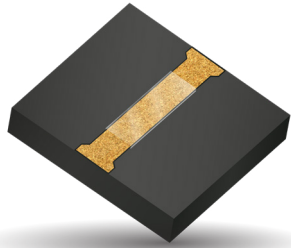


# Transmission Line MIM Capacitor (Metal-Insulator-Metal)



## GENERAL DESCRIPTION

AVX Thin Film Technologies is pleased to introduce a novel MIM (Metal-Insulator-Metal) capacitor using a transmission line wire bond pad structure with backside ground.

The TL MIM can be supplied on quartz, alumina, glass and other substrates to minimize losses. Copper traces are used for optimal conductivity. Front and backside gold metalization make this device suitable epoxy, gold wire bond/ribbon bond attachments.

## BENEFITS

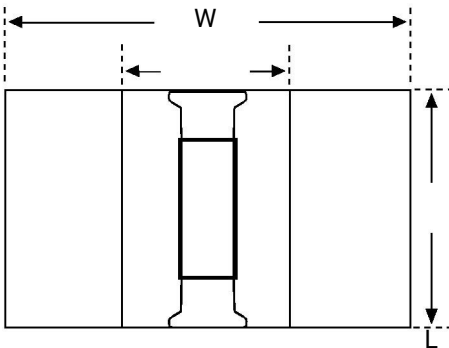
- HFSS Design Unique for every device
- Gold Wirebondable
- Copper Conductor Design for improved Circuit Conductivity
- Designs Optimized for RF/Performance
- ROHS Compliant

## SUBSTRATE MATERIALS

- Alumina (Al<sub>2</sub>O<sub>3</sub>)
- Quartz

## MECHANICAL DIMENSIONS

Based on Transmission Line Design Request



Length is determined by transmission line

## APPLICATIONS

- DC Blocking at UHF
- High Frequency Link
- RF Microwave applications

## CAPACITOR MATERIALS

| Rated Voltage | Specific Capacitance          | Dissipation Factor | TCC (ppm/°C) |
|---------------|-------------------------------|--------------------|--------------|
| <100          | 50 - 100 * pf/mm <sup>2</sup> | <0.1%              | ±60          |

\*Actual maximum capacitance values depend on transmission line dimensions

## TEST METHODS

| Specification       |                | Limit                        |
|---------------------|----------------|------------------------------|
| MIL-STD-883-2011.10 | BOND STRENGTH  | > 3 gm min. w/0.001" Au Wire |
| MIL-STD-883-2019.10 | SHEAR STRENGTH | Size Dependent See Procedure |
| MIL-STD-202-108     | LIFE           | 1000 hrs @ 125°C             |

# Transmission Line MIM Capacitor

(Metal-Insulator-Metal)

## GENERAL CHARACTERISTICS

| CHARACTERISTIC   | DESIGN DEPENDENT      |
|------------------|-----------------------|
| Capacitor Range  | 0.3 - 15 pF (typical) |
| Tolerance        | ± 20%                 |
| Backing          | Gold Metalization     |
| Termination Type | Gold Wire Bond        |

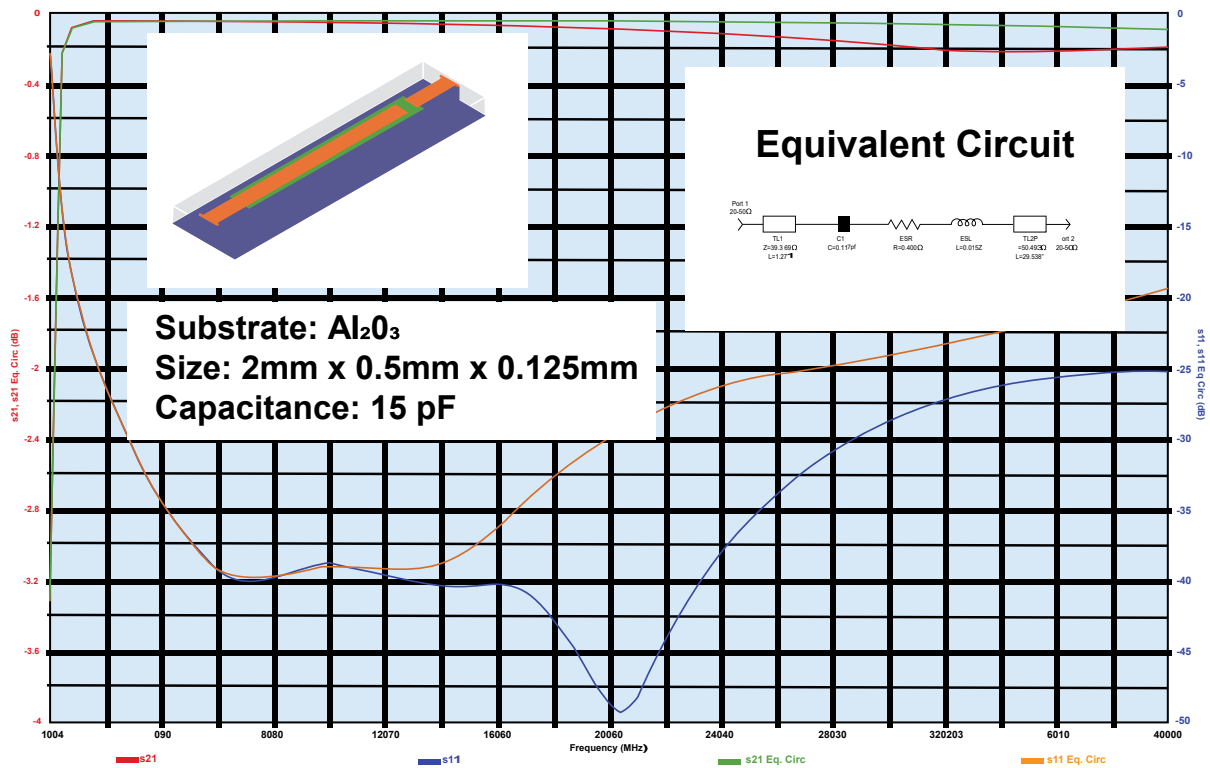
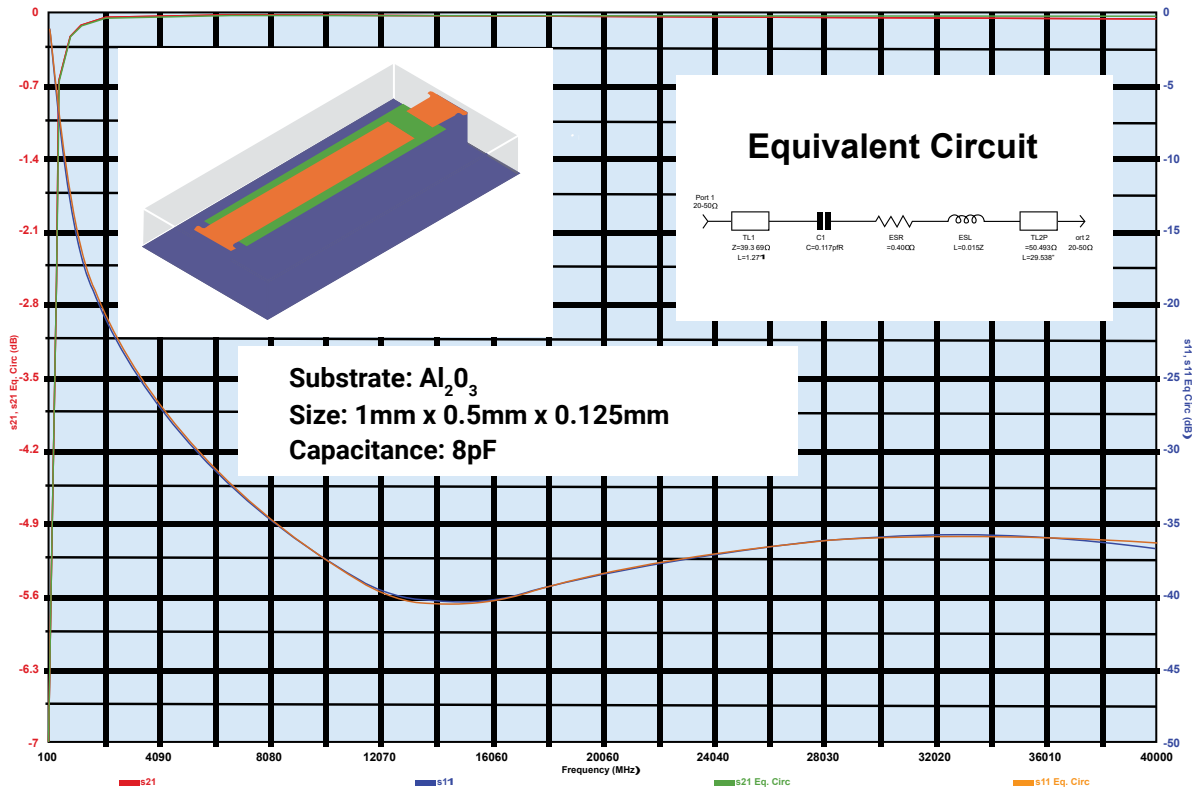
## AVAILABLE PART NUMBERS

| Part Number     | Substrate | Length (mils) | Width (mils) | Thickness (mils) | Cap Value (pF) |
|-----------------|-----------|---------------|--------------|------------------|----------------|
| MV0304CA150MABW | Alumina   | 30            | 40           | 10               | 15             |
| MV0402CA150MAAW | Alumina   | 40            | 20           | 5                | 15             |
| MV0802CA150MAAW | Alumina   | 80            | 20           | 5                | 15             |
| MV0804CA1R0MABW | Alumina   | 80            | 40           | 10               | 1              |
| MV0804CA150MABW | Alumina   | 80            | 40           | 10               | 15             |
| MV3204CA150MABW | Alumina   | 120           | 40           | 10               | 15             |
| MV0404CA150MABW | Alumina   | 40            | 40           | 10               | 15             |
| MV0505CA150MQAW | Quartz    | 50            | 50           | 5                | 15             |

## HOW TO ORDER

|                    |                         |                        |                        |                                      |  |                              |   |   |  |
|--------------------|-------------------------|------------------------|------------------------|--------------------------------------|--|------------------------------|---|---|--|
| <b>MV</b>          | <b>04</b>               | <b>02</b>              | <b>C</b>               | <b>A</b>                             | <b>150</b>   | <b>M</b>                     | <b>A</b>  | <b>A</b>  | <b>W</b>   |
| <b>Series Code</b> | <b>Substrate Length</b> | <b>Substrate Width</b> | <b>Working Voltage</b> | <b>Standard Impedance</b>            | <b>Capacitance</b>   | <b>Capacitance Tolerance</b> | <b>Substrate</b>                                    | <b>Substrate Thickness (mils)</b>                               | <b>Packaging</b>   |
| MV = TL MIM        | in tens of mils         | in tens of mils        | C = 100 WVDC           | A = 50Ω<br>X = Other Contact Factory | capacitance code in pF<br>First two digits = significant figures or R for decimal place.<br>Third digit - number of zero or after "R" significant figures. | M = ± 20%                    | A = Alumina<br>Q = Quartz<br>G = Glass<br>X = Other | A = 5 mils<br>B = 10 mils<br>C = 15 mils<br>X = Contact Factory | W = anti-static waffle pack<br>T = tested, undiced<br>D = Tested and diced on tape |

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