

SEREEL2-TPA Two-PHOTON ABSORPTION

To enable laser Single Event Effects (SEE) testing and to simulate the ionisation tracks of charged particles, ultrashort laser pulses are focussed onto the device under test (DUT).

TPA in SEE testing relies on a high photon flux at the focus that enables the absorption of two photons having a combined energy above the bandgap of the target device. For silicon, this requires photons of wavelengths longer than 1100 nm. As TPA is confined in a small volume, it provides 3D sectioning capability for the radiation sensitive regions. Also, due to no out-of-focus absorption, TPA makes backside testing of DUTs possible.

Companies can benefit from the SEREEL2-TPA system to screen DUTs for SEE in your own facility, saving test and travel costs. Radtest Ltd can assist you with confirmation testing in our facilities or arrange for heavy ion testing time.

Radtest Ltd provides installation, training and after-sales support for SEREEL2-TPA.

- SEREEL2-TPA delivers varied laser scanning routines through our bespoke control software SEE SIMULATION
- Full registration of upsets to die locations
- SEE screening of large numbers of devices for use in hostile radiation environments
- Autofocussing and levelling of the DUT
- TPA system provides simple operation, suitable for flip chips and wire bonded devices
- Spiral scanning for ultimate positional precision for high throughput part screening
- Raster scanning for R&D testing or less speed critical applications
- Fully enclosed for safe operation
- A full warranty is provided
- Non-ITAR



The setup is highly customisable and options include

- Pump laser + OPA
 - 1.0 mJ or 2.0 mJ pump laser
 - pulse duration of ~200 fs
 - output pulse energy at 1200-1300 nm >30 μ J
- XY movement from 100 mm to 300 mm with different step sizes from 0.05 μ m to 0.6 μ m
- Piezo stages with 250 μ m and 800 μ m of XY movement available
- Extended warranty possible with order

For further information please contact **Radtest Ltd**
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