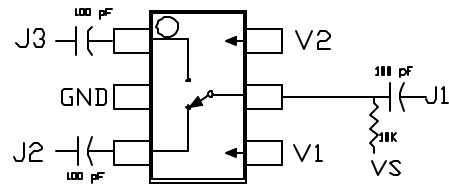


SPDT Reflective Switch – Positive Control ITT140AK

Preliminary

FEATURES

- SOT-6 package
- Low insertion loss (0.6 dB @ 1 GHz)
- Power Handling - >31 dBm @ +5Volts
- Positive control
- Self-Aligned MSAG® Process



External DC blocking capacitors and 10K ohm resistor at VS are required for positive control

DESCRIPTION

The ITT140AK is a low loss SPDT reflective switch in a plastic SOT-6 package for commercial applications. The switch operates with positive control signals.

TRUTH TABLE (POSITIVE CONTROL)

V1	V2	J1-J2	J1-J3
+3	0	Isolation	Insertion Loss
0	+3	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		0.5		dB
	DC-1.0 GHz		0.6		dB
	DC-2.0 GHz		0.9		dB
	DC-2.5 GHz		1.1		dB
Isolation	DC-0.5 GHz		27		dB
	DC-1.0 GHz		21		dB
	DC-2.0 GHz		15		dB
	DC-2.5 GHz		14		dB
VSWR	DC-1.0 GHz		1.3:1		
	DC-2.0 GHz		1.4:1		

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

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%)			2		ns
	On, Off (50% CTL to 90/10% RF)			4.4		ns
	Video Feedthru ⁴			8.8		mV
Input Power for 1 dB Compression	V _{High} = +3 V	0.5 – 2.0 GHz		24		dBm
	V _{High} = +5 V, V _{DD} = +5 V	0.5 – 2.0 GHz		31		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 V				20	μA
	V _{High} = +3 V				100	μA
	V _{High} = +5 V, V _{DD} = +5 V				200	μA

Specifications Subject to Change Without Notice

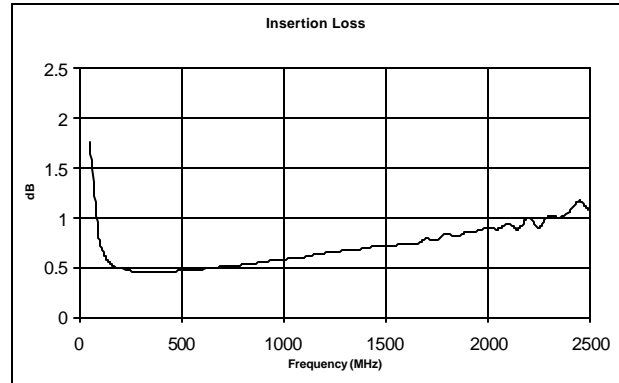
902459 C, July 1999



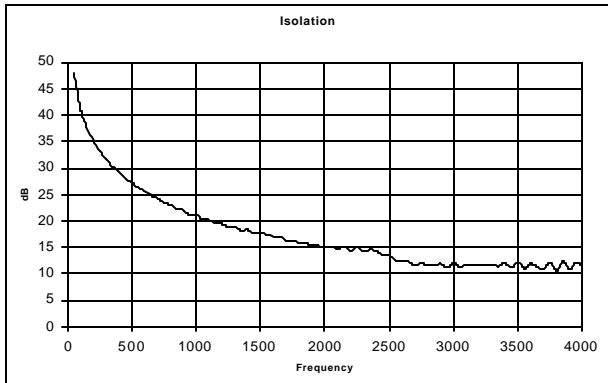
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MAXIMUM RATINGS

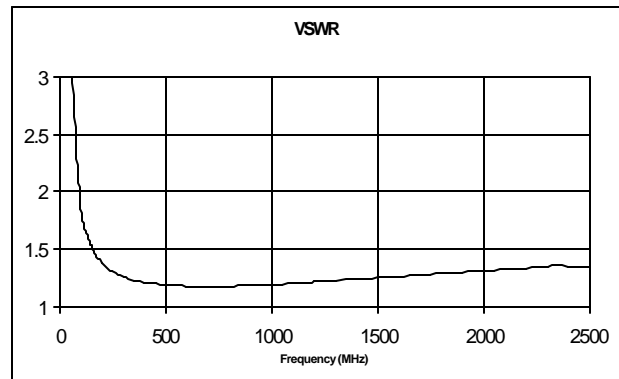
Rating	Symbol	Value
RF input power ³	J _{1,2,3}	3W @ 1 GHz 0/+5 V
Control Voltage	V _{1,2}	+0.0, +5 V
Junction Temperature	T _J	+150 °C
Storage Temperature	T _{STG}	-40 °C to +150 °C



Insertion Loss vs Frequency



Isolation vs Frequency



VSWR vs Frequency

