# The Microwave Switch Specification Sheet

**Switch Type**

A microwave switch is either absorptive or reflective, which refers to the input impedance of the disconnected port.

A microwave switch can have multiple ports (e.g., SPDT, SP4T)

**Bandwidth (Hz)**

A switch, like all other devices, can effectively operate only within a finite bandwidth (e.g., 2-5 GHz or 300-400 MHz).

**Input Impedance (Γ, return loss, VSWR)**

This of course is dependent on the state of the switch (i.e., whether a port is connected or disconnected).

**Insertion Loss (dB)**

Typically this is 2 dB or less for good switches, but is somewhat dependent on frequency (insertion loss increases with frequency).
**Maximum Input power (dBm)**

Switches have a **maximum** input power. Typical values range from 10 to 25 dBm.

**Switching Speed (seconds)**

The state of a microwave switch **cannot** change instantaneously. It takes some small but non-zero amount of time to change from one state to another. Typical values range from 0.1 to 10.0 µ−seconds.

**Isolation (dB)**

Typical values range from 20 to 50 dB.

**Switch Logic**

Describes the control line values required to switch the port switch state. Typically **TTL** logic values are used—0 volts for one state and 5V for the other.

**DC Power**

Switches are **not** passive devices! They require a D.C. voltage (5 or 15 V typical) and will draw some amount of D.C current. The product of the two of course is equal to the D.C. **power** delivered to the switch (typically << 1W)