

R591 RADIALL coaxial subminiature switches have a typical operating life exceeding 25 million cycles. Excellent RF & repeatability characteristics along with a guaranteed life of 10 million cycles make these switches ideal for Automated Test Equipment (ATE) and other measurement applications. These miniature switches are also an excellent choice for Mil/Aero applications due to their small size, light weight, as well as outstanding shock and vibration handling capabilities.

PART NUMBER SELECTION

R 591

Updated revision

RF connectors :
 3 : SMA up to 6 GHz
 7 : SMA up to 26.5 GHz
 8 : SMA 2.9 up to 40GHz (5)
 E : QMA up to 6 GHz (4)

Type :
 0 : Normally open
 2 : Latching, global reset
 6 : Latching, separated reset (1)

Actuator voltage :
 2 : 12 Vdc
 3 : 28 Vdc

Actuator Terminal :
 0 : Solder pins
 5 : Micro-D connector

Options :
 0 : Without option
 1 : Positive common
 2 : Normally open with TTL driver (high level) (2)&(3)
 3 : With suppression diodes
 4 : With suppression diodes and positive common

Number of positions :
 4 : 4 positions
 6 : 6 positions

(1) : Available with "solder pins" models only
 (2) : Polarity is not relevant to application for switches with TTL driver
 (3) : Suppression diodes are already included with TTL option



(4) : The "QLF" trademark (quick lock formula®) standard applies to QMA and QN series and guarantees the full intermateability between suppliers using this trademark. Using QLF certified connectors also guarantees the specified level of RF performances.

(5) : Connector SMA 2.9 is equivalent to "K connector®", registered trademark of Anritsu.



In the continual goal to improve our products, we reserve the right to make any modification judged necessary.

GENERAL SPECIFICATIONS

| Operating mode | | Normally open | | Latching | |
|--|------------|--|---------------------|-----------------------|---------------------|
| Nominal operating voltage (across operating temperature) | Vdc | 12 (10.2 / 13) | 28 (21 / 30) | 12 (10.2 / 13) | 28 (21 / 30) |
| Coil resistance (+/-10%) | Ohms | 48 | 250 | 60 | 285 |
| Operating current at 23°C | mA | 250 | 110 | 200 | 98 |
| Average power | | See Power Rating Chart on general catalog | | | |
| TTL input | High Level | 2.2 to 5.5 Volts | | | |
| | Low Level | 0 to 0.8 Volts | | | |
| Switching time (max) | ms | 10 | | | |
| Life | | 10 million cycles (SMA, QMA) / 2 million cycles (SMA 2.9) | | | |
| Connectors | | SMA / QMA / SMA 2.9 | | | |
| Actuator terminals | | Solder Pins : double row connector for wrapping, soldering (250°C max / 30 sec), or connecting to 2.54 mm pitch female connector. 9 pin micro-D receptacle M83513/07-A according to MIL-C-85513. | | | |
| Operating temperature range | °C | -40 to +85 | | | |
| Storage temperature range | °C | -55 to +85 | | | |
| Sine vibration (According to MIL STD 202, Method 204D, Cond. D) | | 10-2000 Hz, 20g | operating | | |
| Random vibration (According to MIL STD 202, Method 214A, Profile I, Cond. F) | | 50-2000 Hz, 20.71grms | operating | | |
| Shock (According to MIL STD 202, Method 213B, Cond. C) | | 100g / 6 ms, ½ sine | operating | | |

RF PERFORMANCES

| Connectors | Frequency Range GHz | | V.S.W.R. (max) | Insertion Loss (max) dB | Isolation (min) dB | Impedance Ohms |
|------------|---------------------|-----------|-------------------|----------------------------|-----------------------|-------------------|
| SMA / QMA | DC – 6 | DC – 3 | 1.20 | 0.20 | 80 | 50 |
| | | 3 – 6 | 1.30 | 0.30 | 70 | |
| SMA | DC – 26.5 | DC – 3 | 1.20 | 0.20 | 80 | 50 |
| | | 3 – 8 | 1.30 | 0.30 | 70 | |
| | | 8 – 12.4 | 1.40 | 0.40 | 60 | |
| | | 12.4 – 18 | 1.50 | 0.50 | 60 | |
| SMA2.9 | DC – 40 | 18 – 26.5 | 1.60 | 0.60 | 55 | 50 |
| | | DC – 3 | 1.20 | 0.20 | 80 | |
| | | 3 – 8 | 1.30 | 0.30 | 70 | |
| | | 8 – 12.4 | 1.40 | 0.40 | 60 | |
| | | 12.4 – 18 | 1.50 | 0.50 | 60 | |
| | | 18 – 26.5 | 1.70 | 0.70 | 55 | |
| | | 26.5 – 40 | 2.20 | 1.10 | 45 | |

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TYPICAL RF PERFORMANCES



TYPICAL OUTLINE DRAWING (1)

| Connectors | SMA | SMA 2.9 | QMA |
|--------------------|------------|----------|-------------|
| A max (mm/ inches) | 7.4/ 0.291 | 6.5/0.26 | 10.8/ 0.425 |



(1) : For SP4T, ways 3 and 6 not connected

all dimensions are in mm/ inches

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R591 series electrical schematics



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R591 series electrical schematics

LATCHING GLOBAL RESET WITH POSITIVE COMMON
R591 -2- -1-



LATCHING GLOBAL RESET WITH SUPPRESSION DIODES
R591 -2- -3-



LATCHING GLOBAL RESET WITH POSITIVE COMMON AND SUPPRESSION DIODES
R591 -2- -4-



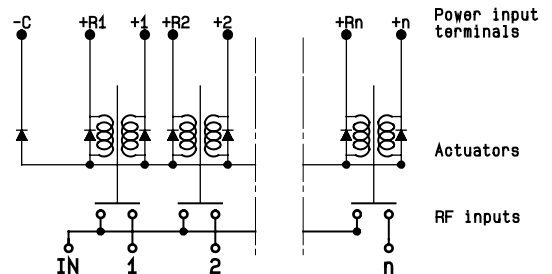
LATCHING SEPARATED RESET WITHOUT OPTION
R591 -6- -0-



LATCHING SEPARATED RESET WITH POSITIVE COMMON
R591 -6- -1-



LATCHING SEPARATED RESET WITH SUPPRESSION DIODES
R591 -6- -3-



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R591 series electrical schematics



Pin identification

Solder pins (top view)*



9 pin Micro-D (top view)



- NC : not connected
- For SP4T, ways 3 and 6 not connected
- Pin R = reset of all paths

* : compatible with 2.54 mm pitch double row 16 contact femelle connector

| Type | | PIN | | | | | | | | | | | | | | |
|------------------------------|-----------------|------------|-----|----|----|----|----|----|----|--------|--------|--------|--------|--------|--------|--------|
| | | C | V | 1 | 2 | 3 | 4 | 5 | 6 | R | R1 | R2 | R3 | R4 | R5 | R6 |
| Normally open | negative common | -C | NC | +1 | +2 | +3 | +4 | +5 | +6 | NC | NC | NC | NC | NC | NC | NC |
| | positive common | +C | NC | -1 | -2 | -3 | -4 | -5 | -6 | NC | NC | NC | NC | NC | NC | NC |
| Latching | negative common | -C | NC | +1 | +2 | +3 | +4 | +5 | +6 | +reset | NC | NC | NC | NC | NC | NC |
| global reset | positive common | +C | NC | -1 | -2 | -3 | -4 | -5 | -6 | -reset | NC | NC | NC | NC | NC | NC |
| Latching | negative common | -C | NC | +1 | +2 | +3 | +4 | +5 | +6 | NC | +res.1 | +res.2 | +res.3 | +res.4 | +res.5 | +res.6 |
| individual reset | positive common | +C | NC | -1 | -2 | -3 | -4 | -5 | -6 | NC | -res.1 | -res.2 | -res.3 | -res.4 | -res.5 | -res.6 |
| Normally open with TTL drive | | Gnd or RTN | Vcc | E1 | E2 | E3 | E4 | E5 | E6 | NC | NC | NC | NC | NC | NC | NC |

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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