*Coaxial*

# Switch GaAs

# ZSWA-4-30DR

## 50Ω SP4T, TTL Driver, Absorptive DC to 3 GHz

CASE STYLE: CV665

| Connectors | Model | Price | Qty. |
|---|---|---|---|
| **SMA** | ZSWA-4-30DR | $119.95 | (1-9) |

### Maximum Ratings

| | |
|---|---|
| Operating Temperature | -30°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Input Power | see Table |
| Vcontrol | (V+) +0.4V |

### Coaxial/Pin Connections

| | |
|---|---|
| RF IN | 1 |
| RF OUT 1 | 2 |
| RF OUT 2 | 3 |
| RF OUT 3 | 4 |
| RF OUT 4 | 5 |
| CONTROL 1 | C5 |
| CONTROL 2 | C3 |
| CONTROL 3 | C4 |
| CONTROL 4 | C6 |
| +5V (V+) | C2 |
| -5V (V-) | C1 |

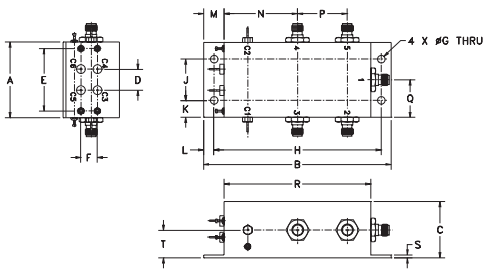
### Features

- wideband, DC to 3 GHz
- low video leakage, 30 mVp-p typ.
- high isolation, 37 dB typ. @ 2 GHz
- integral TTL driver

### Applications

- transmitter/receiver isolation
- automated switching networks
- cellular
- PCN

### Outline Drawing




### Outline Dimensions (inch / mm)

| A | B | C | D | E | F | G | H | J | K |
|---|---|---|---|---|---|---|---|---|---|
| 1.61 | 4.00 | 1.20 | .45 | 1.33 | .35 | .161 | 3.560 | .880 | .36 |
| 40.89 | 101.60 | 30.48 | 11.43 | 33.78 | 8.89 | 4.09 | 90.42 | 22.35 | 9.14 |

| L | M | N | P | Q | R | S | T | | wt |
|---|---|---|---|---|---|---|---|---|---|
| .22 | .44 | 1.56 | 1.06 | .80 | 3.12 | .06 | .59 | | grams |
| 5.59 | 11.18 | 39.62 | 26.92 | 20.32 | 79.25 | 1.52 | 14.99 | | 150.0 |

### Electrical Specifications

| FREQ. (GHz) | | INSERTION LOSS (dB) | | | | | | 1dB COMPR. (dBm) | | | IN-OUT ISOLATION (dB) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | DC-500 MHz | | 500-2000 MHz | | 2000-3000 MHz | | DC-500 MHz | 500-2000 MHz | 2000-3000 MHz | DC-500 MHz | | 500-2000 MHz | | 2000-3000 MHz | |
| $f_L$ | $f_U$ | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Typ. | Typ. | Typ. | Min. | Typ. | Min. | Typ. | Min. |
| DC | 3 | 1.0 | 1.8 | 1.5 | 3.0 | 2.0 | 3.9 | 23* | 25 | 25 | 50 | 40 | 37 | 32 | 31 | 26 |

*1dB compression gradually decreases to 10 dBm at 1 MHz

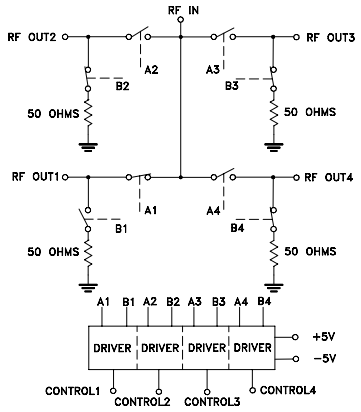
| Additional Specifications | | | |
|---|---|---|---|
| *TTL Control Voltage<br>Low Threshold, V<br>High Threshold, V | 0/V+<br>0.8 max.<br>3.5 min. | | |
| TTL Control Current, mA<br>High V, mA<br>Low V, mA | <br>0.2 max.<br>0.02 max. | | |
| Positive Supply V. (V+) | +5±0.5 | | |
| Negative Supply V. (V-) | -5±0.25 | | |
| Positive Supply Current, mA | 4 max | | |
| Negative Supply Current, mA | 20 max. | | |
| VSWR(:1) | 1.28 typ., ON<br>1.24 typ.,OFF<br>DC-2GHz | | |
| Rise/Fall time (10%-90%), ns<br>Switching time, 50% of Control to<br>90% RF (Turn-on), ns<br>10% RF (Turn-off), ns | 25 typ.<br><br>45 typ. | | |
| **Video Leakage, mVp-p<br>0/+5V Control | 30 typ. | | |
| MTBF, hrs @85°C case | $30X10^6$ | | |
| Max. Input Power, dBm<br>Steady state control<br>As Modulator | DC-100 MHz<br>+20<br>+8 | 100-500 MHz<br>+24<br>+14 | 500-3000 MHz<br>+30<br>+20 |

* Do not apply control voltage high prior to applying V+

** Video leakage or break through is defined as leakage of TTL switching signal to RF output ports. All RF pins must be DC blocked or held at 0V DC.

| CONTROL LOGIC | | | | | | | |
|---|---|---|---|---|---|---|---|
| Control Ports | | | | RF outputs | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Low | High | High | High | On | Off | Off | Off |
| High | Low | High | High | Off | On | Off | Off |
| High | High | Low | High | Off | Off | On | Off |
| High | High | High | Low | Off | Off | Off | On |

### Electrical Schematic



## Typical Performance Data

| FREQ. (MHz) | ON INSERTION LOSS (dB) TTL Low @ 0V IN-OUT | | OFF ISOLATION (dB) TTL High @ 5V IN-OUT | | VSWR IN | VSWR OUT ON | VSWR OUT OFF |
|---|---|---|---|---|---|---|---|
| | $\bar{x}$ | σ | $\bar{x}$ | σ | $\bar{x}$ | $\bar{x}$ | $\bar{x}$ |
| 1.00 | 0.59 | 0.007 | 94.53 | 1.66 | 1.05 | 1.07 | 1.29 |
| 125.75 | 0.87 | 0.008 | 62.61 | 0.49 | 1.14 | 1.08 | 1.26 |
| 250.50 | 0.97 | 0.007 | 57.54 | 0.31 | 1.10 | 1.14 | 1.26 |
| 375.25 | 1.02 | 0.011 | 54.64 | 0.24 | 1.22 | 1.19 | 1.27 |
| 500.00 | 1.09 | 0.012 | 52.17 | 0.23 | 1.26 | 1.24 | 1.28 |
| 687.50 | 1.28 | 0.011 | 49.37 | 0.19 | 1.46 | 1.31 | 1.30 |
| 875.00 | 1.35 | 0.010 | 47.33 | 0.26 | 1.53 | 1.34 | 1.35 |
| 1062.50 | 1.47 | 0.013 | 45.96 | 0.26 | 1.49 | 1.37 | 1.38 |
| 1250.00 | 1.47 | 0.017 | 44.64 | 0.20 | 1.45 | 1.35 | 1.37 |
| 1437.50 | 1.51 | 0.021 | 44.41 | 0.25 | 1.37 | 1.34 | 1.41 |
| 1625.00 | 1.50 | 0.022 | 44.27 | 0.34 | 1.24 | 1.35 | 1.41 |
| 1812.50 | 1.63 | 0.036 | 43.69 | 0.29 | 1.35 | 1.31 | 1.41 |
| 2000.00 | 1.73 | 0.040 | 44.05 | 0.31 | 1.25 | 1.29 | 1.42 |
| 2333.33 | 1.80 | 0.042 | 42.78 | 0.29 | 1.66 | 1.30 | 1.37 |
| 2444.44 | 1.89 | 0.058 | 43.76 | 0.34 | 1.38 | 1.34 | 1.35 |
| 2555.56 | 1.90 | 0.055 | 42.68 | 0.34 | 1.54 | 1.38 | 1.31 |
| 2666.67 | 2.03 | 0.062 | 41.94 | 0.29 | 1.60 | 1.33 | 1.31 |
| 2777.78 | 2.07 | 0.069 | 42.93 | 0.42 | 1.27 | 1.45 | 1.25 |
| 2888.89 | 2.18 | 0.072 | 41.51 | 0.36 | 1.51 | 1.40 | 1.29 |
| 3000.00 | 2.28 | 0.078 | 41.43 | 0.38 | 1.65 | 1.47 | 1.22 |