

S-parameter Test Method

The S-parameter data files are two port descriptions of American Technical Ceramics' 500 Series BMC Broadband Microwave Capacitors. These S-parameter data files can be used as element descriptions in modeling.

TEST CONFIGURATION:

1. Vector Network Analyzer, HP Model 8722D
2. Universal Test Fixture Mainframe, Inter-Continental Model TF-3001B
3. Midsection assembly(s), Inter-Continental:
P/N A0115386.
4. Insert assembly(s), Inter-Continental:
P/N A0115387
5. Calibration Kit, Inter-Continental TRL-3004A
6. RF Test Cable Set, W. L. Gore P/N FEOBNOBM025.0

The vector network analyzer that was used to generate the S-Parameter files has a four receiver architecture. A full two port TRM/TRL calibration was performed prior to all measurements.

The test fixture referenced above utilizes 2.4 mm precision transitions. All fixture elements including test cables were de-embedded and operate in a 50 ohm test environment.

The insert assembly consist of a 50 ohm microstrip line implemented on a 25 mil thick alumina substrate with a gap at its center to accomodate the BMC test sample. The BMC test sample was placed in a series through configuration across the gap. The device under test was mounted in the test fixture, such that the terminations were in contact with the microstrip traces. An electrical delay of approximately 6 pico seconds was implemented in order to approximate the reference plane at the center of the capacitor.

Capacitance range covered: 0.1 pF to 10 pF

Frequency range covered: 50 MHz to 26.5 GHz.

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