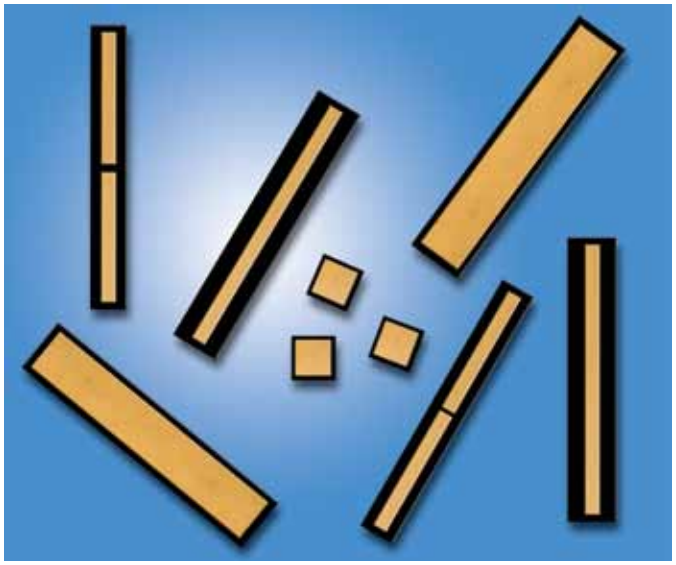
ATC // AVX
MOS Single Layer Capacitors

Metal Oxide Semiconductor

ATC//AVX Thin Film Technologies offers semi-custom thin film Metal Oxide Semiconductor (MOS) Single Layer Capacitors suitable for RF/ microwave and millimeter-wave applications. The silicon oxide dielectric is fabricated with high temperature processing resulting in excellent uniformity and stability.

ATC//AVX Thin Film Technologies' unique processing and materials sets result in MOS capacitors with high Q, excellent temperature stability, high dielectric strength, high insulation resistance and low ESR. A wide range of termination metallizations are available to facilitate epoxy, solder die attach, thermosonic and ultrasonic bonding and gold or aluminum wire bonding. Custom applications and designs are welcome. Consult factory for additional information.



Benefits

- Rectangular sizes up to several mm in length (100's mils)
- Square sizes from 254µm x 254µm (10 mils)
- Thicknesses from 50 to 250 µm (2 to 10 mils)
- DC to GHz operation
- High Q
- High Insulation Resistance >1 G-ohm
- Low ESR designs <100 milliohms

Typical Electrical Specifications

Material	MOS (SiO_2)
pF/mm^2 Typical	85 @ 50V rated
TCC	±30 ppm/°C
Rated Voltage	≤100
Peak Voltage at +25°C	1.5 x Rated
DF	≤0.1%

Test Methods

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

How to Order

MS	20	3	S	100	M	3723	W
Series Code	**Case Size**	**Working Voltage**	**Dielectric Code**	**Capacitance**	**Capacitance Tolerance**	**Termination Code**	**Packaging**
MS - MOS	Square size in mils 10, 20, 30, 40 OS - special order please supply design	Z = 10 WVDC 3 = 25 WVDC 5 = 50 WVDC S - special order	S = SiO_2 for MOS style	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.	J = ±5% K = ±10% M = ±20%	1st position top layer 2nd position top bonding layer, 3rd position bottom bonding layer, 4th position Top layers: 37 = AuTaN 38 - AuTiW, 18 - AlTiW Bottom layers: 23 - CrAu 93 - TiWNiAu, 53 = CrNiAu OSOS - Special Order Please Supply Design	W = antistatic waffle pack T= tested whole wafer D - Tested wafer diced on tape

AMERICAN TECHNICAL CERAMICS

ATC // AVX Thin Film Technologies
tfsales@atceramics.com

ATC North America
sales@atceramics.com

THE ENGINEERS' CHOICE™

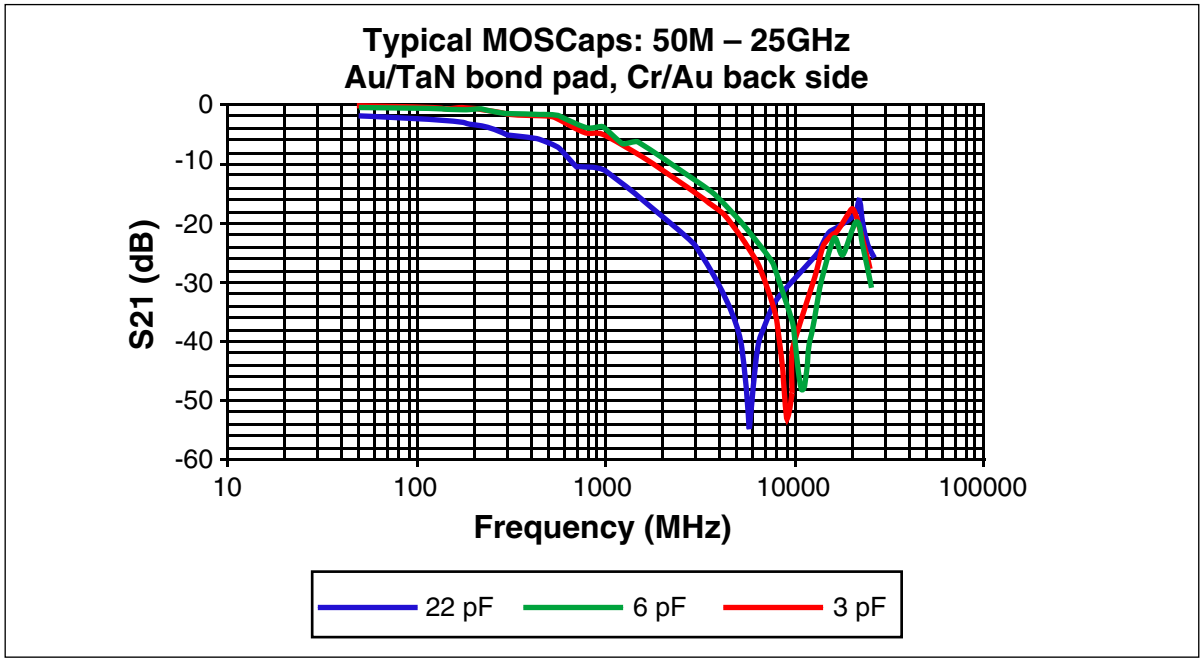
www.atceramics.com

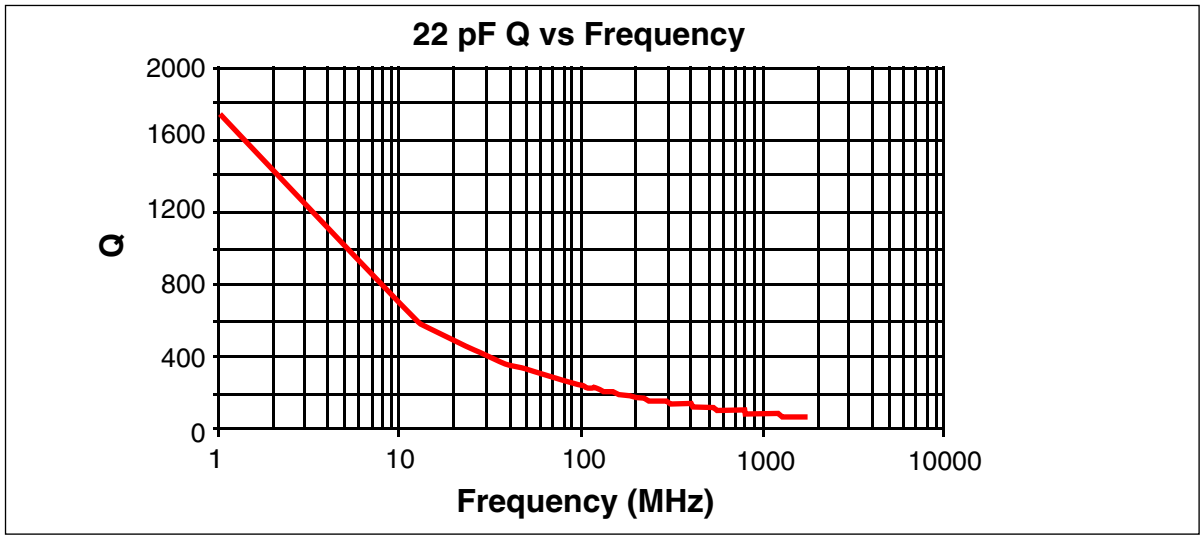
ATC // AVX MOS Single Layer Capacitors
Metal Oxide Semiconductor

Standard Wafers Offered and Thickness

N+ (Arsenic doped); 0.001-0.005 Ohm-cm resistivity; ≥100µm thick
N++ (Phosphorous doped): .001 to .0015 Ohm-cm resistivity; ≥100µm thick

Example S21 and Q Versus Frequency





ATC # 001-1088 Rev. A; 5/10

AMERICAN TECHNICAL CERAMICS
ATC // AVX Thin Film Technologies
tfsales@atceramics.com
ATC North America
sales@atceramics.com
THE ENGINEERS' CHOICE™
www.atceramics.com
THE ENGINEERS' CHOICE®
ISO 9001 REGISTERED COMPANY