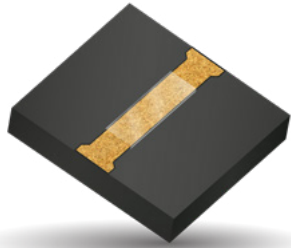


Transmission Line MIM Capacitor (Metal-Insulator-Metal)

GENERAL DESCRIPTION



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 (Al₂O₃)
- Quartz

APPLICATIONS

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

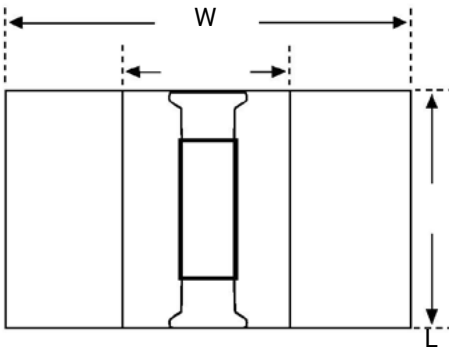
CAPACITOR MATERIALS

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

*Actual maximum capacitance values depend on transmission line dimensions

MECHANICAL DIMENSIONS

Based on Transmission Line Design Request



Length is determined by transmission line

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

HOW TO ORDER

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

Transmission Line MIM Capacitor

(Metal-Insulator-Metal)

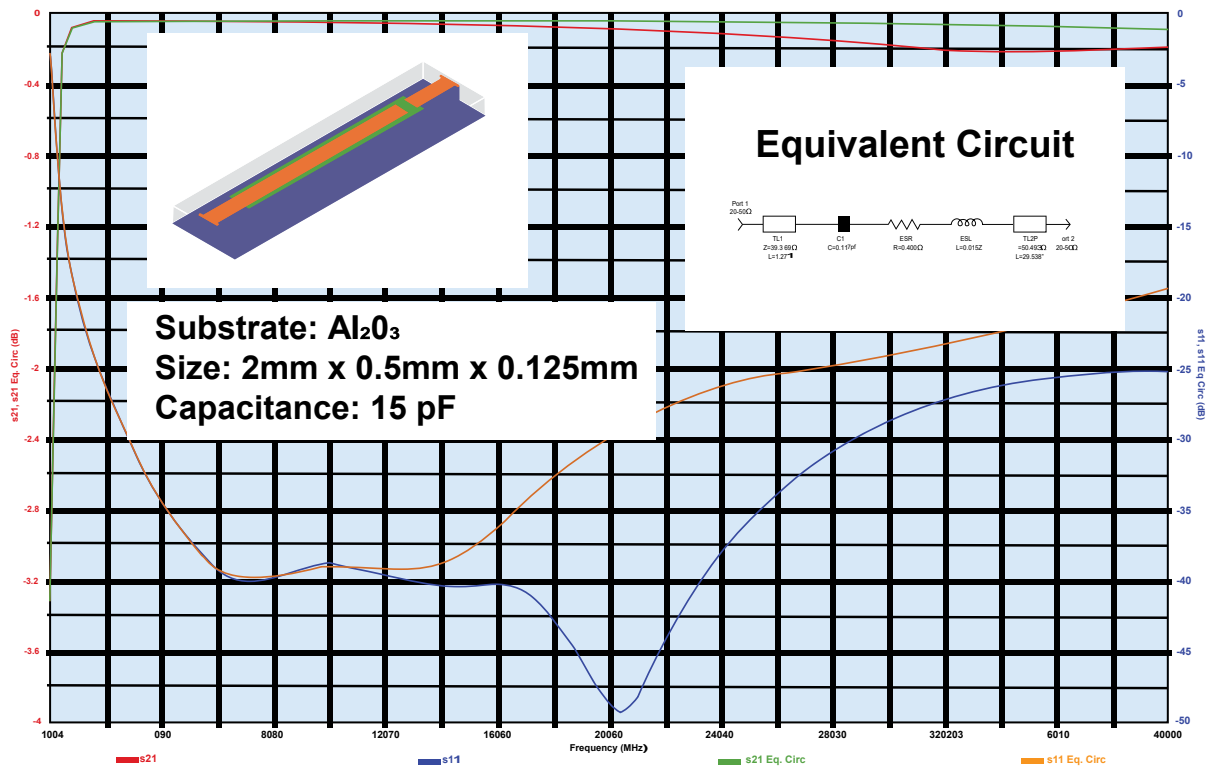
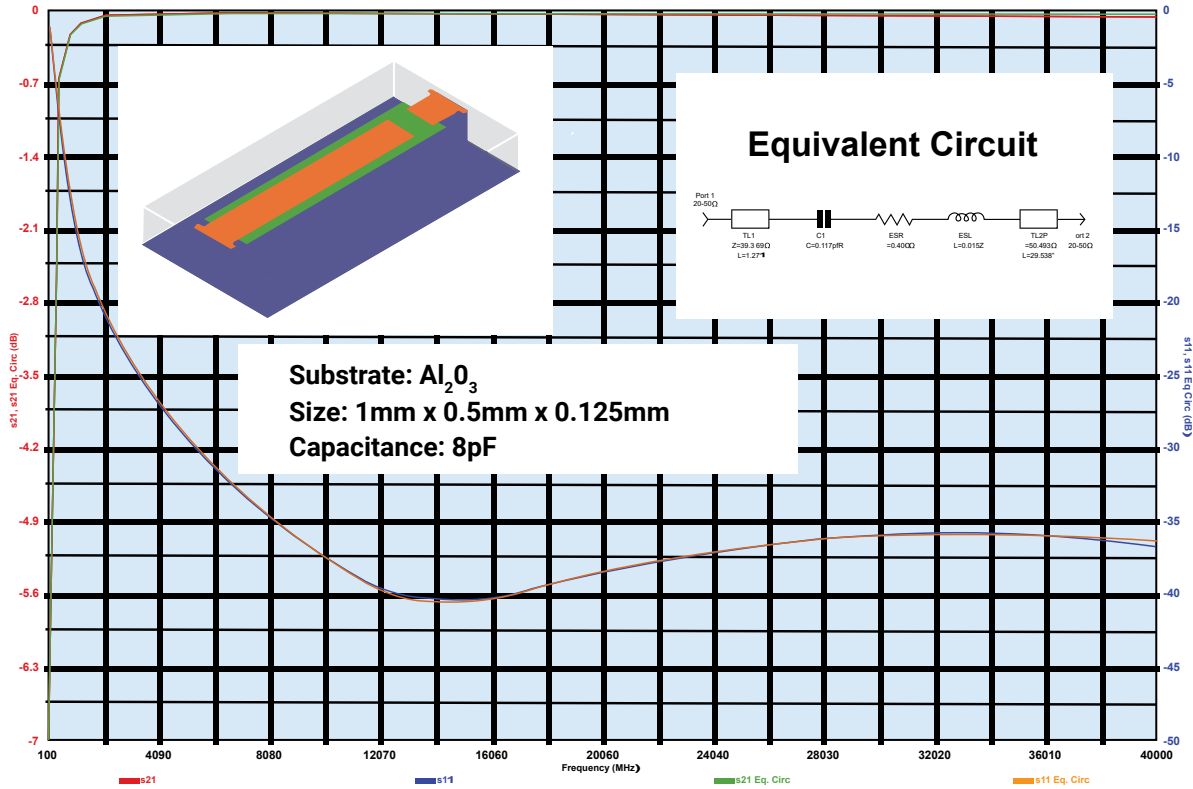
GENERAL CHARACTERISTICS

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

STANDARD

Part Number	Substrate	Length (mils)	Width (mils)	Thickness (mils)	Cap Value (pF)
MV0402CA1R0MQAW	Quartz	40	20	5	1
MV0404CA1R0MQAW	Quartz	40	40	5	1
MV0402CA5R0MQAW	Quartz	40	20	5	5
MV0404CA5R0MQAW	Quartz	40	40	5	5
MV0404CA150MQAW	Quartz	40	40	5	15
MV0402CA150MAAW	Alumina	40	20	5	15
MV0404CA150MABW	Alumina	40	40	10	15
MV0304CA150MABW	Alumina	30	40	10	15
MV0804CA150MABW	Alumina	80	40	10	15

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