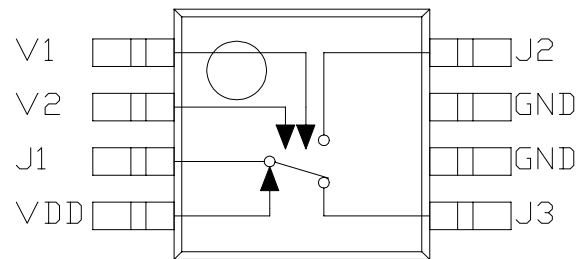


SPDT 5.0-6.0 GHz T/R Switch ITTS506AJ

PRELIMINARY INFORMATION

FEATURES

- 5.0 - 6.0 GHz Operation
- Positive Control
- MSOP-8 package
- No external Components Required
- Self-Aligned MSAG®-Switch MESFET Process



Description

The ITTS506AJ is a medium power 5.0-6.0 GHz SPDT switch in a very small plastic MSOP package for commercial applications. The switch operates +3 and +5 volts. This switch is ideal for UNII and HYPERLAN applications.

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

Rating	Symbol	Value	Unit
RF input power	J _{1,2,3}	3.5	W
Supply Voltage	V _{DD}	8	V
Control Voltage	V _{1,2}	8	V
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-40 to +150	°C

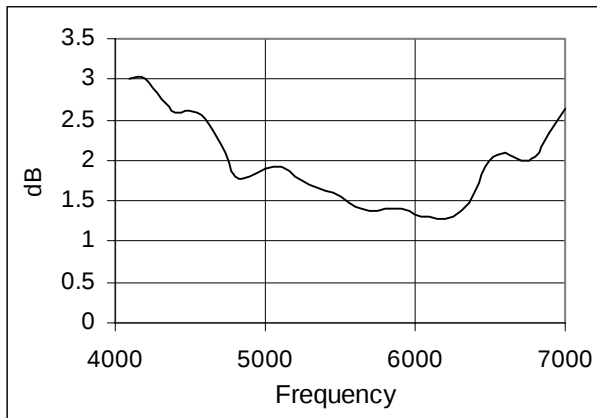
ELECTRICAL CHARACTERISTICS V_{DD}= +5V T_A=25 °C

Parameter	Test Conditions	Min	Typ	Max	Unit
Insertion Loss ^{1,2}	5.0 - 6.0 GHz		1.6		dB
	5.5-6.0 GHz		1.4		dB
	5.0 - 5.5 GHz		1.7		dB
Isolation ²	5.0 - 6.0 GHz		25		dB
	5.5 - 6.0 GHz		28		dB
	5.0 - 6.0 GHz		23		dB
Return Loss	5.0 - 6.0 GHz		8.5		dB
	5.5 - 6.0 GHz		9.5		dB
	5.0 - 5.5 GHz		8.0		dB

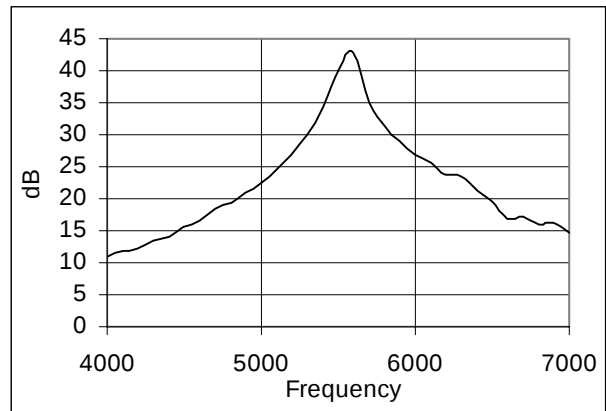
OPERATING CHARACTERISTICS 25 °C

T _{RISE} , T _{FALL}	10% to 90% RF, 90% to 10% RF		10		nS
T _{ON} , T _{OFF}	50% Control to 90% RF, 50 % Control to 10% RF		25		nS
1dB Compression Point	0/3V control	5.0 – 6.0	32		dBm
	0/5V control		35		dBm
Third Order Intercept	0/5V control	5.0 – 6.0	44		dBm
	Pin=25dBm per tone				

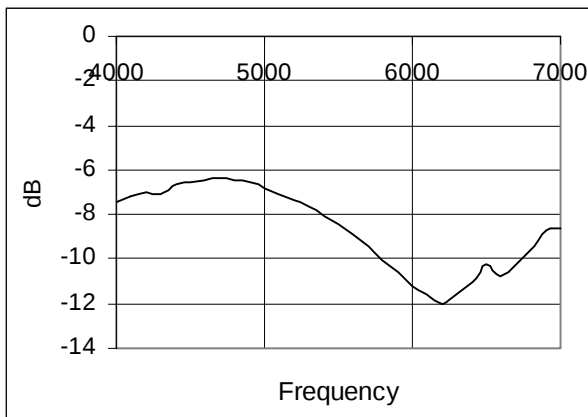
Note: 1. Insertion loss does not vary more than 0.003dB/°C.
2. Measurements made at small signal



Insertion Loss vs Frequency



Isolation vs Frequency



Return Loss vs Frequency

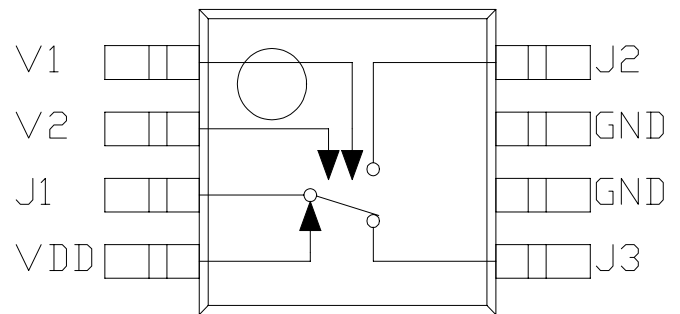


SPDT 5.0-6.0 GHz T/R Switch ITTS506AJ

PRELIMINARY INFORMATION

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

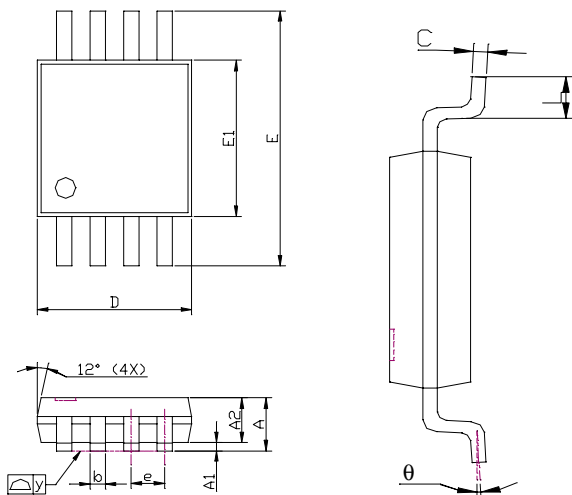


PINOUT

It Is Recommended That 500ohm Resistors Are Used At
The Control Lines.

No Other External Components Are Required

8L MSOP (SUFFIX "AJ")



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 follows JEDEC Standards