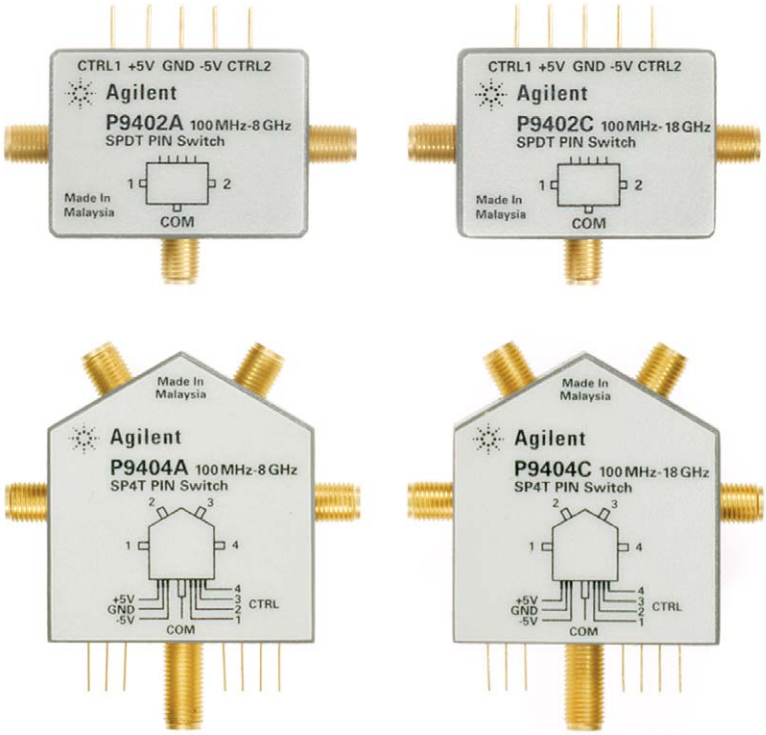
Agilent
P940xA/C
Solid State PIN Diode Switches

P9402A/C 100 MHz to 8/18 GHz SPDT Switch
P9404A/C 100 MHz to 8/18 GHz SP4T Switch



Key Features

- Significantly increase throughput with ultra fast switching speed of < 380 ns
- Reduce test system set up costs with the ultra long switching life
- Minimize cross-talk with exceptionally high port-to-port isolation of > 80 dB
- Optimize your system dynamic range with low insertion loss, 2.5 dB at 4 GHz, SP4T

Description

Agilent P940xA/C solid state switches, based on PIN diode technology, provide superior performance in terms of isolation, insertion loss and return loss across a broad operating frequency range. The P940xA/C are particularly suitable for high-speed RF and microwave switching applications in instrumentation, communication, radar, switch matrix as well as many other test systems.

The P940xA/C switches have a PIN diode individual control (IC) switch and discrete shunt pin diodes on the RF path. The discrete shunt pin diodes enhance the isolation between ports. The switches' individual control pin controls the port ON/OFF. With these features, the switches provide good port match even when they are off. Hence, the P9402A/C SPDT switches have three switching states, switching between the common port and port 1 or port 2 or all ports to the OFF state (terminated at 50 ohm). The P9404A/C SP4T switches have three switching states, switching from common port to either one of the output ports or all the output ports are terminated at 50 ohm.

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Specifications

Specifications refer to the performance standards or limits against which the solid state switches are tested.

Typical characteristics are included for additional information only and they are not specifications. These are denoted as "typical", "nominal" or "approximate" and are printed in italic.

RF Specifications

SPDT

Model	P9402A	P9402C
Frequency range	100 MHz to 8 GHz	100 MHz to 18 GHz
Insertion loss	< 2.5 dB (100 MHz to 4 GHz) < 3.2 dB (4 GHz to 8 GHz)	< 3.5 dB (100 MHz to 8 GHz) < 4 dB (8 GHz to 18 GHz)
Isolation	80 dB	80 dB
Return loss (ON & Common Port)	> 15 dB	> 10 dB
Return loss (OFF Port)	> 15 dB	> 10 dB
Switching speed rise/fall[1]	380 ns (typical)	380 ns (typical)
Characteristic impedance	50 Ω (nominal)	50 Ω (nominal)
Connectors	SMA (f)	SMA (f)

1. Switching speed is based on 50% TTL to 90% RF.

SP4T

Model	P9404A	P9404C
Frequency range	100 MHz to 8 GHz	100 MHz to 18 GHz
Insertion loss	< 2.5 dB (100 MHz to 4 GHz) < 3.5 dB (4 GHz to 8 GHz)	< 3.5 dB (100 MHz to 8 GHz) < 4.5 dB (8 GHz to 18 GHz)
Isolation	80 dB	80 dB
Return loss (ON & Common Port)	> 15 dB	> 10 dB
Return loss (OFF Port)	> 15 dB	> 10 dB
Switching speed rise/fall[1]	450 ns (typical)	450 ns (typical)
Characteristic impedance	50 Ω (nominal)	50 Ω (nominal)
Connectors	SMA (f)	SMA (f)

1. Switching speed is based on 50% TTL to 90% RF.

Absolute Maximum Ratings

Parameters	P9402A/C		P9404A/C	
	MIN	MAX	MIN	MAX
RF input power (average)		+23 dBm		+27 dBm
V_{CC} DC Supply Voltage	+4.5 V	5.5 V	+4.5 V	5.5 V
V_{EE} DC Supply Voltage	–5.5 V	–4.5 V	–5.5 V	–4.5 V
CTRL input high voltage	+2.4 V	V_{CC}	+2.4 V	V_{CC}
CTRL input low voltage	–0.8 V	+0.8 V	–0.8 V	+0.8 V

Ordering Information

P9402A 8 GHz SPDT PIN Switch
P9402C 18 GHZ SPDT PIN Switch
P9404A 8 GHZ SP4T PIN Switch
P9404C 18 GHZ SP4T PIN Switch

Related Literatures

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