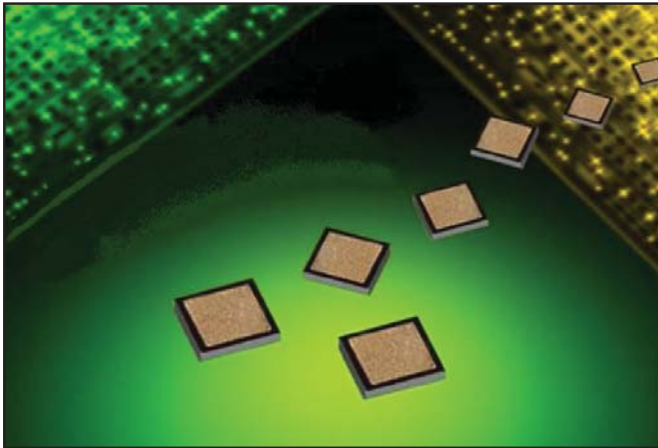


# MIS/MOS Single Layer Capacitors



## Metal Insulator Semiconductor/Metal Oxide Semiconductor



For applications in RF, Microwave and GHz ranges, AVX offers MIS/MOS Capacitors. These are Single Layer Capacitors (SLCs) that use Silicon Nitride or Silicon Dioxide to produce small, high Q, temperature stable, high break down voltage, low leakage capacitors. To ease assembly, AVX offers a wide range of termination styles for epoxy or solder die attach and subsequent Gold or Aluminum wire thermosonic and ultrasonic bonding. Custom applications and designs are welcome. Please contact your local representative.

### BENEFITS

- MIS, SiON dielectric up to 100V applications
- MOS, SiO<sub>2</sub> dielectric up to 50V applications
- Sizes as small as 10 mils (254µm) squared
- DC to GHz operation
- High Q, low leakage

### HOW TO ORDER

MS	20	3	S	100	M	3723	W
<b>Series Code</b> MS = MOS MI = MIS	<b>Case Size</b> Square size in mils 10, 20, 30, 40 OS = Special order please supply design	<b>Working Voltage</b> 2 = 2 WVDC 4 = 4 WVDC Z = 10 WVDC 3 = 25 WVDC 5 = 50 WVDC S = Special Order	<b>Dielectric Code</b> S = SiO <sub>2</sub> for MOS Style ONLY N = SiON for MIS Style ONLY	<b>Capacitance</b> EIA Capacitance Code in pF. First two digits = significant figures or "R" for decimal place. Third digit = number of zeros or after "R" significant figures.	<b>Capacitance Tolerance</b> F = ± 1% J = ± 5% K = ± 10% M = ± 20%	<b>Termination Code</b> 1st position top layer 2nd position top bonding layer 3rd position bottom bonding layer 4th position bottom layer 1 = Al 4 = Ni 7 = TaN 2 = Cr 5 = Pd 8 = TiW 3 = Au 6 = Ta 9 = TiWNi OSOS = Special Order Please Supply Design	<b>Packaging</b> W = Antistatic Wafer Pack T = Tested Whole Wafer D = Tested Wafer Diced on Tape

### TYPICAL ELECTRICAL SPECIFICATIONS

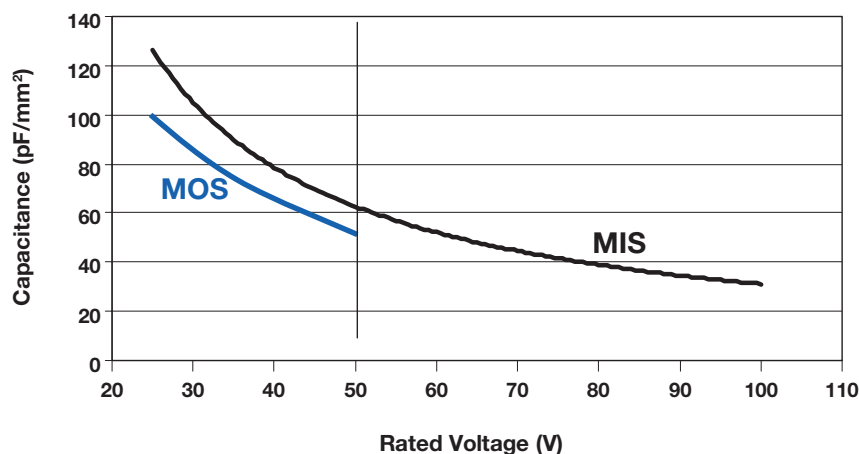
Material	MIS (SiON)	MOS (SiO <sub>2</sub> )
pF /mm <sup>2</sup> Typical	150	85
TCC	± 60 ppm/°C	± 30 ppm/°C
Rated Voltage	≤ 100	≤ 50
Peak Voltage at +25°C	1.5x Rated	1.5x Rated
DF	≤ 0.1%	≤ 0.1%
Voltage Stability	Independent	Independent
Frequency Range	≤ 40 GHz	≤ 40 GHz

### TEST METHODS

Specification	Parameter	Method of Paragraph
MIL-STD-883	Bond Strength	2011.7
MIL-STD-883	Shear Strength	2019
MIL-STD-202	Life	108

## SPECIFIC CAPACITANCE (pF/mm<sup>2</sup>) VERSUS RATED VOLTAGE

MIS \ MOS Specific Capacitance vs Rated Voltage



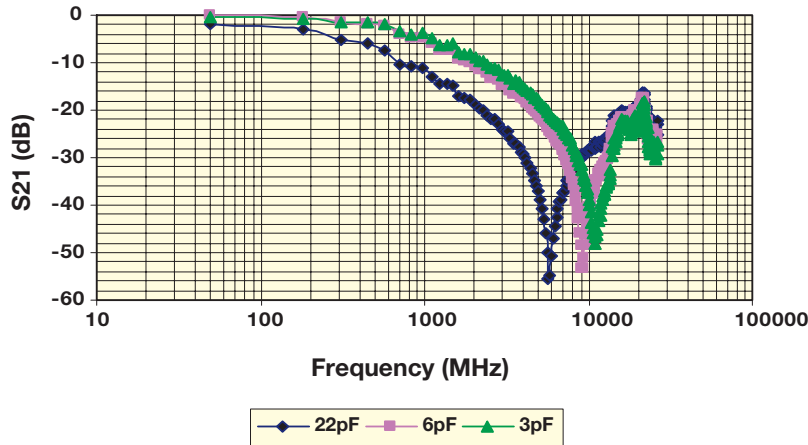
# MIS/MOS Single Layer Capacitors



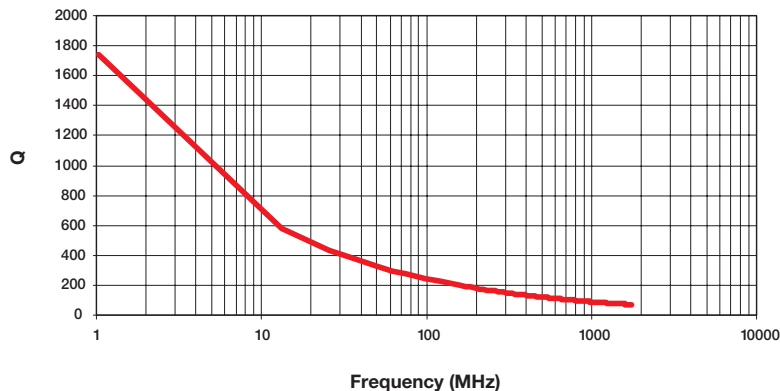
Metal Insulator Semiconductor/Metal Oxide Semiconductor

## EXAMPLE S21 AND Q VERSUS FREQUENCY (DEFINE MEASUREMENTS)

Typical MOSCaps : 50M-25GHz  
Au/TaN bond pad, Cr/Au back side



22 pF Q Vs Frequency



NOTICE: Specifications are subject to change without notice. Contact your nearest AVX Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable, but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated or that other measures may not be required. Specifications are typical and may not apply to all applications.

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