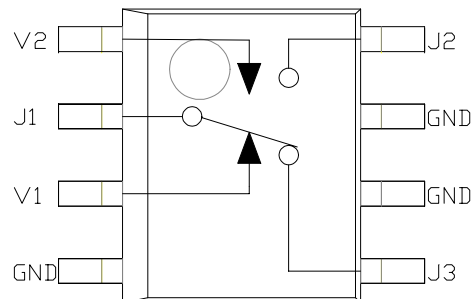


SPDT Non-Reflective Switch

ITTC02AB

FEATURES

- SOIC-8 package
- Non-Reflective
- Usable to 5 GHz
- High Isolation (42 dB @ 1GHz)
- Positive Control when “floated” with capacitors
- Pin-for-pin compatible with standard “C02” matched switches
- Self-Aligned MSAG®-Switch MESFET Process



DESCRIPTION

The ITTC02AB is a SPDT non-reflective switch in a plastic SOIC package for commercial applications. The switch operates with -5, 0 volts, but operates with +5 volts when device is “floated.”

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

Rating	Symbol	Value
RF input power	J _{1,2,3}	2W at 1 GHz 0/-8V 250 mW DC 0/-8V
Control Voltage	V _{1,2}	+0.2V, -8V
Junction Temperature	T _J	+150 degrees C
Storage Temperature	T _{STG}	-40 to +150degrees C

ELECTRICAL CHARACTERISTICS AT 25 °C V₁= 0, -5V, V₂= -5, 0V

Parameter	Test Conditions			Min.	Typ	Max.	Unit
Insertion Loss	DC	-	100 MHz		0.65	0.85	dB
	100 MHz	-	500MHz		0.90	1.10	dB
	500 MHz	-	1 GHz		1.10	1.30	dB
	1 GHz	-	2 GHz		1.20	1.40	dB
Isolation	DC	-	100 MHz	51	63		dB
	100 MHz	-	500 MHz	38	49		dB
	500 MHz	-	1 GHz	33	42		dB
	1 GHz	-	2 GHz	26	30		dB
VSWR	DC	-	100 MHz		1.1	1.2	:1
	100 MHz	-	500 MHz		1.1	1.2	:1
	500 MHz	-	1 GHz		1.2	1.3	:1
	1 GHz	-	2 GHz		1.3	1.6	:1

TRUTH TABLE

V1	V2	J1-J2	J1-J3
-5	0	INSERTION LOSS	ISOLATION
0	-5	ISOLATION	INSERTION LOSS

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SPDT Non-Reflective Switch ITTC02AB

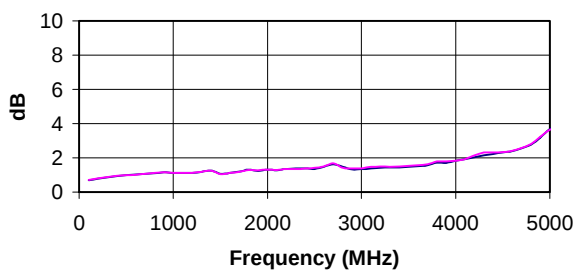
POWER HANDLING AT 25 °C

INPUT POWER FOR 1dB COMPRESSION			TYPICAL -5V CONTROL	TYPICAL -8V CONTROL	UNIT
DC	-	100 MHz	+19	+19.5	dBm
100 MHz	-	500 MHz	+23	+24	dBm
500 MHz	-	1 GHz	+23	+27	dBm
1 GHz	-	2 GHz	+23	+28	dBm

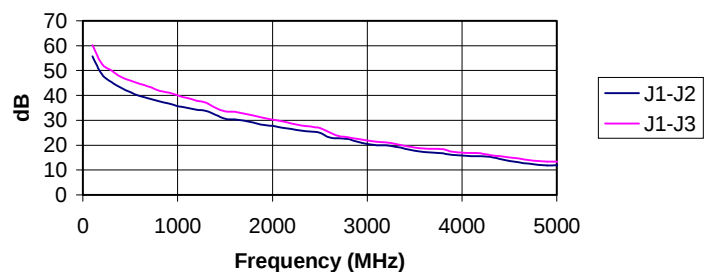
OPERATING CHARACTERISTICS AT 25°C

SWITCHING SPEED	RF RISE TIME (10%-90%)		3	5	mV
	RF FALL TIME (90%-10%)		1.2	2	
	50% CONTROL VOLTAGE TO				
	90% RF (TURN-ON)		5	7	
VIDEO LEAKAGE	10% RF (TURN-OFF)		1	2	
	PEAK TO PEAK VOLTAGE MEASURED		60		
	WITH 1 nS RISETIME PULSE APPLIED				

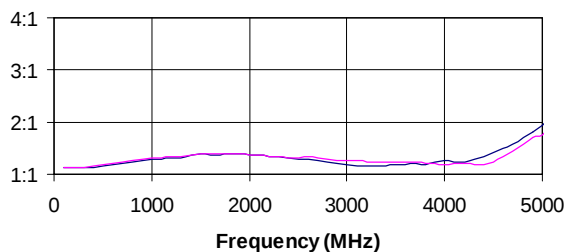
Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR vs. Frequency



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