GE Research has over 15 years of experience in offering high performance highly reliable RF MEMS on fused silica technologies. Originally developed for GE’s internal business units and later spun out for high volume commercial opportunities through Menlo Microsystems, GE Research Metal MEMS combines the great performance of MEMS RF switches with the integration density of thin film fused silica. This advanced technology enables a discriminating capability for high performance integrated RF and millimeter wave assemblies.

RF MEMS Capabilities

- Integrated RF MEMS switch element
- DC to 50GHz operation
- Greater than 3 billion cycle reliability
- Thin fused silica substrate with TGV (100 to 300um)
- Wafer level bonding of fused silica for capping and multilayer module buildup
- Integrated passives (resistors, capacitors)
- Flipchip and BGA attach options available
- 28,000 sq. ft. class 100 cleanroom
- ISO 9001 2015 certified, ITAR compliant

RF MEMS Offerings

- Custom integrated modules
- Design and electromagnetic modeling
- System design and packaging integration
- Supply chain options for all volume needs
- Up to 70GHz module and wafer testing

All fused silica stack up with integrated RF MEMS, passives, TGVs and BGA attach

Monolithic Ku true time delay switch

Characteristic performance @ 30GHz

- 0.3 dB IL
- 0.1 dB IL variability 40 to 125°C
- 5° phase variability 40 to 125°C
- 20 dB return loss
- IP3>75 dB
- 2° part to part variability in ON state phase
- 0.05 dB of part to part IL variability
- 20 dB isolation in OFF state

For additional information, please contact:
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