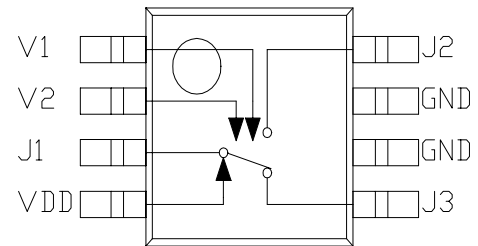


SPDT High Power T/R Switch ITTS501AJ

PRELIMINARY INFORMATION

FEATURES

- MSOP-8 package
- Positive Control
- Self-Aligned MSAG[®]-Switch MESFET Process



Description

The ITT501AJ is a high power SPDT switch in a very small plastic MSOP package for commercial applications. The switch operates +3 to +8 volts.

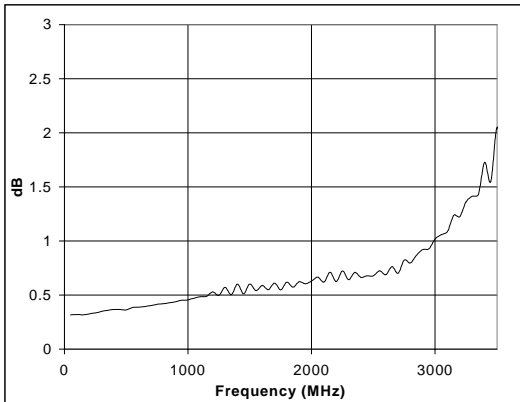
Maximum Ratings (T_A = 25 °C unless otherwise noted)

Rating	Symbol	Value	Unit
RF input power	J _{1,2,3}	4.5	W
Supply Voltage	V _{DD}	10	V
Control Voltage	V _{1,2}	10	V
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-40 to +150	°C

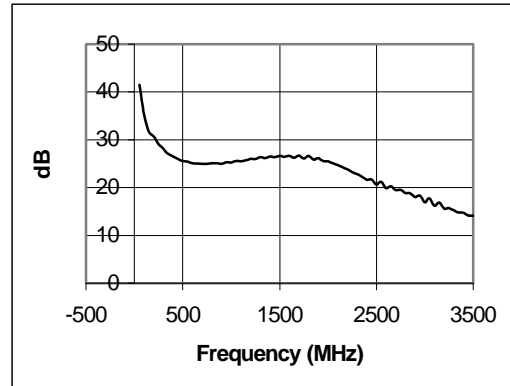
ELECTRICAL CHARACTERISTICS V_{DD}= +5V T_A=25 °C

Parameter	Test Conditions	Min	Typ	Max	Unit
Insertion Loss	DC-1.0 GHz		0.5		dB
	DC-2.0 GHz		0.6		dB
	DC-2.5 GHz		0.7		dB
	DC-3.0 GHz		1.0		dB
Isolation	DC-1.0 GHz		25		dB
	DC-2.0 GHz		26		dB
	DC-2.5 GHz		21		dB
	DC-3.0 GHz		17		dB
Return Loss	DC-1.0 GHz		20		dB
	DC-2.0 GHz		20		dB
	DC-2.5 GHz		22		dB
	DC-3.0 GHz		19		dB
T _{RISE} , T _{FALL} T _{ON} , T _{OFF}	10% to 90% RF, 90% to 10% RF		15		nS
	50% Control to 90% RF, 50 % Control to 10% RF		24		nS
1dB Compression Point	0/5V control	0.5-1.0 GHz	36.5		dBm
	(Table Page 2)	0.5- 2.5 GHz	35.5		dBm
Third Order Intercept	0/5V control	0.5-1.0 GHz	47		dBm
		0.5-2.0 GHz	43		dBm

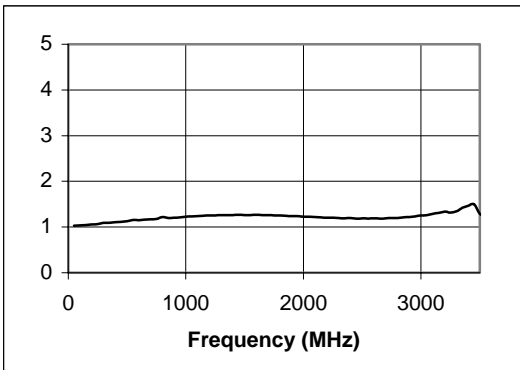




Insertion Loss vs Frequency



Isolation vs Frequency



VSWR vs Frequency

**Input Power for P1dB Compression
Pulsed (10% duty cycle)**

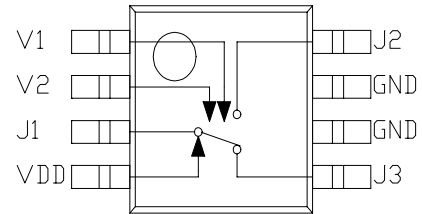
Vdd	1GHz (dBm)	2.5GHz (dBm)
3V	29	29
5V	36.5	35.5
8V	40	38
Input Power for P1dB Comp CW		
Vdd	1GHz	2.0 GHz
3V	28.5	27.5
5V	34	33

Caution: Do not operate in 1dB compression at power levels greater than +35 dBm.

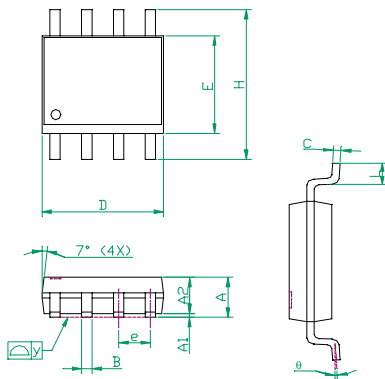


Truth Table

Vdd	V1	V2	J1 to J2	J1 to J3
3	Vdd	0	Isolation	Insertion Loss
3	0	Vdd	Insertion Loss	Isolation
5	Vdd	0	Isolation	Insertion Loss
5	0	Vdd	Insertion Loss	Isolation
8	Vdd	0	Isolation	Insertion Loss
8	0	Vdd	Insertion Loss	Isolation



8L MSOP OUTLINE (SUFFIX "AJ/GJ")



DIMENSION TABLE

SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.81	1.02	1.22	0.032	0.040	0.048
A1	0.05	---	0.20	0.002	---	0.008
A2	0.75	0.86	0.97	0.030	0.034	0.038
b	0.25	0.30	0.40	0.010	0.012	0.015
C	0.13	0.15	0.23	0.005	0.006	0.009
D	2.90	3.00	3.10	0.114	0.118	0.122
E	4.80	4.90	5.00	0.189	0.193	0.197
E1	2.90	3.00	3.10	0.114	0.118	0.122
e	---	0.65	---	---	0.026	---
L	0.40	0.53	0.70	0.016	0.021	0.026
y	---	---	0.10	---	---	0.004
θ	0°	---	6°	0°	---	6°

NOTES:

1. Package body sizes exclude mold flash and gate burrs
2. Dimension L is measured in the gage plane
3. Tolerance 0.10mm unless otherwise specified
4. Controlling dimension is millimeter. Converted inch dimensions are not necessarily exact.
5. Package will meet JEDEC Standards.