



# NUVOTRONICS

## PRODUCT CATALOG / LINE CARD



# Who We Are

Nuvotronics designs, manufactures and supplies micro-miniature solutions for Commercial & Defense Space, Airborne, SATCOM, EW, mmWave Package, Test & Measurement, and mmWave Telecom applications with our PolyStrata® technology. It offers high performance value with low loss, high isolation, and power handling capability all within a micro-miniature surface-mount package. The solutions are ideal for millimeter wave and ultra-broadband performance with either individual passive component functions or highly integrated passives within the same assemblies of multiple devices (Multi-Chip Modules).

## What is our PolyStrata® Technology?

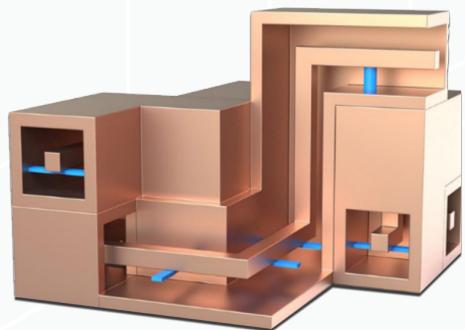
Our PolyStrata® architecture provides an unprecedented platform for mmWave performance, integration, and miniaturization. Because of its 10x to 100x improvement in Size, Weight, and Power (SWaP), PolyStrata® is the industry leader in mmWave technologies for space, defense, and commercial markets.

## PolyStrata® Advantages

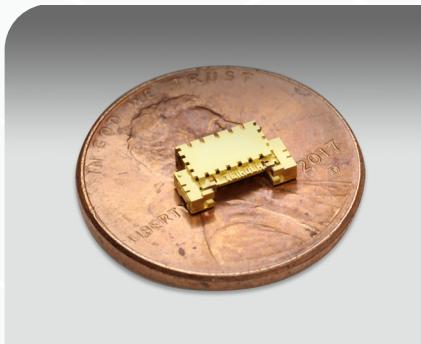
### High Performance Low SWaP Components & Sub Assemblies

### Highest Density Packaging in the Industry

- Broadband performance DC - 300 GHz
- High isolation between adjacent coax signal lines (>80dB)
- Low loss 3D signal routing and multi-layer stacking
- Micron level tolerances produce very repeatable hardware
- Photolithographic precision assembly and 3D integration
- Active and passive component integration
- Inherent high thermal power dissipation

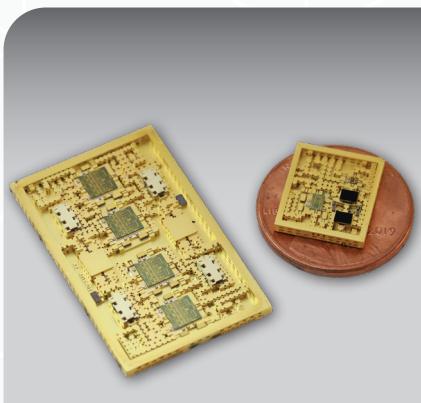


# What We Offer:



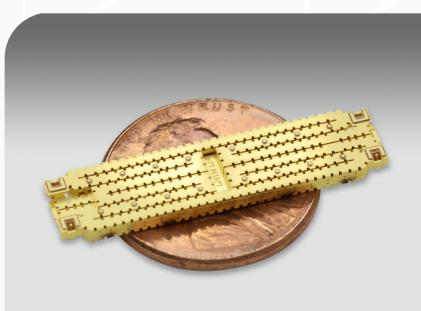
## PolyStrata® Filters

- Near Ideal Performance
  - Lowest insertion loss by volume in the market and high rejection
- Precision
  - Low part-to-part variation
- Ease of Assembly
- Standard SMT processes



## PolyStrata® mmWave Package

- Solid copper package body results in optimal thermal performance
- MMIC interfaces minimize loss and wire bond length
- Compatible with automated Au wire bonding
- PCB interface compatible with standard SMT processes
- High isolation between components
- High performance - 0.5 dB loss up to 80 GHz



## PolyStrata® Couplers/Combiners

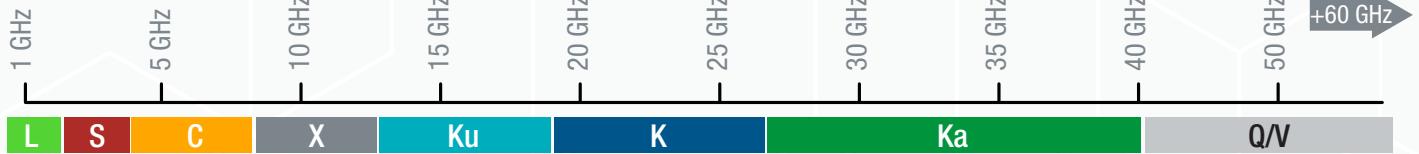
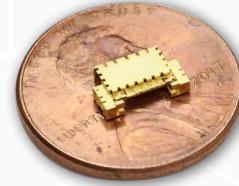
- Surface Mount form factor
  - Ease of integration and assembly
- Excellent Amplitude and Phase Balance
  - 3 dB coupling across band with high isolation
- Over 20 dB isolation between channels



## Wideband Antennas

- Spirals available with right or left polarization
- Available with 2.40/2.92/1.85 mm connector options
- 18 – 60 GHz coverage (can go to over 100 GHz)
- 0.5" diameter package, excluding mounting flange
- Sinuous antennas also available

# PolyStrata® Filters



## K Band:

Part Number	Frequency (GHz)	Insertion Loss	Product	Application
Coming Soon	17.8-20.2	< 0.5 dB	Bandpass Filter	Commercial Space
PSF19B02S	17.7-20.2	< 2 dB	Bandpass Filter	Commercial Space
PSF19B03S	17.7-20.2	0.9 dB	Bandpass Filter	Commercial Space
PSF19B02V3S	17.7-20.2	0.8 dB	Bandpass Filter	Commercial Space
Coming Soon	17.7-21.2	< 0.5 dB	Bandpass Filter	Defense Space

## Ka Band:

Part Number	Frequency (GHz)	Insertion Loss	Product	Application
PSF26B04V2S	24-28	1.3 dB	Bandpass Filter	Test & Measurement
PSF26B04S	24.5-28.3	1.2 dB	Bandpass Filter	mmWave Telecom
PSF28B04S	26.5-30.5	1.9 dB	Bandpass Filter	Test & Measurement
PSF28B02S	27.5-30	1 dB	Bandpass Filter	Commercial Space
PSF29B02S	27.5-30	0.7 dB	Bandpass Filter	Commercial Space
PSF29B02V2S	27.5-30	0.4 dB	Bandpass Filter	Commercial Space
PSF28B02S	27.5-30	1 dB	Bandpass Filter	Commercial Space
Coming Soon	27.5-30	< 0.5 dB	Bandpass Filter	Commercial Space
PSF29B03S	27.5-31	1.2 dB	Bandpass Filter	Defense Space
Coming Soon	27.5-31	< 0.5 dB	Bandpass Filter	Defense Space
PSF32B04S	30-34	2 dB	Bandpass Filter	Test & Measurement

## Q Band:

Part Number	Frequency (GHz)	Insertion Loss	Product	Application
PSF38B03S	37-40	1.4 dB	Bandpass Filter	Commercial Space
Coming Soon	37-40	< 0.5 dB	Bandpass Filter	Commercial Space
PSF39B04S	37-41	2.2 dB	Bandpass Filter	Test & Measurement
PSF40B05S	37.5-42.5	1.1 dB	Bandpass Filter	Commercial Space
Coming Soon	37.5-42.5	< 0.5 dB	Bandpass Filter	Commercial Space
PSF39B03S	38-40	1.25 dB	Bandpass Filter	Test & Measurement
PSF42B05S	39.7-45.3	1.3 dB	Bandpass Filter	Commercial Space

## V Band:

Part Number	Frequency (GHz)	Insertion Loss	Product	Application
PSF42B04S	40-44	2.2 dB	Bandpass Filter	Test & Measurement
PSF49B05S	47.2-52.4	1.2 dB	Bandpass Filter	Commercial Space
Coming Soon	47.2-52.4	< 0.5 dB	Bandpass Filter	Commercial Space

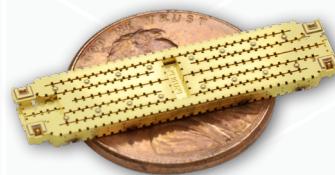
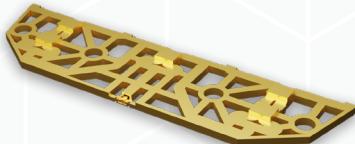
## E Band:

Part Number	Frequency (GHz)	Insertion Loss	Product	Application
PSF71B07W	69-76	2.8 dB	Bandpass Filter	Test & Measurement
PSF85B08W	81-89	0.75 dB	Bandpass Filter	Test & Measurement

## Wideband:

Part Number	Frequency (GHz)	Insertion Loss	Product	Application
PSF29B22S	18-40	0.4 dB	Bandpass Filter	Electronic Warfare
PSF34B32S	18-50	0.3 dB	Bandpass Filter	Electronic Warfare

## PolyStrata® Couplers/Combiners



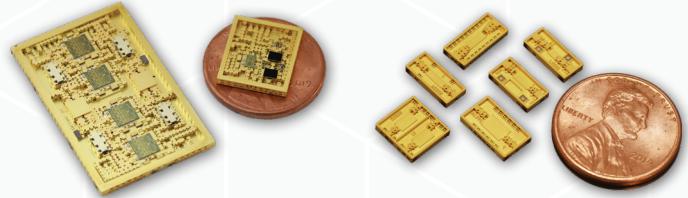
## Combiners:

Part Number	Description	Frequency (GHz)	Insertion Loss	Output Power (CW)	Application
PSX12Q12W	4-way combiner	6-18	0.4 dB	80W	Electronic Warfare
PSX29Q22W	4-way combiner	18-40	0.4 dB	80W	Electronic Warfare
PSX29Q03W	4-way combiner	27.5-31	0.4 dB	80W	Commercial & Defense Space
PSX40D05W	2-way splitter	37.5-42.5	0.3 dB	80W	Commercial Space
PSX40D05V2W	2-way combiner w/ DC	37.5-42.5	0.3 dB	80W	Commercial Space
PSX50Q05W	4-way combiner	47.2-52.4	0.5 dB	80W	Commercial Space

## Couglers:

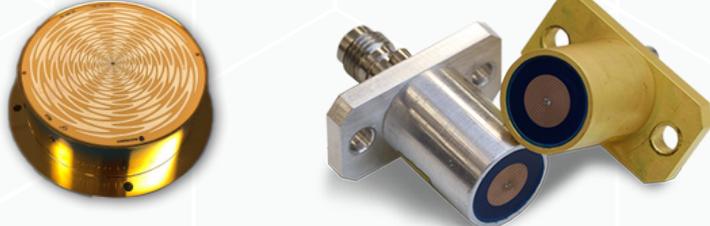
Part Number	Description	Frequency (GHz)	Insertion Loss	Output Power (CW)	Application
PSC44D15S	Directional Coupler	1-44	< 1.2 dB	20W	Test & Measurement
PSC18H17S	90 Degree Hybrid Coupler	2-18	0.75 dB	20W	Electronic Warfare
PSC18H07S	90 Degree Hybrid Coupler	6-18	0.3 dB	20W	Electronic Warfare
PSC50D07S	Directional Coupler	18-50	0.2 dB	20W	Electronic Warfare
PSC50H08S	90 Degree Hybrid Coupler	18-50	0.35 dB	20W	Electronic Warfare

# PolyStrata® mmWave Package



Part Number	Max Frequency (GHz)	Insertion Loss	Max Die Size in mm (X, Y, Z)	Package Size (X, Y, Z) in mm
PSP21B21S	21	0.2 dB	2.1, 1.3, 0.08	6.34, 3.896, 0.7
PSP40B35S	40	0.3 dB	3.55, 5.965, 0.18	6.789, 10.390, 0.85
Coming Soon	80	0.5 dB	Various sizes (TBD)	Various sizes (TBD)

## Wideband Antennas



Part Number	Description	Frequency (GHz)	Band	Product	Application
PSA0218C	8-arm Sinuous Antenna	2-18	Low/Mid Band	Sinuous	Electronic Warfare
PSA1850C	2-arm spiral antenna	18-50	Mid/High Band	Spiral	Electronic Warfare
PSA1850C-4	4-arm dual-pol sinuous antenna	18-50	Mid/High Band	Sinuous	Electronic Warfare

# About Us

For the last 16 years, we have perfected our patented PolyStrata® technology, introducing the world's first 3D air-dielectric circuit board. Leveraging our PolyStrata® technology to deliver unprecedented performance in minimal form factors, we provide high-performance components and hardware solutions suitable for demanding space, airborne and terrestrial applications. The benefits of the PolyStrata® integration means that systems can experience improved small form factor, reducing the number of banded solutions, power handling and greater heat dissipation compared to other solutions available on the market.

**CUBIC**™



**NUVOTRONICS**



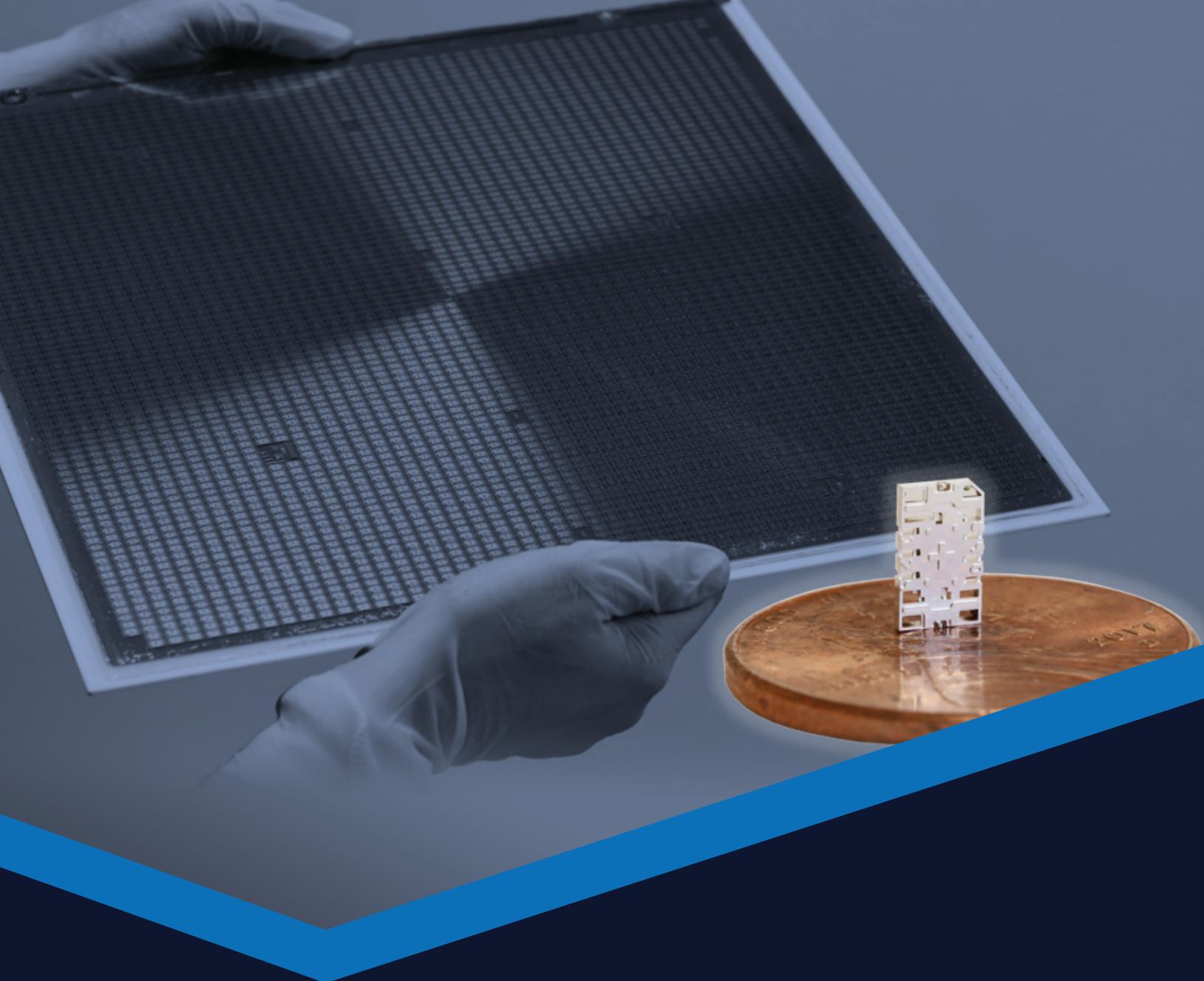
**AS9100D  
CERTIFIED**

Nuvotronics' Office in  
Durham, NC



## Nuvotronics Main Facility – Durham, NC

- 17,000 sq.ft. cleanroom
- Component / module design and assembly expertise in house, DC to 300 GHz
- Full test capability to 110 GHz
- Over 60,000 sq ft of manufacturing space
- AS9100D Certified
- Capable for ITAR and Classified work
- DoD Category 1A Trusted IC Supplier – Post Processing & Packaging / Assembly Services



Nuvotonics  
2305 Presidential Drive  
Durham, NC 27703

[www.nuvotonics.com](http://www.nuvotonics.com)  
[marketing@nuvotonics.com](mailto:marketing@nuvotonics.com)

© Cubic Defense-Nuvotonics  
12SEP2023