

## SPDT up to 50 GHz

Pc Board - SMA - SMA 2.9 - 2.4mm - QMA - SMC - SMB - mini SMB - DIN



Radiall's RAMSES SPDT switches offer excellent reliability, high performance and operating frequencies from DC to 50 GHz. Radiall's RAMSES concept (which provides for a life span of 10 million cycles) offers a variety of options to meet customer needs.

These switches are dedicated to all market applications including: military, instrumentation and telecommunications.

Example of P/N:

R570413100 is a SPDT SMA 18 GHz, failsafe, 28 Vdc, with TTL driver, without option, solder pins.

### PART NUMBER SELECTION

**R 570**

**Frequency Range:**

- 3: SMA up to 3 GHz
- B: SMB up to 3 GHz
- C: SMC up to 3 GHz
- E: QMA up to 6 GHz (4)
- 4: SMA up to 18 GHz
- F: SMA up to 26.5 GHz
- 8: SMA 2.9 up to 40 GHz (5)
- J: 2.4mm up to 50 GHz
- 9: DIN 1.6/5.6 up to 2.5 GHz
- H: mini SMB up to 3 GHz (6)
- A: Pc board mount up to 3 GHz (6)

**Type:**

- 1: Failsafe
- 2: Failsafe + I.C.
- 3: Latching
- 4: Latching + I.C.
- 5: Latching + S.C.O. (1)
- 6: Latching + S.C.O. + I.C. (1)

**Actuator Voltage:**

- 2: 12 Vdc
- 3: 28 Vdc

**Actuator Terminals:**

- 0: Solder pins

**Options:**

- 0: Without option
- 1: Positive common (2) (3)
- 3: With suppression diodes (1)
- 4: With suppression diodes and positive common (1) (2) (3)

**TTL Option:**

- 0: Without TTL driver
- 1: With TTL driver (high level) (1) (2)

I.C.: Indicator contact - S.C.O.: Self Cut-Off

(1): Suppression diodes are already included in Self Cut-OFF & TTL option

(2): Polarity is not relevant to application for switches with TTL driver

(3): Positive common shall be specified only with type 3, 4, 5 & 6 because failsafe switches can be used with both polarities

(6): Available only upon request



(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

**SPDT up to 50 GHz**

Pc Board - SMA - SMA 2.9 - 2.4mm - QMA - SMC - SMB - mini SMB - DIN 1.6/5.6

**GENERAL SPECIFICATIONS**

Operating mode		Failsafe		Latching	
Nominal operating voltage (across temperature range)	Vdc	12 (10.2 to 13)	28 (24 to 30)	12 (10.2 to 13)	28 (24 to 30)
Coil resistance at 23 °C (+/-10%)	Ω	47.5	275	58	350
Operating current at 23 °C	mA	250	102	210	80
Average power	See Power Rating Chart page 1-13				
TTL Input	High level	2.2 to 5.5 Volts		800µA max 5.5 Volts	
	Low level	0 to 0.8 Volts		20µA max 0.8 Volts	
Indicator rating	1 W / 30 V / 100mA				
Switching time	ms	10			
Life	SMA - SMA 2.9 - QMA		10 million cycles		
	DIN 1.6/5.6 - Pc Board		5 million cycles		
	Mini SMB - SMB - SMC		2.5 million cycles		
	2.4mm		2 million cycles		
Connectors	SMA - SMA 2.9 - QMA - DIN 1.6/5.6 - SMB - SMC Mini SMB - Pc Board - 2.4mm				
Operating temperature range	DIN 1.6/5.6 - SMB - SMC - mini SMB - 2.4mm		-25°C to +70°C		
	SMA - SMA 2.9 - QMA - Pc Board		-40°C to +85°C		
Storage temperature range	DIN 1.6/5.6 - SMB - SMC - mini SMB - 2.4mm		-40°C to +85°C		
	SMA - SMA 2.9 - QMA - Pc Board		-55°C to +85°C		
Vibration (MIL STD 202, Method 204D, cond.D)		10-2000 Hz, 20g		Operating	
Shock (MIL STD 202, Method 213B, cond.C)		100g / 6ms, ½ sine		Operating	

**RF PERFORMANCES**

Connectors	Frequency range GHz		V.S.W.R. (max)	Insertion loss (max) dB	Isolation(min) dB	Impedance Ω
DIN 1.6/5.6	DC - 2.5	DC - 1	1.20	0.20	80	75
		1 - 2.5	1.30	0.30	70	
Mini SMB	DC - 3	DC - 1	1.20	0.20	80	
		1 - 3	1.30	0.30	70	
SMB - SMC	DC - 3	DC - 3	1.20	0.20	80	
QMA	DC - 6	DC - 3	1.20	0.20	80	
		3 - 6	1.30	0.30	70	
SMA	DC - 3	DC - 3	1.10	0.15	80	
		3 - 8	1.20	0.20	75	
	DC - 18	8 - 12.4	1.20	0.25	65	
		12.4 - 18	1.40	0.35	60	
SMA 2.9	DC - 26.5	18 - 26.5	1.50	0.50	55	
		DC - 6	1.30	0.30	70	
		6 - 12.4	1.40	0.40	60	
		12.4 - 18	1.50	0.50	60	
PC Board	DC - 40	18 - 26.5	1.70	0.70	55	
		26.5 - 40	1.90	0.80	50	
		DC - 3	DC - 3	1.20	0.20	80
2.4 mm	DC - 50	DC - 3	1.20	0.20	80	
		DC - 6	1.30	0.30	70	
		6 - 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	1.90	0.80	50	
		40 - 50	1.90	1.10	50	

See page 2-14, 2-18 and 2-19 for typical RF performances

Our Most Important Connection is with You.™

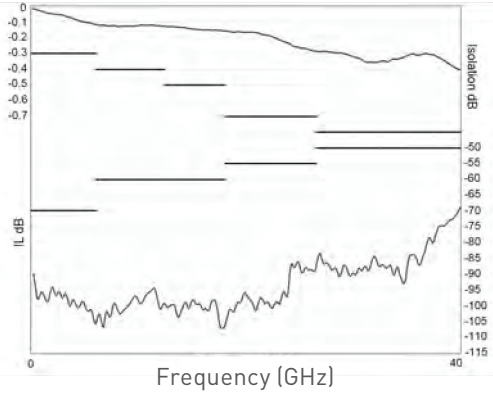
**SPDT up to 50 GHz**

Pc Board - SMA - SMA 2.9 - 2.4mm - QMA - SMC - SMB - mini SMB - DIN

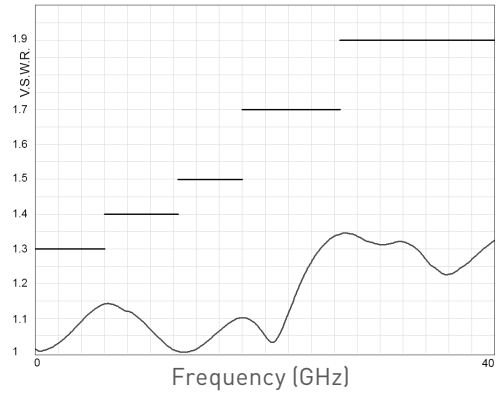
**R570 AND R572 TYPICAL RF PERFORMANCE**

Example: SPDT SMA 2.9 up to 40 GHz

**Insertion Loss and Isolation**

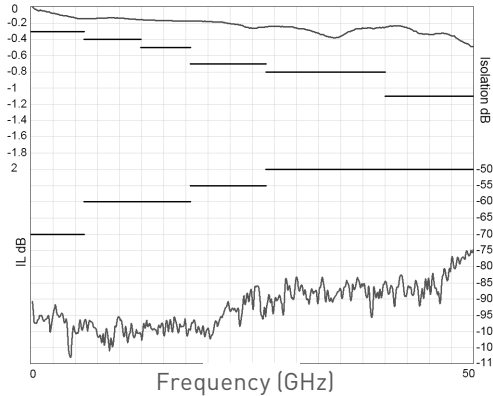


**V.S.W.R.**

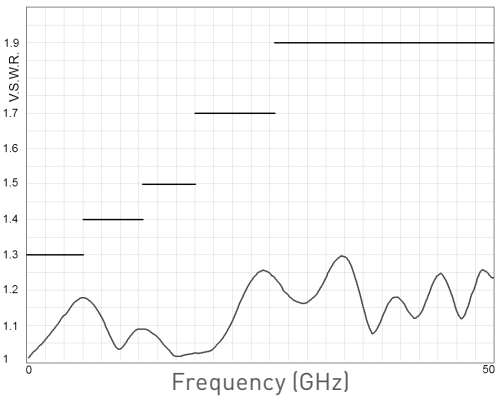


Example: SPDT 2.4mm up to 50 GHz

**Insertion Loss and Isolation**

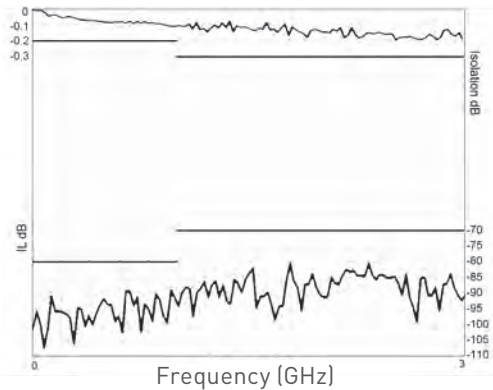


**V.S.W.R.**

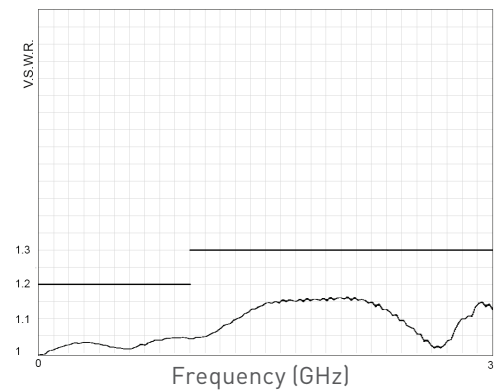


Example: SPDT mini SMB up to 3 GHz

**Insertion Loss and Isolation**



**V.S.W.R.**



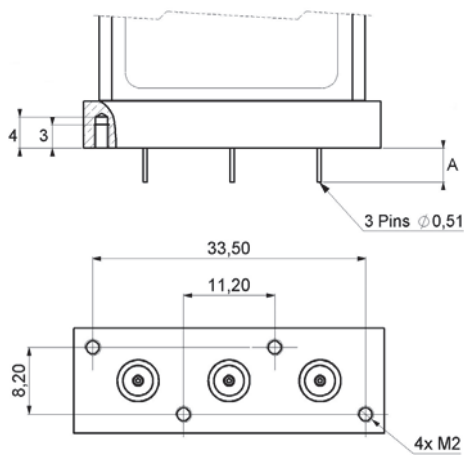
Note: see page 2-18 for other connectors

## SPDT up to 50 GHz

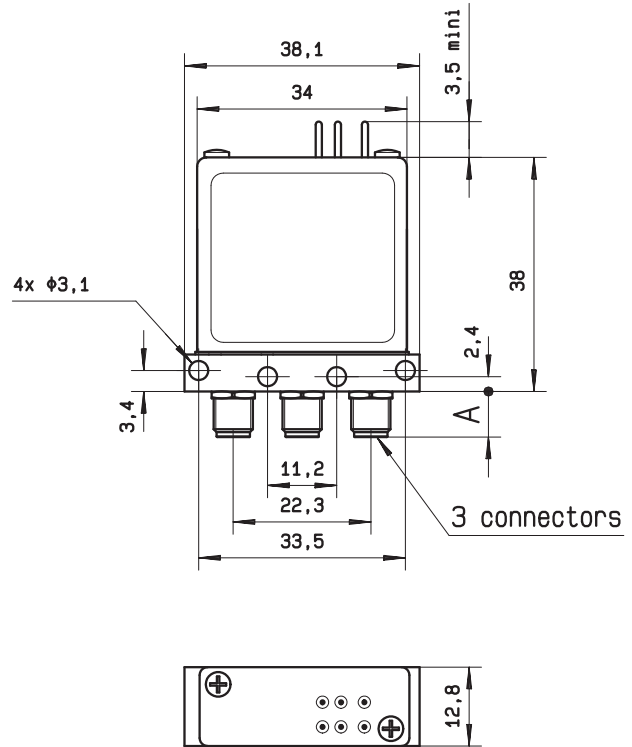
Pc Board - SMA - SMA 2.9 - 2.4mm - QMA - SMC - SMB - mini SMB - DIN

### TYPICAL OUTLINE DRAWING

Connectors	A max (mm)
SMA	7.4
SMA 2.9 & 2.4mm	6.3
SMB - SMC	9.3
QMA	10.8
Mini SMB	7.5
DIN 1.6/5.6	11.5
Pc Board	4.5

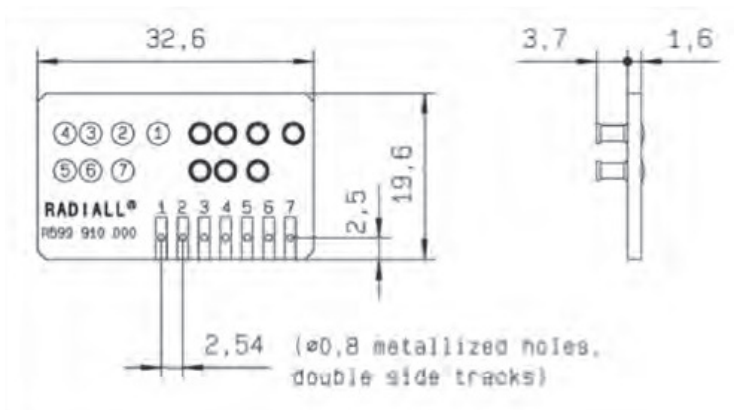


See page 2-27 for pin identification.



### ACCESSORIES

A printed circuit board interface connector (ordered separately) has been designed for easy mounting on terminals. For SPDT model R570 series => Radiall part number: **R599 910 000**



**SPDT up to 50 GHz: Low Consumption & Reduced Size**

SMA - SMA 2.9 - 2.4mm - QMA - SMC - SMB - mini SMB - DIN 1.6/5.6



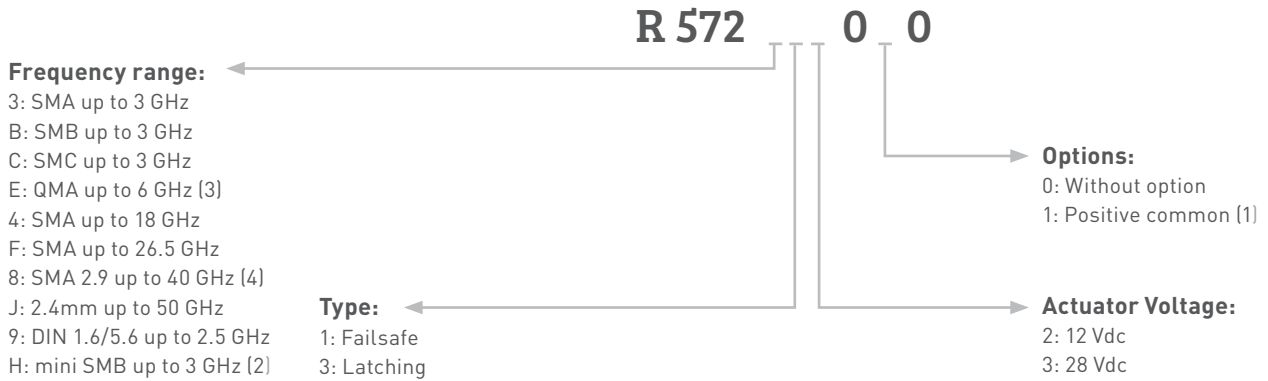
Radiall's RAMSES R572 series are ideal for RF & microwave systems where low current consumption, reduced size, high performance and high reliability are required. Other options are also available as shown on this page.

These switches are perfect for all market applications including: industrial, instrumentation, defense and telecommunications.

Example of P/N:

R572432010 is a SPDT SMA 18 GHz, latching, 12 Vdc, positive common, solder pins.

**PART NUMBER SELECTION**



(1): Positive common shall be specified only with type 3 because failsafe switches can be used with both polarities

(2): Available only upon request



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