

Coaxial Switch

50Ω SPDT, Absorptive DC to 4.6 GHz

ZFSWA-2-46



CASE STYLE: G144

| Connectors | Model | Price | Qty. |
|------------|------------|---------|-------|
| SMA | ZFSWA-2-46 | \$89.95 | (1-9) |

Maximum Ratings

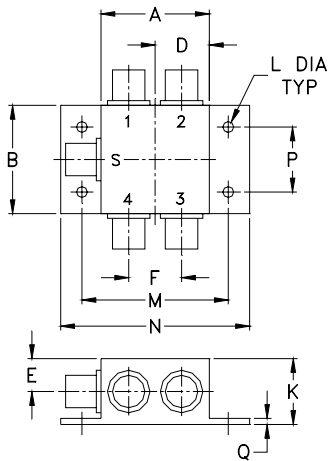
| | |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 150°C |
| Input Power | see Note 1 |
| Control V | see Note 2 |

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

Coaxial Connections

| | |
|-----------|---|
| RF IN | S |
| RF OUT 1 | 3 |
| RF OUT 2 | 2 |
| CONTROL 1 | 4 |
| CONTROL 2 | 1 |

Outline Drawing



Outline Dimensions (inch/mm)

| | | | | | | | |
|-------|-------|------|-------|-------|-------|------|-------|
| A | B | C | D | E | F | G | H |
| 1.25 | 1.25 | -- | .63 | .38 | .61 | -- | -- |
| 31.75 | 31.75 | -- | 16.00 | 9.65 | 15.49 | -- | -- |
| J | K | L | M | N | P | Q | wt |
| -- | .76 | .125 | 1.688 | 2.18 | .75 | .07 | grams |
| -- | 19.30 | 3.18 | 42.88 | 55.37 | 19.05 | 1.78 | 85.0 |

Features

- wideband, DC to 4.6 GHz
- high isolation, 50 dB typ.
- low video leakage, 30 mVp-p typ.
- excellent VSWR, 1.3:1 typ.

Applications

- instrumentation
- communication systems
- laboratory

Electrical Specifications

| FREQ. (GHz) | INSERTION LOSS (dB) | | | | | | 1dB COMPR. (dBm) | | | IN-OUT ISOLATION (dB) | | | | | | |
|----------------|---------------------|---------|--------------|---------------|------------|--------------|------------------|------------|--------------|-----------------------|------------|--------------|---------------|------------|--------------|---------------|
| | DC | 200 MHz | 200-1000 MHz | 1000-4600 MHz | DC-200 MHz | 200-1000 MHz | 1000-4600 MHz | DC-200 MHz | 200-1000 MHz | 1000-4600 MHz | DC-200 MHz | 200-1000 MHz | 1000-4600 MHz | DC-200 MHz | 200-1000 MHz | 1000-4600 MHz |
| f _L | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Typ. | Typ. | Typ. | Typ. | Min. | Typ. | Min. | Typ. | Min. |
| DC | 4.6 | 0.8 | 1.1 | 0.9 | 1.3 | 1.5 | 2.6 | 10 | 17 | 27 | 60 | 45 | 50 | 40 | 30 | 25 |

Additional Specifications

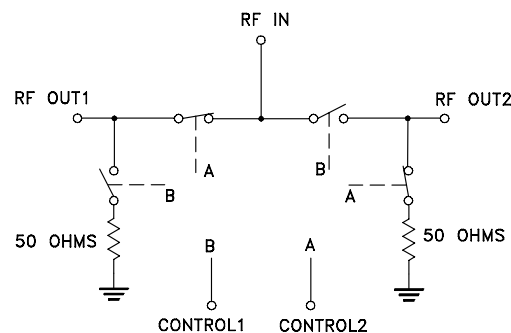
| | |
|---|-----------------|
| Control Voltage, volts | |
| Low State | -0.2 to 0 |
| High State (negative) for compression specs for other specs | -8 -5 to -8 |
| Control Current, mA | 2.5 typ. at -8V |
| VSWR(:1) | 1.3 typ. |
| Rise/Fall time (10%-90%), ns | 2 typ. |
| Switching time, 50% of Control to 90% RF(Turn-on), ns | 4 typ. |
| 10% RF(Turn-off), ns | 2.5 typ. |
| Video Leakage, mVp-p 0/-5V Control | 30 typ. |

1. Max Input RF power, +30 dBm except 100-500 MHz +27 dBm, and DC-100 MHz +24 dBm
2. Control voltage (-10V) maximum.
3. Video leakage or break through is defined as leakage of switching signal to RF output ports.
4. OFF state at RF output is low impedance.
5. All RF connections must be DC blocked or held at 0V DC.

CONTROL LOGIC

| Control Ports | | RF outputs | |
|---------------|----|------------|-----|
| 1 | 2 | 1 | 2 |
| -V | 0 | On | Off |
| 0 | -V | Off | On |

Electrical Schematic



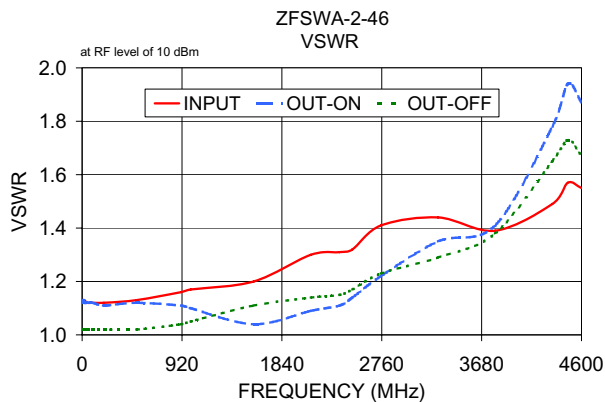
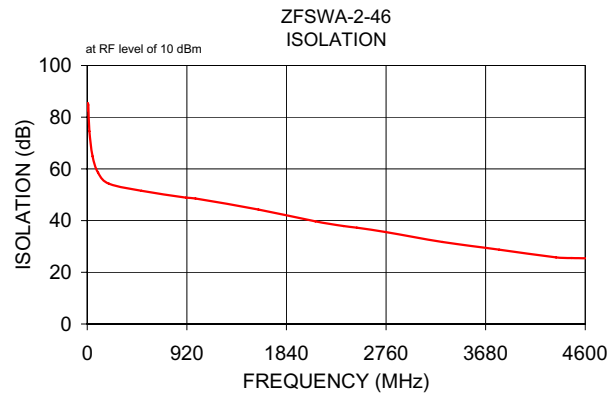
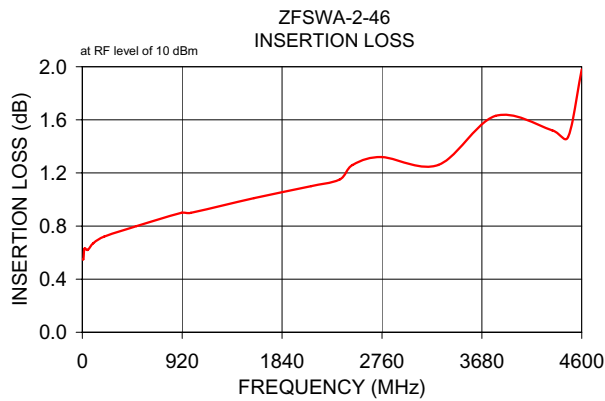
Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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Typical Performance Data

| FREQ. (MHz) | ON INSERTION LOSS (dB) CONTROL @ 0V/-5V IN-OUT | | OFF ISOLATION (dB) CONTROL @ 0V/-5V IN-OUT | | VSWR IN | VSWR ON | VSWR OUT OFF |
|----------------|--|----------|--|----------|------------|------------|--------------------|
| | \bar{x} | σ | \bar{x} | σ | | | |
| 3.00 | 0.55 | 0.01 | 82.53 | 2.67 | 1.12 | 1.12 | 1.02 |
| 5.00 | 0.55 | 0.02 | 85.42 | 4.39 | 1.12 | 1.12 | 1.02 |
| 10.00 | 0.55 | 0.02 | 84.71 | 7.84 | 1.13 | 1.13 | 1.02 |
| 20.00 | 0.63 | 0.04 | 74.57 | 2.52 | 1.13 | 1.12 | 1.02 |
| 50.00 | 0.62 | 0.02 | 64.87 | 0.76 | 1.12 | 1.12 | 1.02 |
| 100.00 | 0.67 | 0.02 | 58.56 | 0.45 | 1.12 | 1.12 | 1.02 |
| 200.00 | 0.72 | 0.02 | 54.29 | 0.36 | 1.12 | 1.11 | 1.02 |
| 500.00 | 0.80 | 0.02 | 51.52 | 0.42 | 1.13 | 1.12 | 1.02 |
| 911.55 | 0.90 | 0.02 | 48.87 | 1.18 | 1.16 | 1.11 | 1.04 |
| 1000.00 | 0.90 | 0.03 | 48.56 | 1.23 | 1.17 | 1.10 | 1.05 |
| 1581.00 | 1.01 | 0.04 | 44.26 | 1.63 | 1.20 | 1.04 | 1.11 |
| 2107.00 | 1.10 | 0.03 | 39.70 | 1.28 | 1.30 | 1.09 | 1.14 |
| 2370.00 | 1.15 | 0.05 | 37.89 | 1.12 | 1.31 | 1.11 | 1.15 |
| 2489.55 | 1.26 | 0.06 | 37.25 | 0.97 | 1.32 | 1.14 | 1.17 |
| 2752.55 | 1.32 | 0.07 | 35.59 | 0.62 | 1.41 | 1.22 | 1.23 |
| 3278.55 | 1.26 | 0.04 | 31.74 | 1.06 | 1.44 | 1.35 | 1.29 |
| 3804.55 | 1.63 | 0.09 | 28.75 | 0.72 | 1.39 | 1.41 | 1.38 |
| 4330.55 | 1.52 | 0.06 | 25.75 | 0.41 | 1.49 | 1.78 | 1.65 |
| 4474.00 | 1.47 | 0.09 | 25.51 | 0.36 | 1.57 | 1.94 | 1.73 |
| 4600.00 | 1.98 | 0.06 | 25.42 | 0.32 | 1.55 | 1.87 | 1.67 |



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