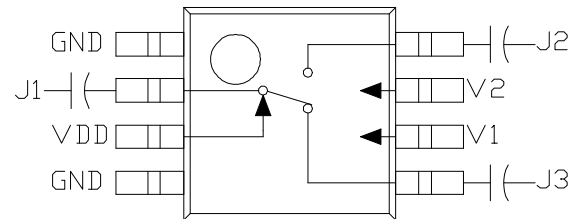


SPDT Reflective Switch – Positive Control

ITT106AJ

FEATURES

- MSOP-8 package
- Low insertion loss (0.5 dB at 900 MHz)
- Positive supply voltage and control
- Pin-for-pin compatible with standard “106” reflective switches
- Self-Aligned MSAG® Process



DESCRIPTION

The ITT106AJ is a low loss SPDT reflective switch in a plastic MSOP package for commercial applications. The switch operates with a positive supply voltage and positive control signals.

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		0.4	0.5	dB
	DC-1.0 GHz		0.5	0.7	dB
	DC-2.0 GHz		1.0	1.2	dB
Isolation	DC-0.5 GHz	25	28		dB
	DC-1.0 GHz	18	22		dB
	DC-2.0 GHz	13	16		dB
VSWR ³	DC-1.0 GHz DC-2.0 GHz		1.2:1 1.75:1	1.5:1 2.0:1	

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



902215 C, June 1999



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SPDT Reflective Switch – Positive Control

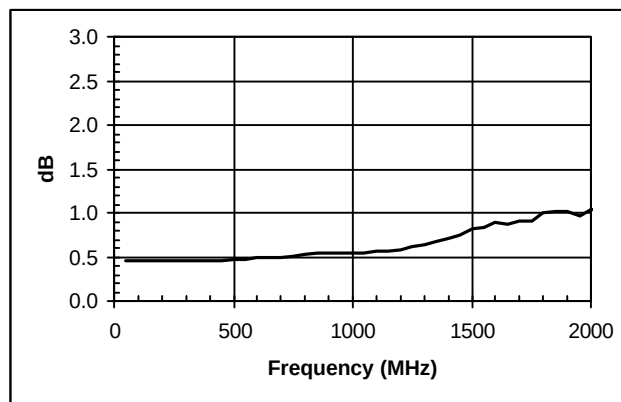
ITT106AJ

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

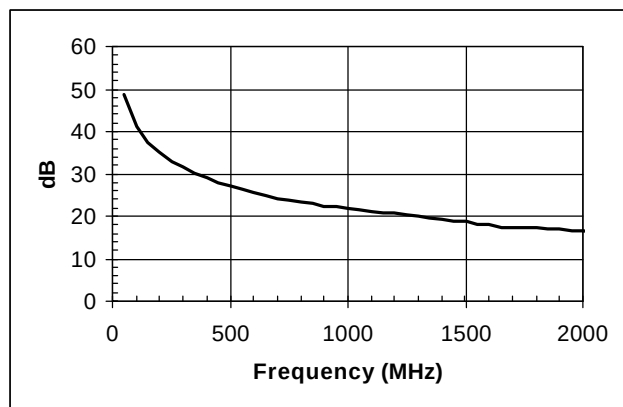
Parameter	Condition ¹	Frequency	Min	Typ	Max	Units
Switching Characteristics	Rise, Fall (10/90% or 90/10%)			1.5		ns
	On, Off (50% CTL to 90/10% RF)			3.2		ns
	Video Feedthru ⁴			11		mV
Input Power for 1 dB Compression	$V_{High} = +3\text{ V}$	0.5 – 2.0 GHz		21		dBm
	$V_{High} = +5\text{ V}, V_{DD} = +5\text{ V}$	0.5 – 2.0 GHz		27		dBm
Intermodulation Intercept Point (IP3)	For two-tone Input Power +5 dBm	0.5 – 2.0 GHz		46		dBm
Control Voltages	$V_{Low} = 0.0\text{ V}$				20	μA
	$V_{High} = +3\text{ V}$				100	μA
	$V_{High} = +5\text{ V}, V_{DD} = +5\text{ V}$				200	μA

MAXIMUM RATINGS

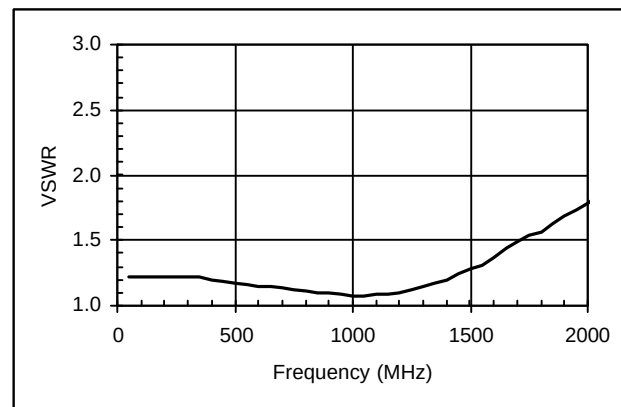
Rating	Symbol	Value
RF input power ³	$J_{1,2,3}$	2W @ 1 GHz 0/+5 V
Control Voltage	$V_{1,2}$	+0.0, +5 V
Junction Temperature	T_J	+150 °C
Storage Temperature	T_{STG}	-40 °C to +150 °C



Insertion Loss vs Frequency



Isolation vs Frequency



VSWR vs Frequency

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