ADVANTEST

ADVANTEST CORPORATION

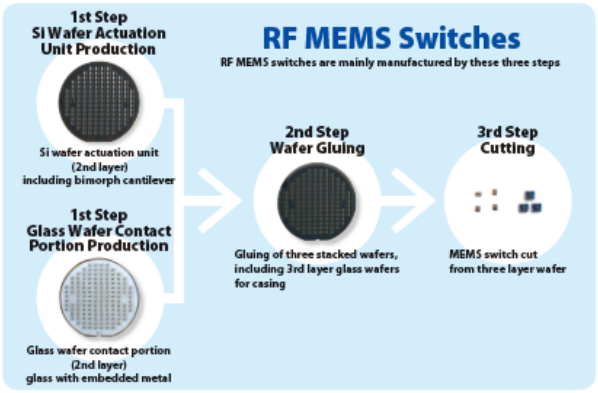
High-Frequency, Low Power Consumption MEMS Relay

Advantest's high-frequency MEMS relay utilizes piezoelectric actuation to achieve low power consumption and high reliability. Via Advantest's proprietary deposition technology, the relay features a piezoelectric film only 1 micron thick, making low actuation voltage possible. The relay also has high reliability, using contact-point control technology honed in Advantest's semiconductor testing equipment, and it can handle up to 20 GHz high-frequency transmission, using Advantest's high-frequency measurement technology.

MEMS Relay Applications

Semiconductor Testing Equipment, High-Speed Communications Devices, High-Frequency Measurement Equipment

MEMS Relay Production Process



MEMS R&D & Production

R&D Centers :	Advantest Gunma R&D Center Advantest Laboratories (Sendai) Brought to Practicality Under the Guidance of Prof. Masayoshi Esashi of Tohoku University
Production Center :	Advantest Component (Sendai) In-House Production of MEMS-Related Products, Compound Semiconductors, and SiPs for High-Frequency Modules

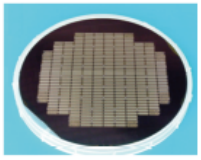
Main MEMS Relay Features (for reference)

Frequency Range :	DC- 20 GHz
Actuation Voltage :	12 V
Contact Form :	SPDT
Size (2 types) :	5.4 x 4.2 x 0.9 mm 2.9 x 3.4 x 0.9 mm
Isolation :	> 20 dB (to 20 GHz)
Insertion Loss :	< 1 dB (to 20 GHz)
Characteristic Impedance :	50 Ω

MEMS Probe Pin

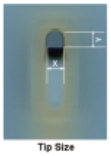
Probe pins for probe cards used in wafer test are manufactured using MEMS technology.

Probe Pitch: P	60um / 50um	
Probe Length : L	978.5um	
Probe Width : W	50um / 40um	
Tip Size	X: 15um	Y: 10um
Tip Total Thickness	39.0um	
SEM Image		



6 inch Wafer

Probe Size



Tip Size

About Advantest

A leading company in measurement and testing, Advantest is involved in industries that require leading-edge testing technology, such as electronics, telecommunications, and semiconductor production. In the semiconductor and component test system business, Advantest offers test systems that support reliability in every semiconductor device category, and holds global market share of roughly 50 %.