | 6.38              | 2.14                      | 7800.0         | 1.15         | 1.08 | 1.03 |
| 8000.0         | 6.39                            | 6.23 | 0.17                   | 6.31              | 2.59                      | 8000.0         | 1.11         | 1.09 | 1.06 |
| 8200.0         | 6.39                            | 6.28 | 0.11                   | 6.34              | 3.24                      | 8200.0         | 1.09         | 1.09 | 1.09 |
| 8400.0         | 6.27                            | 6.39 | 0.12                   | 6.44              | 3.89                      | 8400.0         | 1.15         | 1.09 | 1.08 |
| 8600.0         | 6.26                            | 6.44 | 0.18                   | 6.49              | 3.50                      | 8600.0         | 1.16         | 1.08 | 1.06 |
| 8800.0         | 6.31                            | 6.44 | 0.14                   | 6.47              | 2.42                      | 8800.0         | 1.12         | 1.07 | 1.08 |
| 9000.0         | 6.39                            | 6.41 | 0.02                   | 6.41              | 1.63                      | 9000.0         | 1.08         | 1.06 | 1.07 |
| 9200.0         | 6.47                            | 6.40 | 0.08                   | 6.38              | 2.19                      | 9200.0         | 1.10         | 1.06 | 1.07 |
| 9400.0         | 6.51                            | 6.43 | 0.08                   | 6.40              | 3.06                      | 9400.0         | 1.14         | 1.06 | 1.07 |
| 9600.0         | 6.42                            | 6.46 | 0.04                   | 6.39              | 3.57                      | 9600.0         | 1.13         | 1.05 | 1.06 |
| 9800.0         | 6.42                            | 6.49 | 0.07                   | 6.43              | 3.84                      | 9800.0         | 1.09         | 1.04 | 1.05 |
| 10000.0        | 6.51                            | 6.48 | 0.03                   | 6.47              | 3.39                      | 10000.0        | 1.09         | 1.02 | 1.04 |



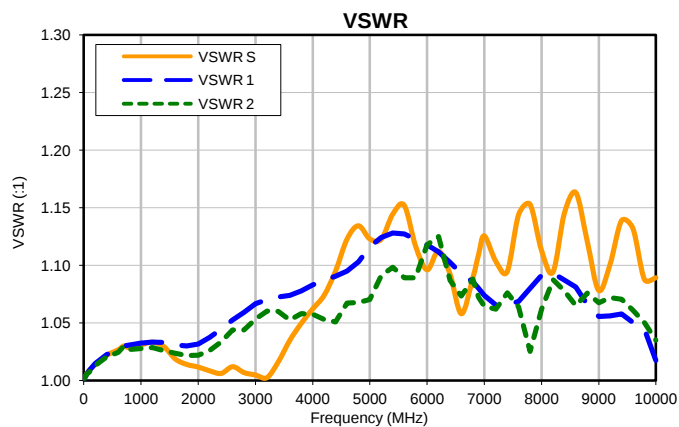
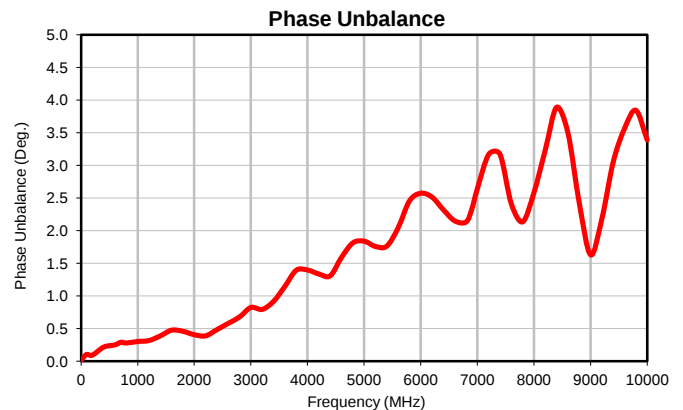
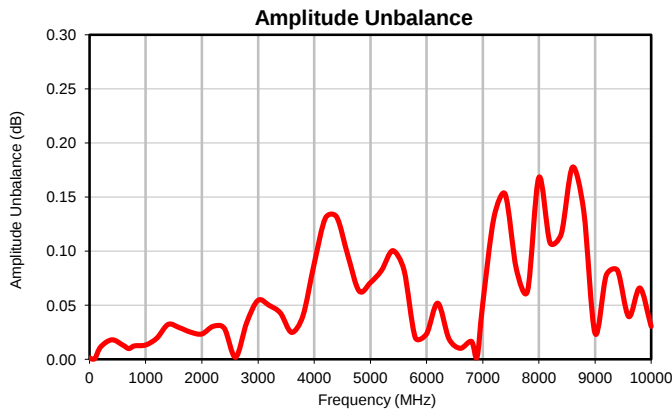
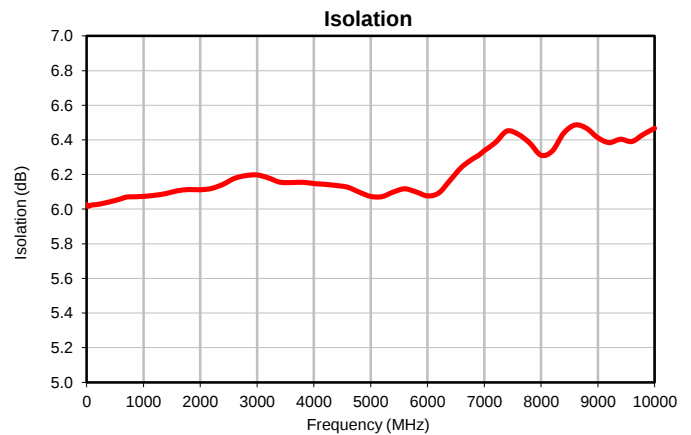
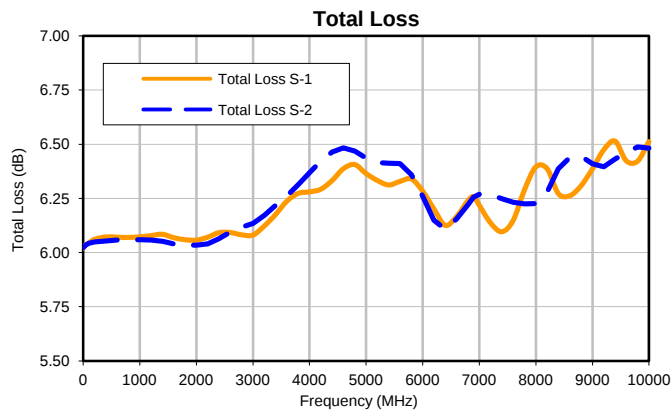
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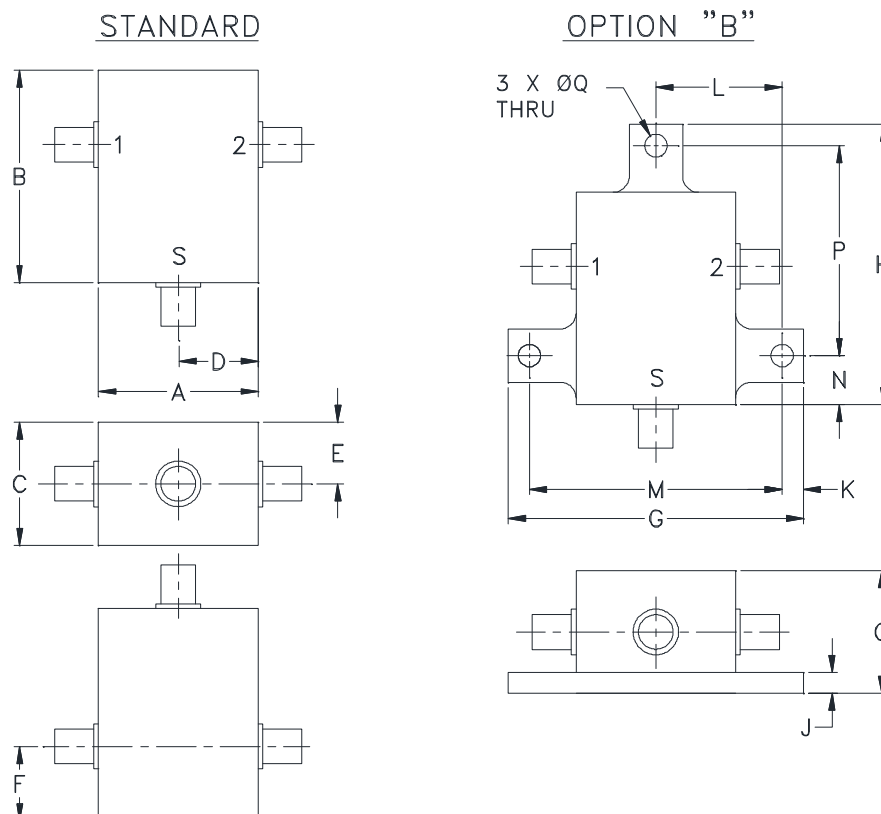
IF/RF MICROWAVE COMPONENTS

REV. OR  
ZFRSC-14+  
11/3/2014  
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## Typical Performance Curves



### Outline Dimensions



| CASE#  | A              | B               | C              | D             | E             | F             | G               | H               | J             | K             | L               |
|--------|----------------|-----------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| JJJ245 | .75<br>(19.05) | 1.00<br>(25.40) | .58<br>(14.73) | .38<br>(9.65) | .29<br>(7.37) | .35<br>(8.89) | 1.39<br>(35.31) | 1.32<br>(33.53) | .10<br>(2.54) | .10<br>(2.54) | .595<br>(15.11) |

| CASE#  | M                | N             | P               | Q              | WT. GRAM |
|--------|------------------|---------------|-----------------|----------------|----------|
| JJJ245 | 1.190<br>(30.23) | .23<br>(5.84) | .995<br>(25.27) | .106<br>(2.69) | 22.0     |

Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm .03$ ; 3 Pl.  $\pm .015$

#### Notes:

- Case material: Aluminum alloy.
- Case finish:  
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Mounting bracket available upon request. Add suffix B to part number.



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