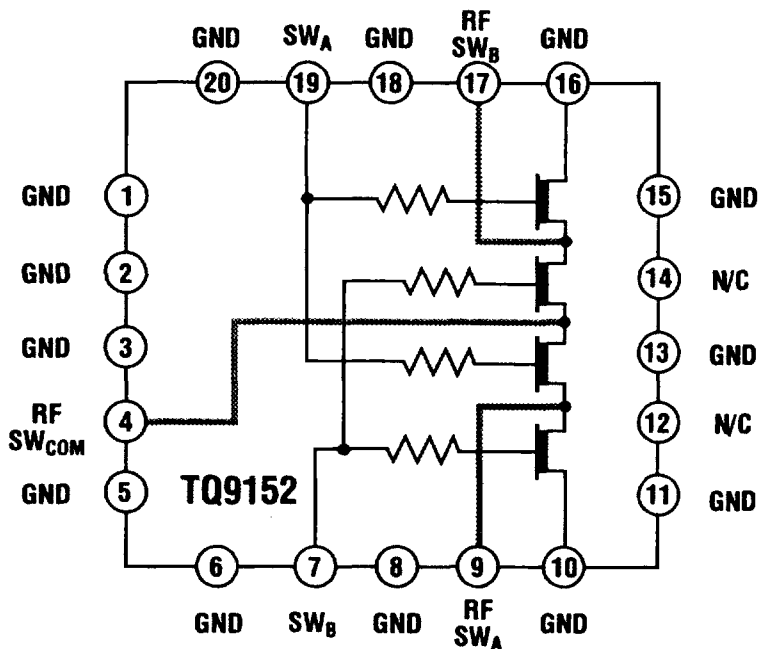


TQ9152

Block Diagram



DC – 10 GHz SPDT Switch (Driverless)

Product Description

The TQ9152 is a fast broadband microwave SPDT switch. Several switches can be cascaded together to implement multi-port configurations. The TQ9152 is available mounted in a hermetic surface-mount package or in die form. The die size is 54 x 43 mils.

Switch Logic

SW_A Ctrl.	SW_B Ctrl.	$RF SW_A$	$RF SW_B$
+0.5	-4.0	ON	OFF
-4.0	+0.5	OFF	ON

Features

- DC – 10 GHz broad bandwidth
- "On" Insertion Loss < 2 dB
- "Off" Isolation > 25 dB
- Input/Output VSWR < 2:1
- Switching speed < 3 ns

Electrical Characteristics

	Min	Typ	Max	Units
Control Voltage	-6		±1.0	V
Frequency of Operation	DC		10	GHz
"ON" Insertion Loss		1.5	2.5	dB
"OFF" Isolation – 1 GHz	40	45		dB
"OFF" Isolation – 10 GHz	20	25		dB
Input/Output VSWR		1.7 : 1	2 : 1	

Applications

- T/R switches
- Antenna switches
- Pulse generators

TQNTS019

TQ9152

DC Characteristics @ 20°C (T_c)

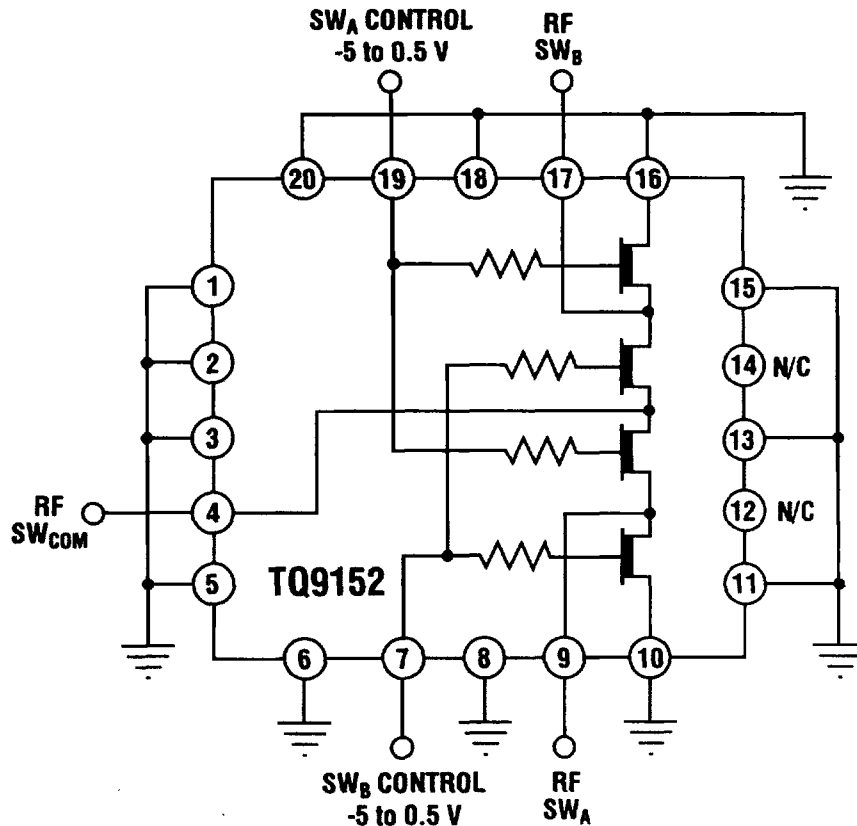
	Min.	Typ.	Max.	Unit
Switch Control Levels – High	0	0.5	0.7	V
Switch Control Levels – Low	-5	-4	-3	V

RF Characteristics @ 20°C (T_c)

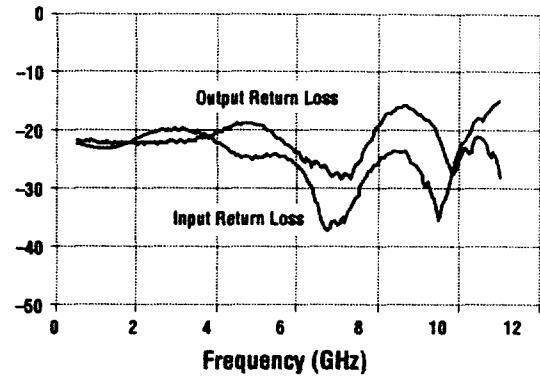
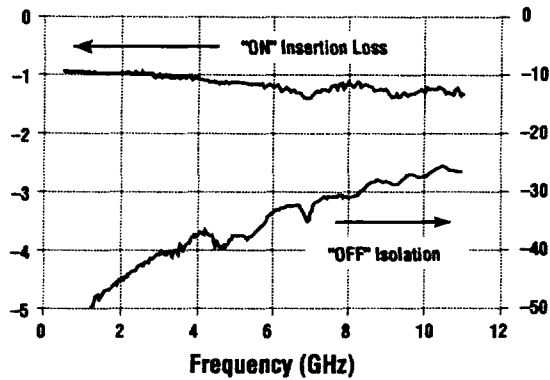
	Min.	Typ.	Max.	Unit
Frequency of Operation	1		10	GHz
"On" Insertion Loss		1.5	2.5	dB
"Off" Isolation – 1 GHz	40	45		dB
"Off" Isolation – 10 GHz	20	25		dB
Input/Output VSWR		1.7 : 1	2 : 1	
Switching Speed		< 3		ns
Max. RF Input Power		> +20		dBm
Third-Order Intercept		+ 35		dBm

Note: 1. P1dB and 3rd OIP decrease below 1 GHz.

Test/ Application Circuit



Typical TQ9152 Packaged Performance



Pin Functions

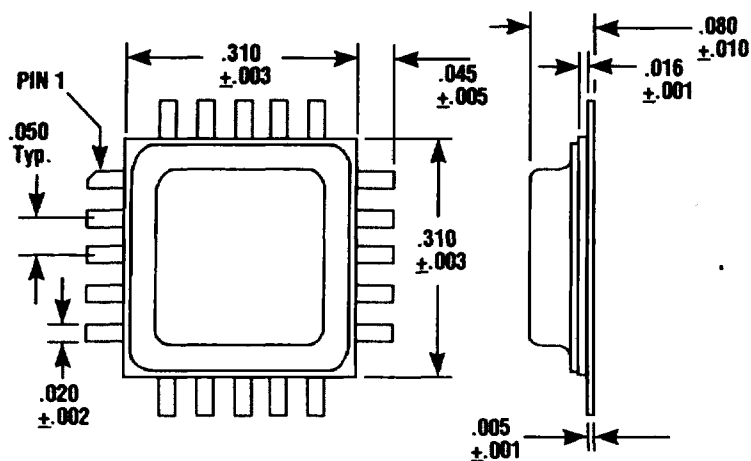
Pin Name	Pin #	Description
RF SW _{COM}	4	Comm. RF input; DC-coupled.
SW _B Control	7	Switch B control. 0.5V to -4V swing recommended.
RF SW _A N.C.	9	RF input A; DC-coupled. "OFF" with negative control signal applied to SW _A Control.
N/C	12	No Connect
N/C	14	No Connect
RF SW _B N.O.	17	RF input B; DC-coupled. "OFF" with negative control signal applied to SW _B Control.
SW _A Control	19	Switch A control. 0.5v to -4v swing recommended.
GND	1-3, 5, 6, 8, 10, 11, 13, 15, 16, 18, 20	Ground

TQ9152

Absolute Maximum Ratings

	<i>Min.</i>	<i>Typ.</i>	<i>Max.</i>	<i>Unit</i>
Control Voltage	- 6		± 1.0	V
Operating Temperature	- 55		+ 85	°C
Storage Temperature	- 55		+ 150	°C

Package Outline



Ordering Information

TC-9152-A

U – Ceramic Package
D – Die

**For more information contact
Customer Service Department:**

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