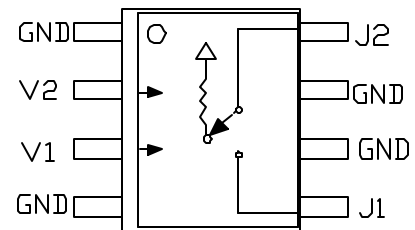


SPST High Isolation Absorptive Switch ITTS159AB

Preliminary

FEATURES

- High Isolation (49 dB @ 1GHz)
- SOIC-8 package
- Non-Reflective
- Usable to 5 GHz
- Positive Control when "floated" with capacitors
- Self-Aligned MSAG®-Switch MESFET Process



DESCRIPTION

The ITTS159AB is a High Isolation SPST non-reflective switch in a plastic SOIC 8 package for commercial applications. The switch operates with -5, 0 volts, but will operate with +5 volts when device is "floated."

TRUTH TABLE

V1	V2	J1-J2
0	-5	Isolation
-5	0	Insertion Loss

ELECTRICAL SPECIFICATIONS AT 25°C (0, -5 V)

Parameter	Test Conditions ¹	Min	Typ	Max	Unit
Insertion Loss	DC ² -0.5 GHz		0.95		dB
	DC-1.0 GHz		1.1		dB
	DC-2.0 GHz		1.6		dB
Isolation	DC-0.5 GHz		58		dB
	DC-1.0 GHz		49		dB
	DC-2.0 GHz		39		dB
VSWR	DC-1.0 GHz		1.2:1		dB
	DC-2.5 GHz		1.6:1		dB

1. All measurements made in a 50 Ω system, unless otherwise specified.
2. DC = 50 MHz.
3. Video feedthru measured with 1 ns rise



Specifications Subject to Change Without Notice

902511 A, July 1999



GaAsTEK
5310 Valley Park Drive
Roanoke, VA 24019 USA
www.gaastek.com
Tel: 1-540-563-3949
1-888-563-3949
(USA)
Fax: 1-540-563-8616

SPST High Isolation Absorptive Switch ITTS159AB

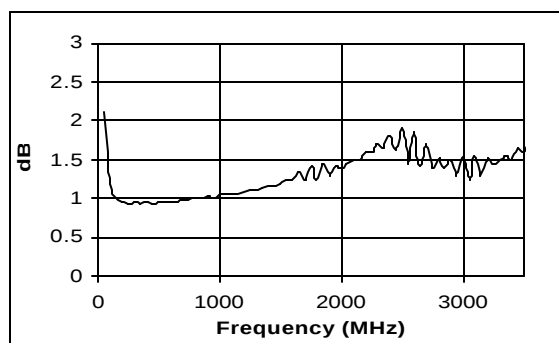
Preliminary

OPERATING CHARACTERISTICS AT 25°C (0, -5 V)

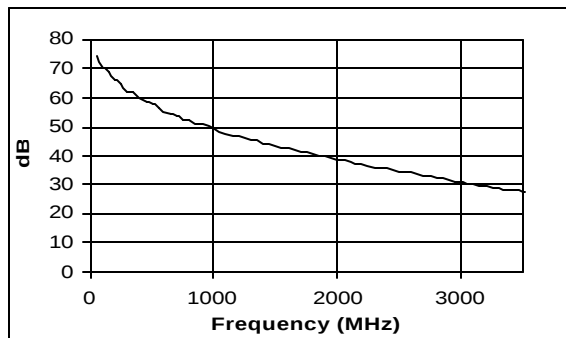
Parameter	Condition ¹	Frequency	Min	Typ	Max	Units
Switching Characteristics	Rise, Fall (10/90% or 90/10%)			5		ns
	On, Off (50% CTL to 90/10% RF)			2.5		ns
	Video Feedthru ³			8.6		mV
Input Power for 1 dB Compression		0.5 – 2.0 GHz		26.5		dBm
Intermodulation Intercept Point (IP3)	For two-tone Input Power +13 dBm	0.5 – 2.0 GHz		41.5		dBm
Control Voltages	$V_{Low} = 0.0 \text{ to } -0.2 \text{ V @ } 200\mu\text{A Max}$ $V_{High} = -5 \text{ V @ } 50\mu\text{A to } -8\text{ V @ } 200\mu\text{A Max}$					

MAXIMUM RATINGS

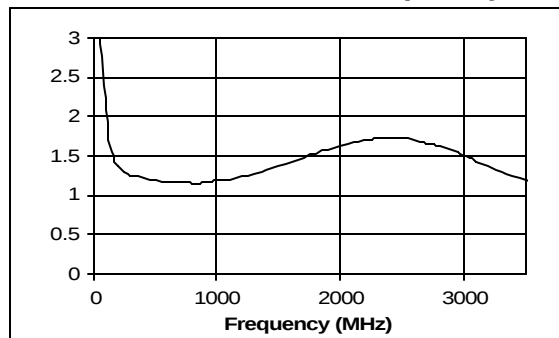
Rating	Symbol	Value
RF input power	$J_{1,2,3}$	1.5W @ 1 GHz
DC input power		1.0W @ 1 GHz
Control Voltage	$V_{1,2}$	8 V
Junction Temperature	T_J	+150 °C
Storage Temperature	T_{STG}	-40 °C to +150 °C



Insertion Loss vs Frequency



Isolation vs Frequency



VSWR vs Frequency

Specifications Subject to Change Without Notice

902511 A, July 1999



GaAsTEK
5310 Valley Park Drive
Roanoke, VA 24019 USA
www.gaastek.com
Tel: 1-540-563-3949
1-888-563-3949
(USA)
Fax: 1-540-563-8616

TRUTH TABLE (POSITIVE CONTROL)

V1	V2	J1-J2
+5	0	Isolation
0	+5	Insertion Loss

POSITIVE CONTROL CIRCUITRY

