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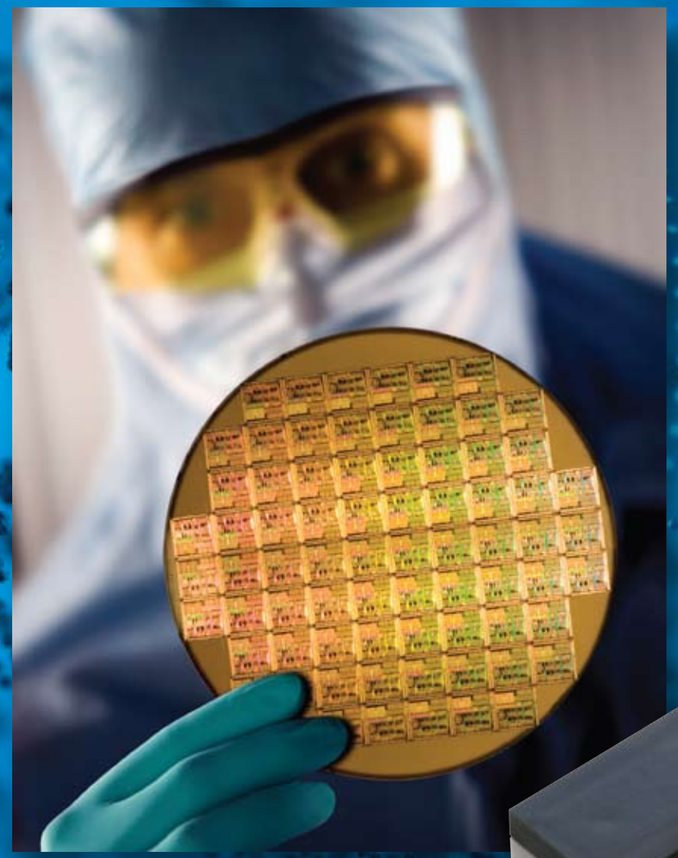
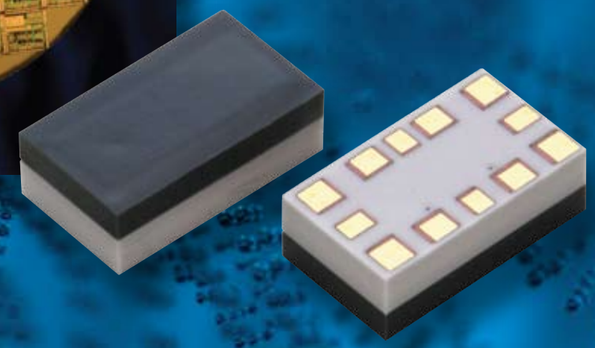
55 Commerce Drive, Schaumburg, IL 60173 U.S.A.

RF MEMS Switch

RF Switch Based on MEMS Technology



- Superior high-frequency characteristics at 10GHz (50Ω) typical
- Ultra-miniature, 5.2 × 3.0 × 1.8mm
- Contact Reliability 100 million operations
- 0.5mA at 0.5VDC Resistive load
- Rated power consumption of 10μW



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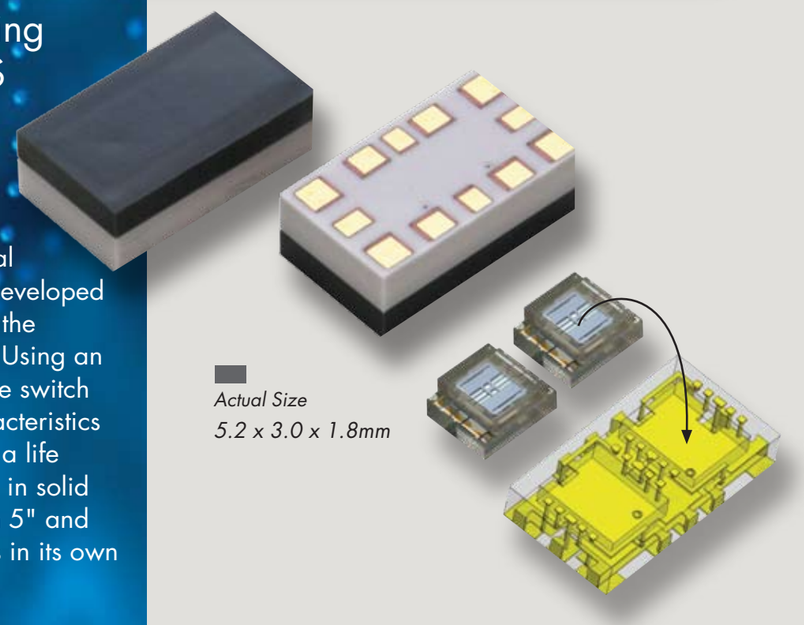
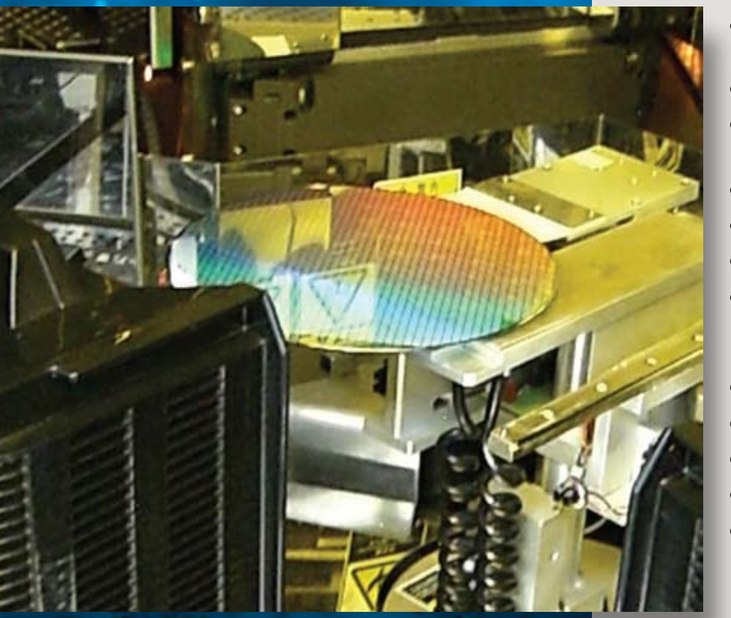
RF MEMS Switch

Mechanical RF Switching Relay Based on MEMS Technology

Combining its long history of innovative relay products with its MEMS (Micro Electro Mechanical System) expertise, Omron has developed a new RF MEMS Switch to meet the requirements of the ATE market. Using an electrostatic drive mechanism, the switch combines the desirable HF characteristics of electromechanical relays with a life expectancy generally only found in solid state relays. Omron utilizes both 5" and 8" MEMS wafer production lines in its own foundry facilities.



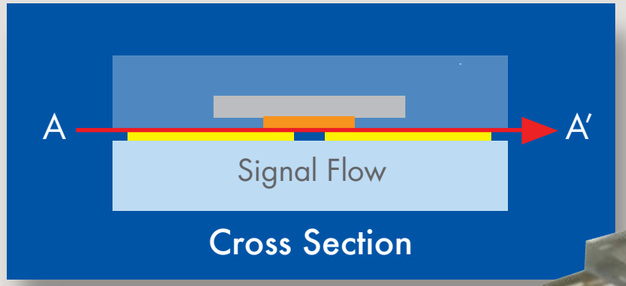
Actual Size
5.2 x 3.0 x 1.8mm

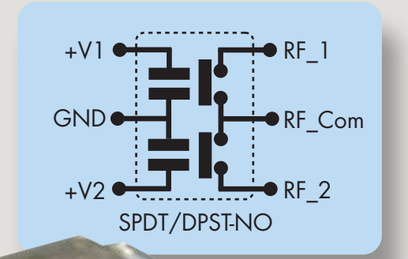


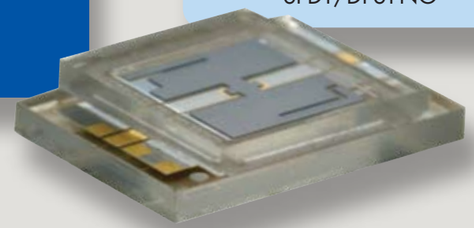
Watch for innovative products to come from our NEW 8" MEMS Wafer Fabrication facility.

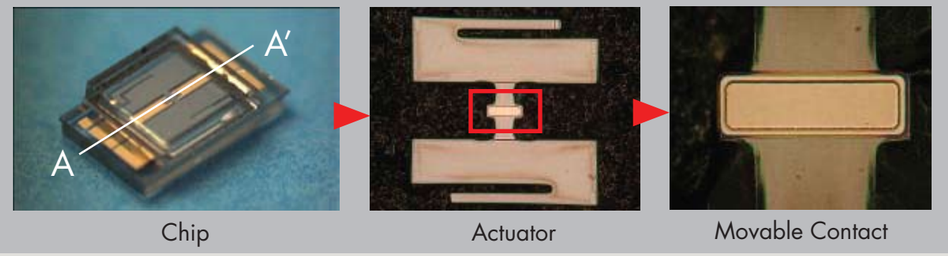
- All the advantages of electromechanical relays (initial CR of 1.0 Ohms)
- Dimensions: 5.2 × 3.0 × 1.8mm / LGA12
- Two contact sets with independent operation of the signal paths (1FormC or 2FormA).
- Life Expectancy Rating: 100 Million Operations
- Testing beyond 1 Billion Operations
- Power consumption: 10μW max
- Excellent frequency characteristics up to a rated bandwidth of 8 GHz, 10 GHz typical.
- High linearity (low noise distortion)
- Very low insertion loss (1dB)
- High isolation (30dB)
- High-speed operation (100μs max)
- RoHS Compliant

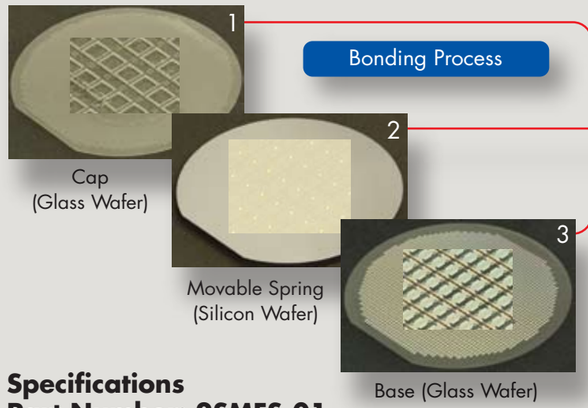
RF–MEMS Switch Design

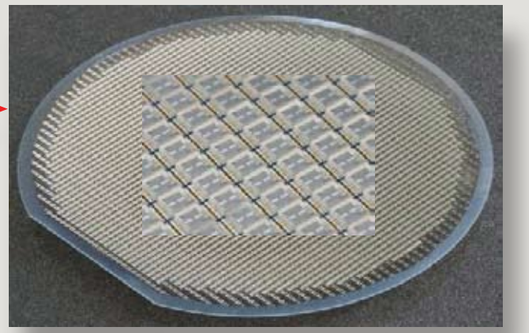












Completed Wafer

Specifications
Part Number: 2SMES-01

Load	Resistive Load
Rated Load	0.5mA at 0.5VDC
Rated Carry Current	DC: 100mA RF: 30dBm
Max. Switching Voltage	0.5VDC
Max. Switching Current	0.5mA DC
Max. Switching Capacity	0.25mW

Item	2GHz	8GHz	12GHz
Isolation	—	30dB	—
Insertion Loss	—	1dB	3dB
Return Loss	—	10dB	—
Max. Peak Power	36dBm	—	—
Max. Carry Power	30dBm	—	—

Notes:
1. The impedance of the measurement system is 50Ω.
2. The above values are initial values.
3. The values are for a load with VSWR of ≤1.2.