

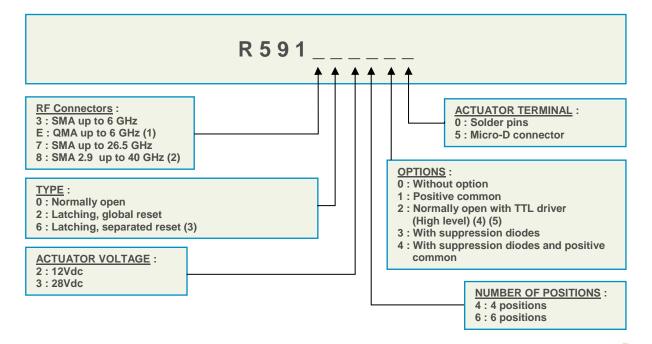
COAXIAL SUBMINIATURE MULTIPORT SWITCHES

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SPnT Coaxial Subminiature Switches DC to 6 GHz, DC to 26.5 GHz, DC to 40 GHz

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



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



- (2) Connector SMA2.9 is equivalent to "K Connector®", registered trademark of Anritsu
- (3) Available with "solder pins " models only
- (4) Polarity is not relevant to application for switches with TTL driver
- (5) Suppression diodes are already included with TTL option

PICTURE





COAXIAL SUBMINIATURE MULTIPORT SWITCHES

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GENERAL SPECIFICATIONS

0	perating mode	Norma	lly open	Latching						
	operating voltage (Vdc) rating temperature range)	12 (10.2 / 13)	28 (21 / 30)	12 (10.2 / 13)	28 (21 / 30)					
Coil resis	tance (+/-10%) (Ohms)	48	250	60	285					
Nominal oper	rating current at 23°C (mA)	250	250 110 200							
Α	verage power	See Power Rating Chart on final page								
TTI immut	High Level	2.2 to 5.5 Volts								
TTL input	Low Level	0 to 0.8 V								
Switch	hing time max (ms)	10								
Life min for	SMA / QMA	10 million cycles								
Life IIIII 101	SMA 2.9	2 million cycles								
	Connectors	SMA – QMA – SMA 2.9								
Actuator Solder Pins		Solder pins double row connector for wrapping, soldering (250°C max / 30 sec), or connecting to 2.54 mm pitch female connector.								
terminals	9 pin micro-D	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 STD 202, Method 204D, Cond. D)	10-2000 Hz, 20g operating								
-	nndom vibration D 202, Method 214A, Profile I, Cond. F)	50-2000 Hz, 20.71grms operating								
(According to MII	Shock L STD 202, Method 213B, Cond. C)		100g / 6 ms, ½ sine operating							

RF PERFORMANCES

Connectors	Frequenc	y Range GHz	V.S.W.R. (max)	Insertion Loss (max) dB	Isolation (min) dB	Max. average power (W) (1)	Impedance Ohms	
SMA/QMA	DC	DC - 3	1.20	0.20	80	250	50	
	DC – 6	3 – 6	1.30	0.30	70	170		
		DC - 3	1.20	0.20	80	250		
		3 – 8	1.30	0.30	0.30 70 150			
SMA	DC - 26.5	8 – 12.4	1.40	0.40	60	120	50	
		12.4 – 18	3 1.50 0.50 60		100			
		18 – 26.5	1.60	0.60	55	40		
SMA2.9		DC - 3	1.20	0.20	80	60		
		3 – 8	1.30	0.30	70	35		
	DC - 40	8 – 12.4	1.40	0.40	60	30	5 0	
		12.4 – 18	1.50	0.50	60	25	50	
		18 – 26.5	1.70	0.70	55	15		
		26.5 – 40	2.20	1.10	45	5		

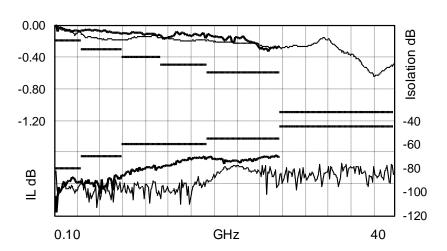


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TYPICAL RF PERFORMANCES

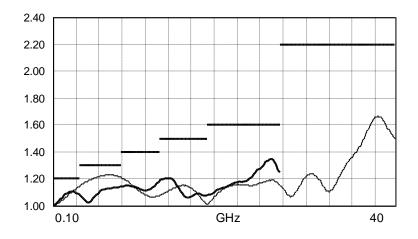
Insertion Loss and Isolation:

26.5GHz model with SMA connector
 40GHz model with SMA2.9 connector



V.S.W.R:

26.5GHz model with SMA connector40GHz model with SMA2.9 connector





10.8 / 0.425

6.7 / 0.264





PAGE 4/8 ISSUE **09-02-18** SERIES SPnT PART NUMBER R591 XXX XXX TYPICAL OUTLINE DRAWING Solder pin model Micro-D model 1.063 1.063 27 27 0.876 0.876 \emptyset 22.24 \emptyset 22.24 4 x chamfers 90° 4 x chamfers 90° [0.228] ∅5.80 0.228 0.5.80[0.120] 0.120 $4 \times 0 3.05$ $4 \times 0 3.05$ 1.327 1.327 □ 33.70 □ 33.70 9 pin Micro-D 2-56 UNC-2B THD receptacle 16 pin double row connector 1.201 1.201 [2.055 max.] 52.20 max. 1.894 max. 48.10 max. Ø 30.50 Ø 30.50 0.100 step 2.54 0.100 All dimensions are in millimetres.[inches] General tolerances: ±0.5 mm [0.02 in] Connectors SMA SMA2.9 QMA

Ways 3 and 6 are not connected for SP4T

7.7 / 0.303

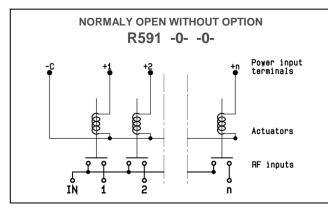
A max (mm / inches)

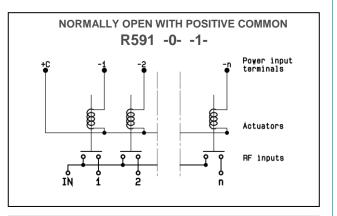


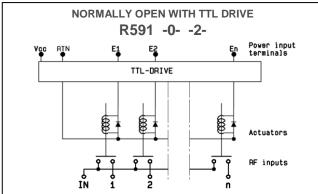
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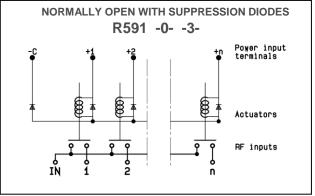
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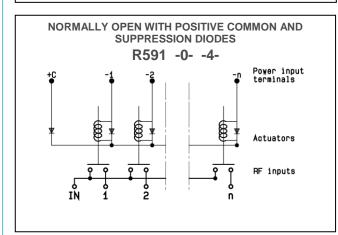
R591 SERIES ELECTRICAL SCHEMATICS

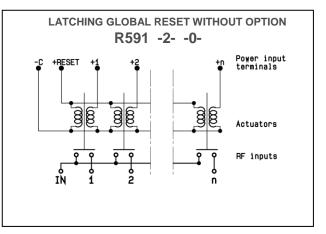














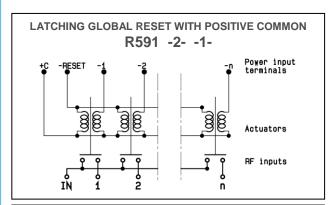
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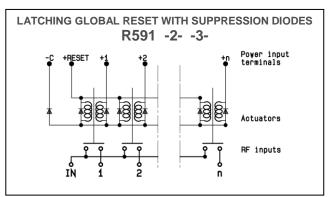
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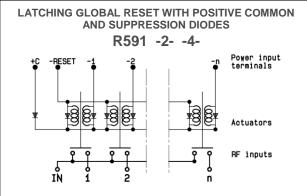
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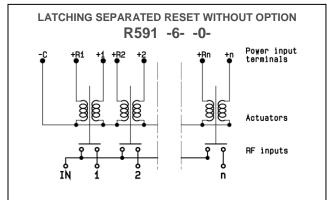
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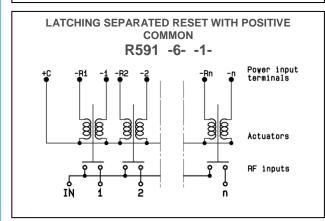
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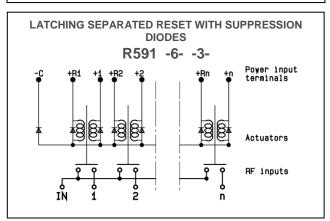


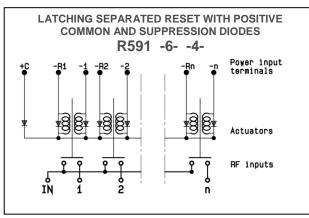














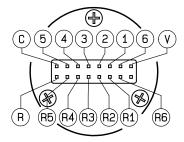
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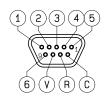
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Pin identification

Solder pins (Top view) *

9 pin Micro-D (Top view)







*: Compatible with 2.54 pitch double row 16 contacts female connector

		PIN														
Туре		С	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						
	Positive common	+C	NC	-1	-2	-3	-4	-5	-6	NC						
Latching	Negative common	Ç	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		RTN	Vcc	E1	E2	E3	E4	E5	E6	NC						

NC stand for "Not Connected" Pin R : Reset all paths Ways 3 and 6 are not connected for SP4T