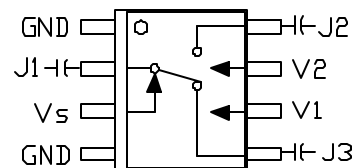


SPDT Reflective Switch – Positive Control 3 Volt, Positive Control, 0-2.5 GHz ITTS107AB

Preliminary

FEATURES

- SOIC-8 package
- Low insertion loss (0.5 dB at 900 MHz)
- High input power for 1dB compression with +5.0 Volt Control Voltage (30dB at 2.0 GHz)
- Positive supply voltage and control
- +3.0 Volt Control Voltage
- Self-Aligned MSAG® Process



DESCRIPTION

The ITTS107AB is a low loss SPDT reflective switch in a plastic SOIC 8 package for commercial applications. The switch operates at 3 or 5V with a positive supply voltage and positive control signals. Blocking capacitors are required on all RF ports.

TRUTH TABLE

V1	V2	J1-J2	J1-J3
0	+3	Isolation	Insertion Loss
+3	0	Insertion Loss	Isolation

ELECTRICAL SPECIFICATIONS AT 25°C (0, +3 V)

Parameter	Test Conditions ¹	Min	Typ	Max	Unit
Insertion Loss	DC ² -0.5 GHz		0.45		dB
	DC-1.0 GHz		0.55		dB
	DC-2.0 GHz		0.85		dB
	DC-2.5 GHz		1.4		dB
Isolation	DC-0.5 GHz		27.6		dB
	DC-1.0 GHz		21.5		dB
	DC-2.0 GHz		15.3		dB
	DC-2.5 GHz		13		dB
VSWR ³	DC-1.0 GHz		1.1:1		
	DC-2.0 GHz		1.3:1		

1. All measurements made in a 50 Ω system, unless otherwise specified. $V_{DD} = +3V$

2. DC = 50 MHz.

3. Insertion loss state.

4. Video feedthru measured with 1 ns rise



ATTENTION
Static-Sensitive Devices
Handling Precautions Required



902510 A, July 1999

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SPDT Reflective Switch – Positive Control 3 Volt, Positive Control, 0-2.5 GHz ITTS107AB

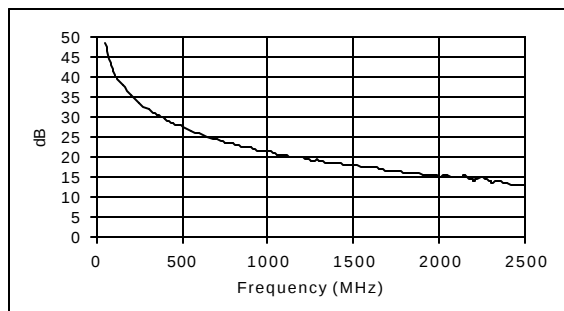
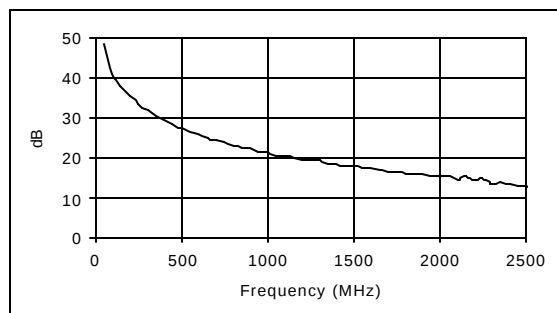
Preliminary

OPERATING CHARACTERISTICS AT 25° C (0, +3 V)

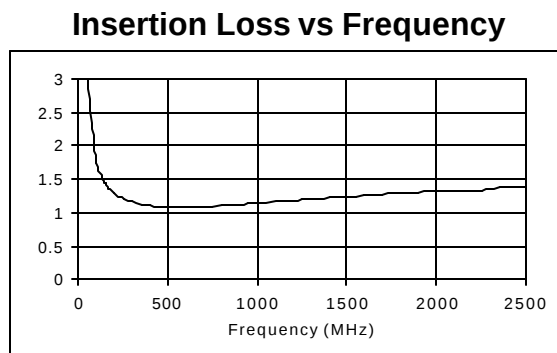
Parameter	Condition ¹	Frequency	Min	Typ	Max	Units
Switching Characteristics	Rise, Fall (10/90% or 90/10%)			6.5		ns
	On, Off (50% CTL to 90/10% RF)			7.5		ns
	Video Feedthru ⁴			5		mV
Input Power for 1 dB Compression	$V_{\text{High}} = +3 \text{ V}$ $V_{\text{High}} = +5 \text{ V}, V_{\text{DD}} = +5 \text{ V}$	0.5 – 2.0 GHz 0.5 – 2.0 GHz		26.5 30		dBm dBm
Intermodulation Intercept Point (IP3)	For two-tone Input Power +5 dBm	0.5 – 2.0 GHz		44.2		dBm
Control Voltages	$V_{\text{Low}} = 0.0 \text{ V}$				20	μA
	$V_{\text{High}} = +3 \text{ V}$				100	μA
	$V_{\text{High}} = +5 \text{ V}, V_{\text{DD}} = +5 \text{ V}$				200	μA

MAXIMUM RATINGS

Rating	Symbol	Value
RF input power ³	$J_{1,2,3}$	2W @ 1 GHz 0/+5 V
Control Voltage	$V_{1,2}$	+0.0, +5 V
Junction Temperature	T_J	+150 °C
Storage Temperature	T_{STG}	-40 °C to +150 °C



Isolation vs Frequency



VSWR vs Frequency

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