BGA-TF Test Fixture
Model 40312

The Model 4012 Very Fast TLP Plus (VFTLP+) system required 5 years to create a system which can simulate the CDM test in the time domain. This very fast hardware captures the fastest parts of the high speed waveforms never quantatively identified before. The instrumentation developed for this system provides accurate waveform measurements of circuits needed for CDM design. The VFTLP+ short pulse tester provides both a very fast pulse source and extremely fast response current and voltage sensors. In addition to the well-known I-V data used for analysis of electrical characteristics of ESD protection structures, the VFTLP+ system captures both voltage and current waveforms at the Device Under Test (DUT).

The BGA-TF Test Fixture is designed to be used with the VFTLP+ system. It provides high pulse current measurements of CDM type protection directly to two balls with minimum inductance without an expensive BGA high speed socket. With the DUT isolated above ground plane, there is no capacitance to ground effects on the current and voltage waveforms; measured directly at the package terminals. While of limited value, this test is as close to the internal circuit operation as it is possible to achieve from the outside. This DUT fixture allows two pin testing to determine the amount of correlation with CDM.

To minimize the parasitic inductance from connections to the VFTLP+ system, this test will be most effective only when testing closely spaced balls. Metal and silicon failures from high currents at CDM pulse widths will be achieved; but internal GOX stress may not closely simulate the CDM test.

Metal/Silicon failure levels with this fixture combined with gate oxide failure levels using direct VFTLP+ failure measurements, can be combined to improve correlation with CDM. Continuous leakage monitoring through the measurement connection allows the test pulse failure level to be constantly monitored in situ as the test pulse amplitude increases.

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VFTLP+ ACCESSORIES