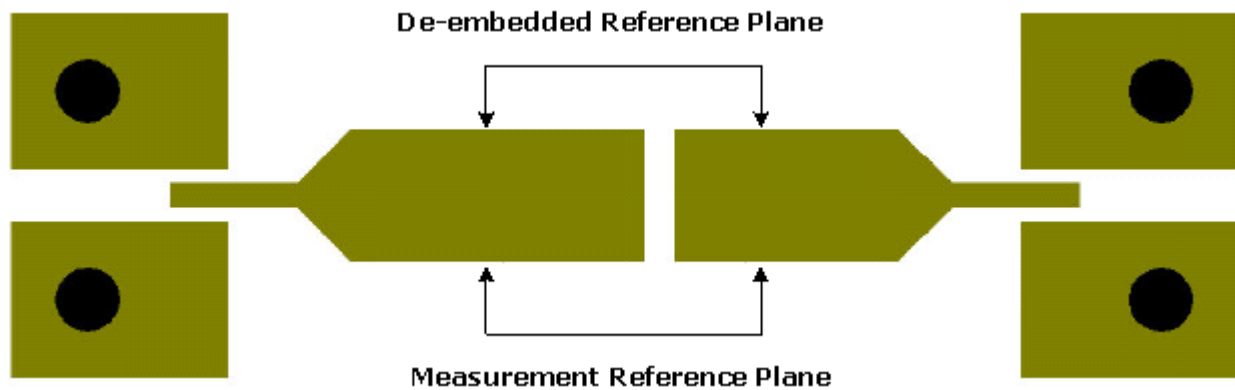


## Insertion Loss Data

Component: BB0502NPO821M16VP1R0  
Global Part Number: MBB0502N821MGP5N8-  
Dielectric: NPO  
Capacitance: 820pF, 1pF  
Voltage: 16VDC  
Size: 0502  
Temperature Coefficient:  $\pm 30\text{PPM/C}$  (-55C, +125C)

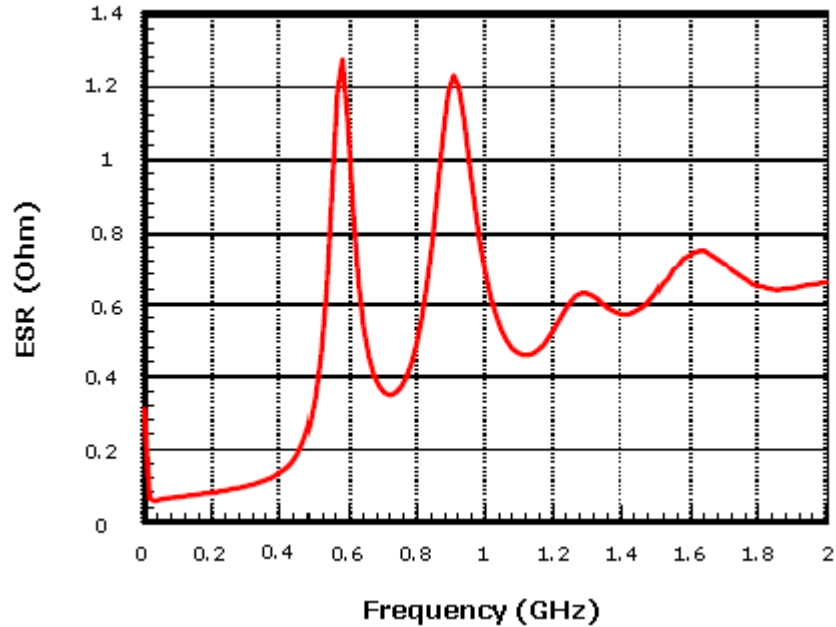
Measured on fused silica (500MHz-40GHz)  
Line Width 23 Mils  
Gap Width 5 Mils



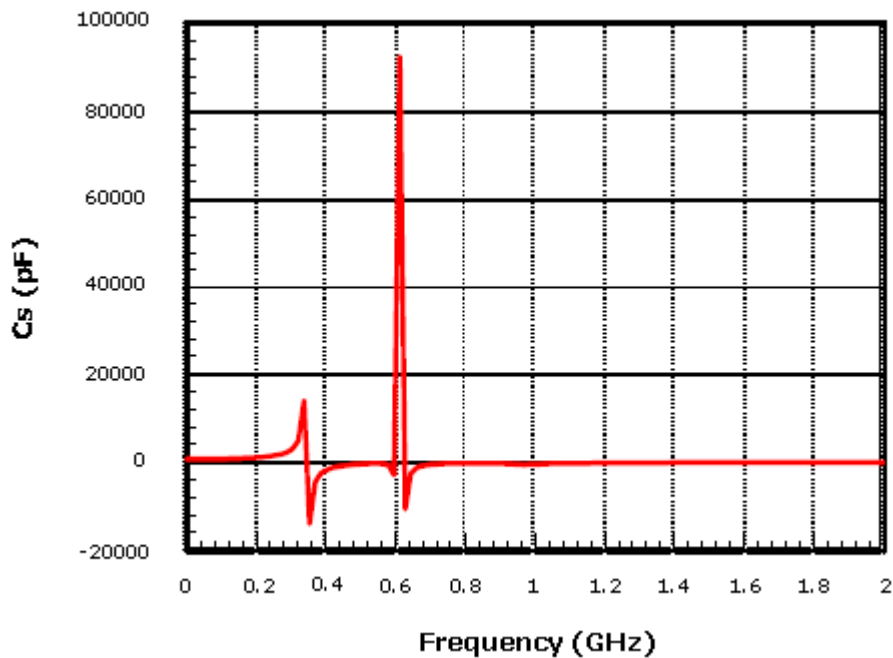
**Figure 1** - 10mil Quartz Test fixture.

The capacitors were mounted to pad stacks on 10-mil fused silica. Series 2-port S-parameter measurements were made using a vector network analyzer that was calibrated to the outer edge of the pad stacks. Test fixture artifacts were removed from the initial S-parameter data by de-embedding the pad stack effects, and subsequently extracting stray capacitance to ground using a pi-network equivalent circuit. The presented data is thus nominally test-fixture independent. Presented below is the de-embedded and extracted data.

## Insertion Loss Data

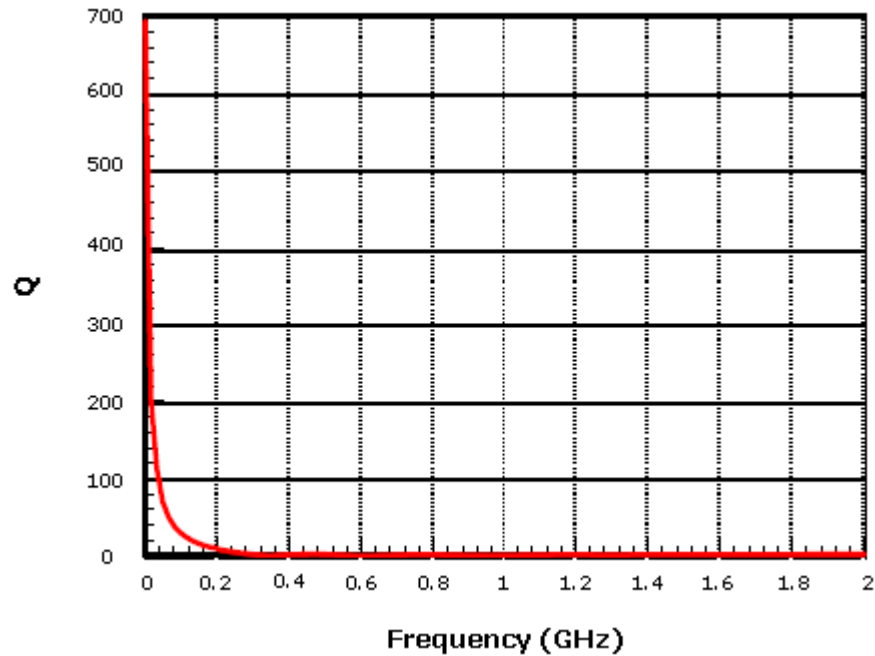


**Figure 2** - Average effective series resistance (ESR) for BB0502NPO821M16VP1R05 capacitor. Five parts were measured and visual average was taken.

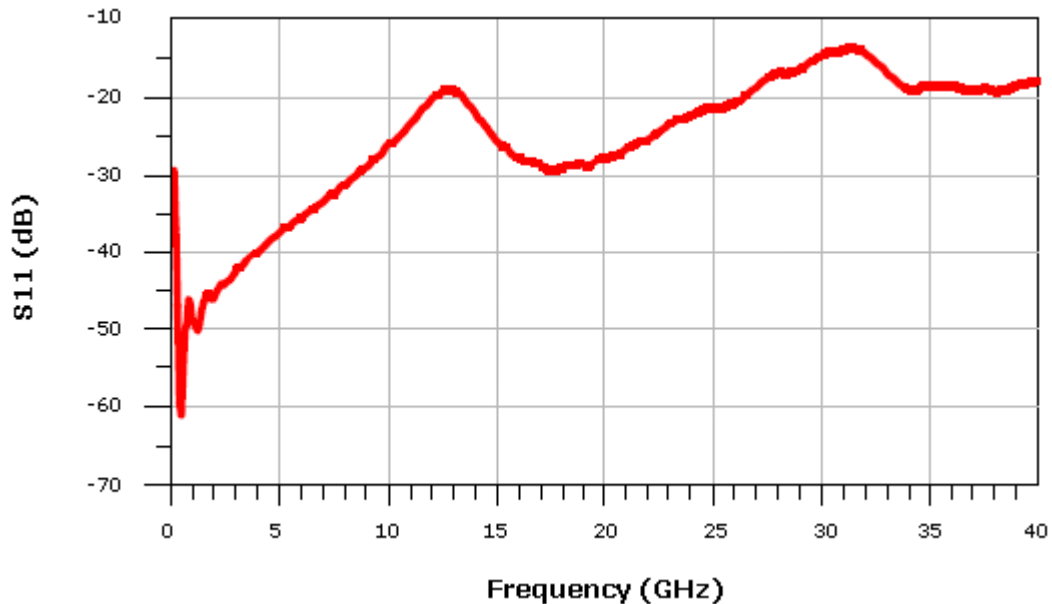


**Figure 3** - Average series capacitor (Cs) for BB0502NPO821M16VP1R05 capacitor. Five parts were measured and visual average was taken.

## Insertion Loss Data

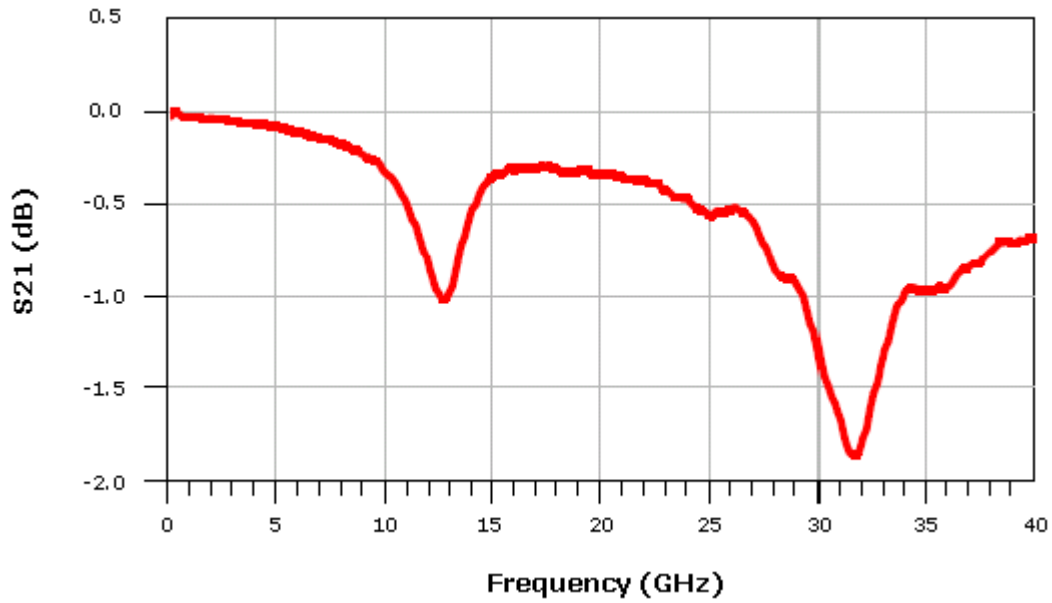


**Figure 4** – Average quality factor (Q) for BB0502NPO821M16VP1R05 capacitor. Five parts were measured and visual average was taken.



**Figure 5** - Average magnitude extracted S11 (dB) of Capacitor: BB0502NPO821M16VP1R05 Lot: 011121-38 measured on 10mil Quartz. {Transmission line effects and capacitance to ground removed.}

## Insertion Loss Data



**Figure 6** – Average magnitude extracted S21 (dB) of Capacitor: BB0502NPO821M16VP1R05 Lot: 011121-38 measured on 10mil Quartz. {Transmission line effects and capacitance to ground removed.}

Test Measurements and Modeling Services Provided by [Modelithics](http://Modelithics.com). 