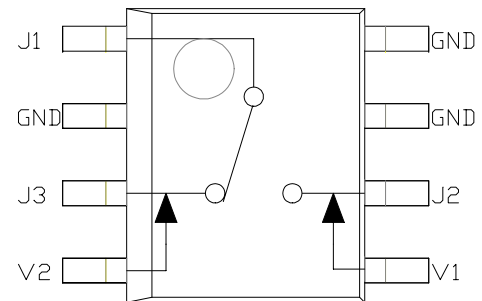


SPDT Reflective Switch ITT239AB

FEATURES

- SOIC-8 package
- High Isolation (34 dB @ 1 GHz)
- Usable to 4 GHz
- Low DC Power Consumption
- Positive Control when "floated" with capacitors
- Pin-for-pin compatible with standard "239" reflective switches
- Self-Aligned MSAG[®] MESFET Process



DESCRIPTION

The ITT239AB is a general purpose SPDT reflective switch in a plastic SOIC-8 package for commercial applications. The switch operates with -5, 0 volts, but operates with +5 volts when device is "floated."

TRUTH TABLE

V1	V2	J1-J2	J1-J3
0	-5	Isolation	Insertion Loss
-5	0	Insertion Loss	Isolation

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

Parameter	Test Conditions ¹	Min	Typ	Max	Unit
Insertion Loss	DC-0.1 GHz		0.3	0.5	dB
	DC-0.5 GHz		0.4	0.6	dB
	DC-1.0 GHz		0.5	0.7	dB
	DC-2.0 GHz		0.7	0.85	dB
	DC-2.5 GHz		0.8	0.95	dB
Isolation	DC-0.1 GHz	52	59		dB
	DC-0.5 GHz	39	43		dB
	DC-1.0 GHz	30	34		dB
	DC-2.0 GHz	21	24		dB
	DC-2.5 GHz	17	21		dB
VSWR ³	DC-1.0 GHz			1.20:1	
	DC-2.5 GHz			1.55:1	

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

SPDT Reflective Switch

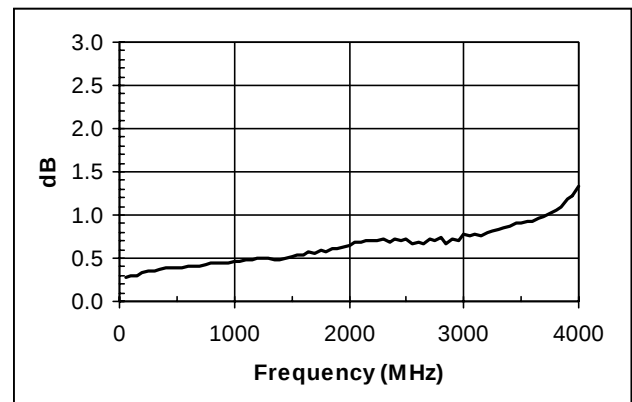
ITT239AB

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

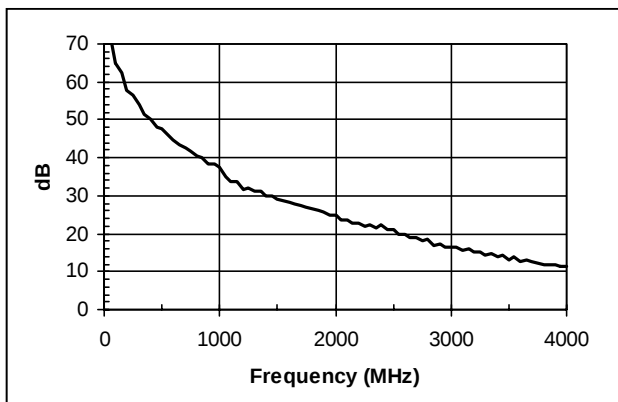
Parameter	Condition	Frequency	Min	Typ	Max	Units
Switching Characteristics	Rise, Fall (10/90% or 90/10%)			3		ns
	On, Off (50% CTL to 90/10% RF)			6		ns
	Video Feedthru ⁴			20		mV
Input Power for 1 dB Compression		0.05 GHz		19		dBm
		0.5 – 2.0 GHz		26		dBm
Intermodulation Intercept Point (IP3)	For two-tone Input Power +5 dBm	0.5 – 2.0 GHz		46		dBm
Control Voltages	$V_{Low} = 0.0$ to -0.2 V				20	μ A
	$V_{High} = -5$ V				20	μ A
	$V_{High} = -8$ V				200	μ A

MAXIMUM RATINGS

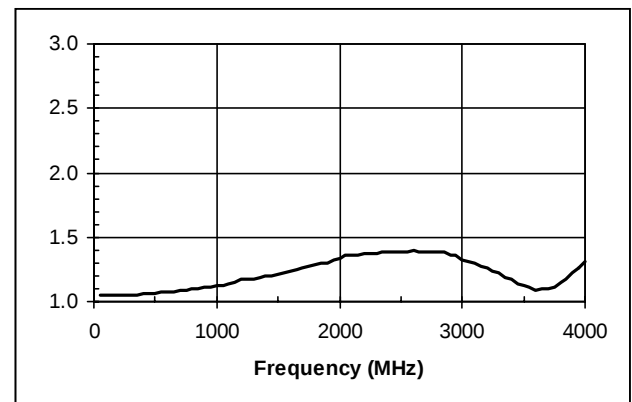
Rating	Symbol	Value
RF input power ³	$J_{1,2,3}$	0.5 W @ 50 MHz 0/-8 V 2 W > 500 MHz 0/-8 V
Control Voltage	$V_{1,2}$	+0.2, -8 V
Junction Temperature	T_J	+150 °C
Storage Temperature	T_{STG}	-40 °C to +150 °C



Insertion Loss vs Frequency



Isolation vs Frequency



VSWR vs Frequency

Specifications Subject to Change Without Notice

902217 D, December 1999



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