A broadband single pole double throw (SPDT) switch has been developed for use in the range of 0 to 30 GHz. The switch consists of a cascade of a MEMS ohmic series and a capacitive shunt switch with floating electrode in each branch. It is manufactured on high-resistive silicon using surface micro-machining technology. The SPDT switch provides an insertion loss better than -0.6 dB, return loss smaller than -20 dB, and isolation better than -40 dB in nearly the whole band. A switching voltage around 50 V is needed. The switch is used as a building block for more complex switching networks. The fabrication process is described and the measured RF-performances are reported and discussed. A failure analysis exhibits a lifetime up to 10^9 actuations.

- 0 to 30 GHz, broadband RF-MEMS, broadband single pole double throw switch, capacitive shunt switch, coplanar waveguides, fabrication process, failure analysis, floating electrode, micro-electromechanical devices, micromachining, microswitches, microwave switches, ohmic series, passive circuits, RF performances, SPDT, surface micromachining, switches, UHF devices

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