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 ($\Gamma$, 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)