

# Coaxial Switch

## 50Ω SPDT Pin Diode, Reflective TTL Driver 10 to 3000 MHz

# ZSDR-230+



Generic photo used for illustration purposes only

CASE STYLE: CCC127

|            |           |
|------------|-----------|
| Connectors | Model     |
| SMA        | ZSDR-230+ |

**+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                 | L(+20 dBm), M(+28 dBm), U(+30 dBm) |
| Supply V              | +6V max.                           |

Permanent damage may occur if any of these limits are exceeded.

### Coaxial/Pin Connections

|          |      |
|----------|------|
| RF IN    | COM  |
| RF OUT 1 | RF-1 |
| RF OUT 2 | RF-2 |
| TTL-IN   | TTL  |
| +5V      | +5V  |

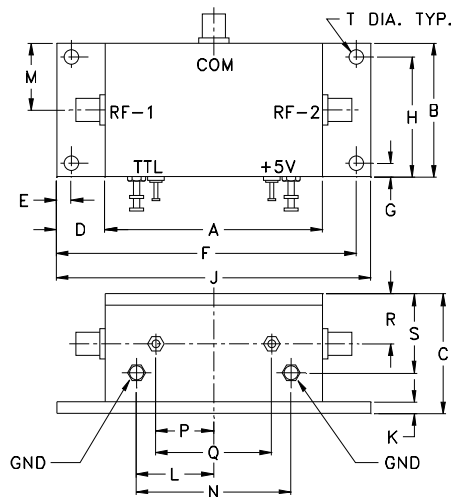
### Features

- wideband, 10 to 3000 MHz
- high isolation, 40 dB typ.

### Applications

- test set-ups
- antenna switching
- satellite communications

### Outline Drawing



### Outline Dimensions (inch/mm)

|       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A     | B     | C     | D     | E     | F     | G     | H     | J     |
| 2.25  | 1.38  | 1.24  | .50   | .150  | 3.100 | .138  | 1.238 | 3.25  |
| 57.15 | 35.05 | 31.50 | 12.70 | 3.81  | 78.74 | 3.51  | 31.45 | 82.55 |
| K     | L     | M     | N     | P     | Q     | R     | S     | T     |
| .12   | .80   | .69   | 1.60  | .60   | 1.200 | .52   | .82   | .150  |
| 3.05  | 20.32 | 17.53 | 40.64 | 15.24 | 30.48 | 13.21 | 20.83 | 3.81  |
|       |       |       |       |       |       |       |       | wt    |
|       |       |       |       |       |       |       |       | 80.0  |

### Switch Electrical Specifications

| MODEL NO. | FREQ. (MHz) |       | INSERTION LOSS (dB) |          |            |          | IN-OUT ISOLATION (dB) |         |         |         |         |         |      |      |
|-----------|-------------|-------|---------------------|----------|------------|----------|-----------------------|---------|---------|---------|---------|---------|------|------|
|           | $f_l$       | $f_u$ | Low band            |          | Upper band |          | Frequency Band        |         |         |         |         |         |      |      |
|           |             |       | $I_w$               | Max.     | U          | Max.     | L                     | M       | U       |         | Min.    | Min.    | Typ. | Min. |
| ZSDR-230+ | 10          | 3000  | Typ. 1.3            | Max. 1.9 | Typ. 1.8   | Max. 2.7 | Typ. 60               | Min. 40 | Typ. 40 | Min. 28 | Typ. 35 | Min. 22 |      |      |

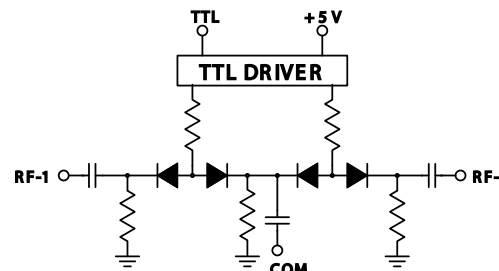
L= low range( $f_l$  to 10  $f_l$ )

M=mid range(10  $f_l$  to  $f_u/2$ )  
U=upper range ( $f_l/2$  to  $f_u$ )

### Additional Specifications

|                             |  |
|-----------------------------|--|
| VSWR ("ON" STATE)           | 1.3 Typ., 1.9 Max.                       |
| SWITCHING TIME ( $\mu$ SEC) | 2.0 Typ., 4.0 Max.                       |
| SUPPLY VOLTAGE              | +5V                                      |
| SUPPLY CURRENT              | 10mA Max.                                |
| TTL INPUT HIGH THRESHOLD    | 2V Min.                                  |
| TTL INPUT LOW THRESHOLD     | 0.8V Max.                                |
| 1 dB COMPRESSION            | 10 to 100 MHz<br>Above 100 MHz           |
|                             | +6 increasing to +19 dBm<br>+19 dBm min. |

### Control Logic



| TTL LOGIC |          |          |
|-----------|----------|----------|
| TTL 1:    | RF-1/OFF | RF-2/ON  |
| TTL 0:    | RF-1/ON  | RF-2/OFF |

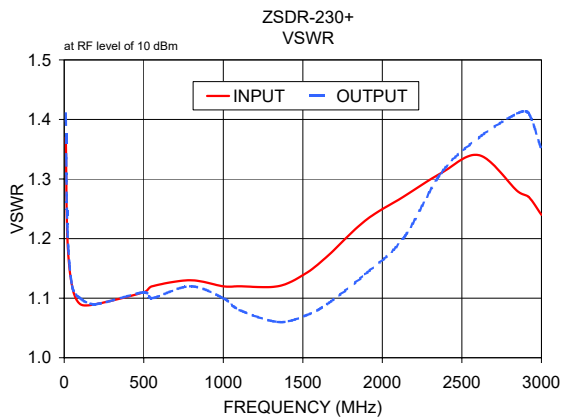
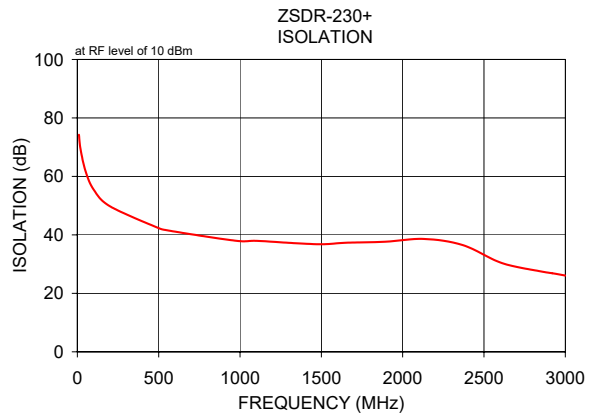
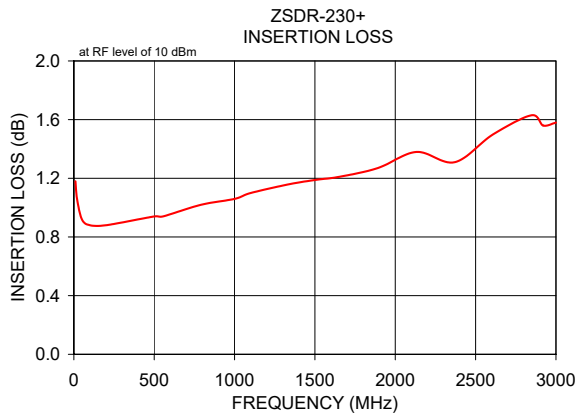
### Notes

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## Typical Performance Data

| FREQ.<br>(MHz) | ON<br>(TTL LOW @ 0V)<br>IN-OUT |          | INSERTION LOSS<br>(dB)<br>AMP. UNBAL. |          | OFF<br>(TTL HIGH @ 5V)<br>IN-OUT |          | ISOLATION (dB)<br>DELTA |          | IN        | VSWR<br>OUT (RF 1) |           |
|----------------|--------------------------------|----------|---------------------------------------|----------|----------------------------------|----------|-------------------------|----------|-----------|--------------------|-----------|
|                | $\bar{x}$                      | $\sigma$ | $\bar{x}$                             | $\sigma$ | $\bar{x}$                        | $\sigma$ | $\bar{x}$               | $\sigma$ |           | $\bar{x}$          | ON        |
|                |                                |          |                                       |          |                                  |          |                         |          | $\bar{x}$ |                    | $\bar{x}$ |
| 10.00          | 1.18                           | 0.04     | 0.03                                  | 0.02     | 74.26                            | 1.60     | 1.14                    | 0.39     | 1.37      | 1.41               | 31.26     |
| 20.00          | 1.06                           | 0.05     | 0.05                                  | 0.05     | 69.20                            | 1.46     | 1.45                    | 1.51     | 1.20      | 1.22               | 30.31     |
| 50.00          | 0.92                           | 0.03     | 0.02                                  | 0.01     | 61.84                            | 1.14     | 1.60                    | 1.01     | 1.12      | 1.12               | 30.07     |
| 100.00         | 0.88                           | 0.03     | 0.02                                  | 0.01     | 55.48                            | 0.61     | 0.75                    | 0.63     | 1.09      | 1.10               | 30.07     |
| 200.00         | 0.88                           | 0.02     | 0.02                                  | 0.01     | 49.81                            | 0.72     | 0.64                    | 0.70     | 1.09      | 1.09               | 30.49     |
| 500.00         | 0.94                           | 0.02     | 0.02                                  | 0.01     | 42.32                            | 0.56     | 0.53                    | 0.77     | 1.11      | 1.11               | 29.97     |
| 552.91         | 0.94                           | 0.02     | 0.01                                  | 0.01     | 41.56                            | 0.50     | 0.61                    | 0.74     | 1.12      | 1.10               | 28.88     |
| 792.00         | 1.02                           | 0.01     | 0.01                                  | 0.01     | 39.41                            | 0.46     | 0.68                    | 0.76     | 1.13      | 1.12               | 26.27     |
| 1000.00        | 1.06                           | 0.01     | 0.01                                  | 0.01     | 37.86                            | 0.40     | 0.67                    | 0.71     | 1.12      | 1.10               | 24.84     |
| 1102.82        | 1.10                           | 0.01     | 0.01                                  | 0.01     | 37.96                            | 0.40     | 0.70                    | 0.73     | 1.12      | 1.08               | 22.83     |
| 1341.91        | 1.16                           | 0.01     | 0.02                                  | 0.01     | 37.13                            | 0.42     | 0.94                    | 0.69     | 1.12      | 1.06               | 21.66     |
| 1509.27        | 1.19                           | 0.02     | 0.02                                  | 0.01     | 36.81                            | 0.45     | 0.96                    | 0.75     | 1.14      | 1.07               | 20.69     |
| 1652.73        | 1.21                           | 0.01     | 0.02                                  | 0.01     | 37.32                            | 0.53     | 0.89                    | 0.79     | 1.17      | 1.09               | 19.92     |
| 1891.82        | 1.27                           | 0.02     | 0.02                                  | 0.02     | 37.64                            | 0.67     | 1.82                    | 0.71     | 1.23      | 1.14               | 19.28     |
| 2130.91        | 1.38                           | 0.02     | 0.02                                  | 0.03     | 38.60                            | 1.13     | 0.82                    | 0.94     | 1.27      | 1.20               | 24.87     |
| 2370.00        | 1.31                           | 0.02     | 0.03                                  | 0.03     | 36.48                            | 3.02     | 2.00                    | 1.04     | 1.31      | 1.31               | 19.46     |
| 2609.09        | 1.50                           | 0.04     | 0.06                                  | 0.03     | 30.37                            | 2.46     | 0.49                    | 0.56     | 1.34      | 1.37               | 11.80     |
| 2848.18        | 1.63                           | 0.06     | 0.04                                  | 0.02     | 27.51                            | 2.19     | 0.30                    | 0.21     | 1.28      | 1.41               | 10.49     |
| 2919.91        | 1.56                           | 0.04     | 0.03                                  | 0.02     | 26.87                            | 2.12     | 0.56                    | 0.28     | 1.27      | 1.41               | 9.46      |
| 3000.00        | 1.58                           | 0.04     | 0.05                                  | 0.03     | 26.08                            | 2.02     | 0.86                    | 0.48     | 1.24      | 1.35               | 11.35     |



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