



**NUVOTRONICS®**

**Breakthrough. Engineering. Delivered.™**

**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?

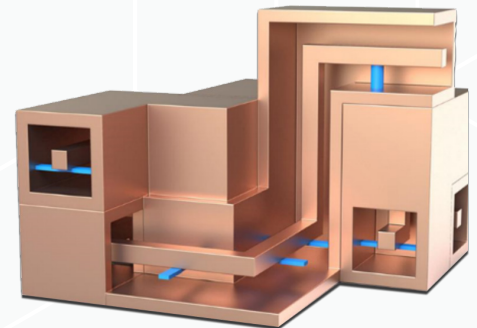
Our PolyStrata® architecture provides an unprecedented platform for mmWave performance, integration, and miniaturization. Because of its 10x to 100x improvement in Size, Weight, and Power (SWaP), PolyStrata® is the industry leader in mmWave technologies for space, defense, and commercial markets.

## PolyStrata® Advantages

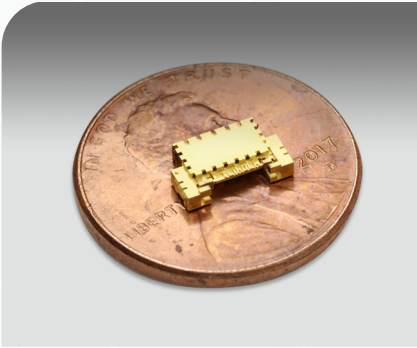
High Performance Low SWaP Components & Sub Assemblies

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

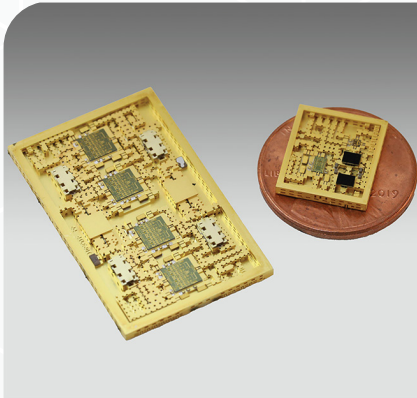


## What We Offer:



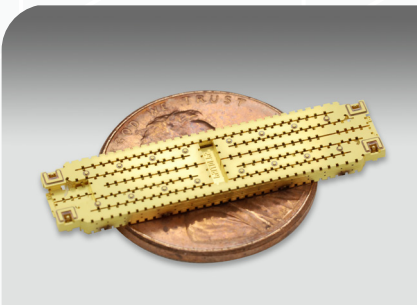
### PolyStrata® Filters

- 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



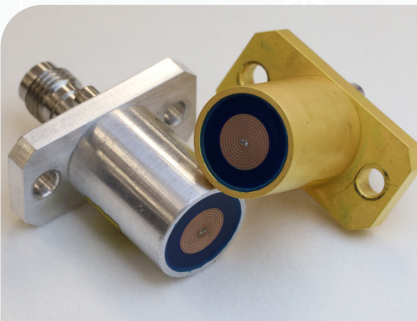
### PolyStrata® mmWave Package

- 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

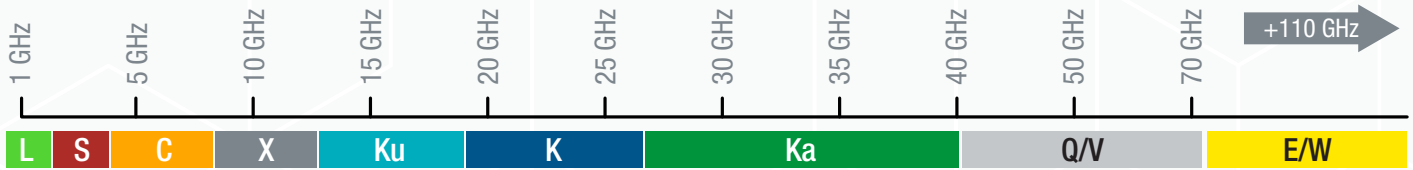
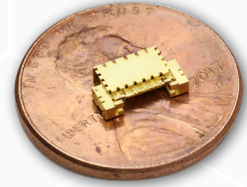
- Surface Mount form factor
  - Ease of integration and assembly
- Excellent Amplitude and Phase Balance
  - 3 dB coupling across band with high isolation
- Over 20 dB isolation between channels



### 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
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

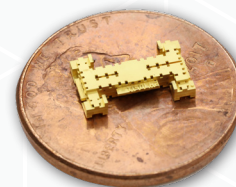
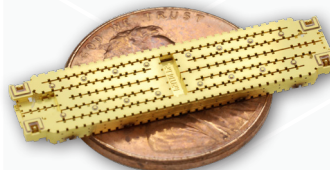
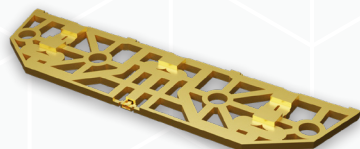
E Band:

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



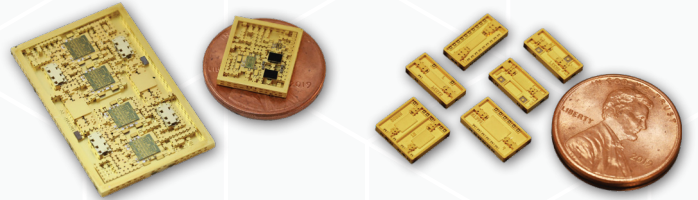
Combiners:

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

Couplers:

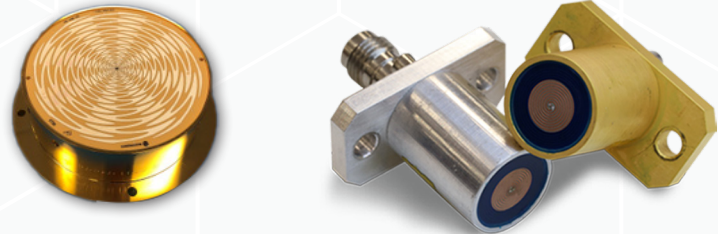
Part Number	Description	Frequency (GHz)	Insertion Loss	Output Power (CW)	Application
PSC44D15S	Directional Coupler	1-44	< 1.2 dB	20W	Test & Measurement
PSC18H17S	90 Degree Hybrid Coupler	2-18	0.75 dB	20W	Electronic Warfare
PSC18H07S	90 Degree Hybrid Coupler	6-18	0.3 dB	20W	Electronic Warfare
PSC50D07S	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
PSP1025530_002	21	0.2 dB	2.1, 1.3, 0.08	6.34, 3.896, 0.7
Coming Soon	80	0.5 dB	Various sizes (TBD)	Various sizes (TBD)

# Wideband Antennas



Part Number	Description	Frequency (GHz)	Band	Product	Application
PSA1850C	2-arm spiral antenna	18-50	Mid/High Band	Spiral	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®



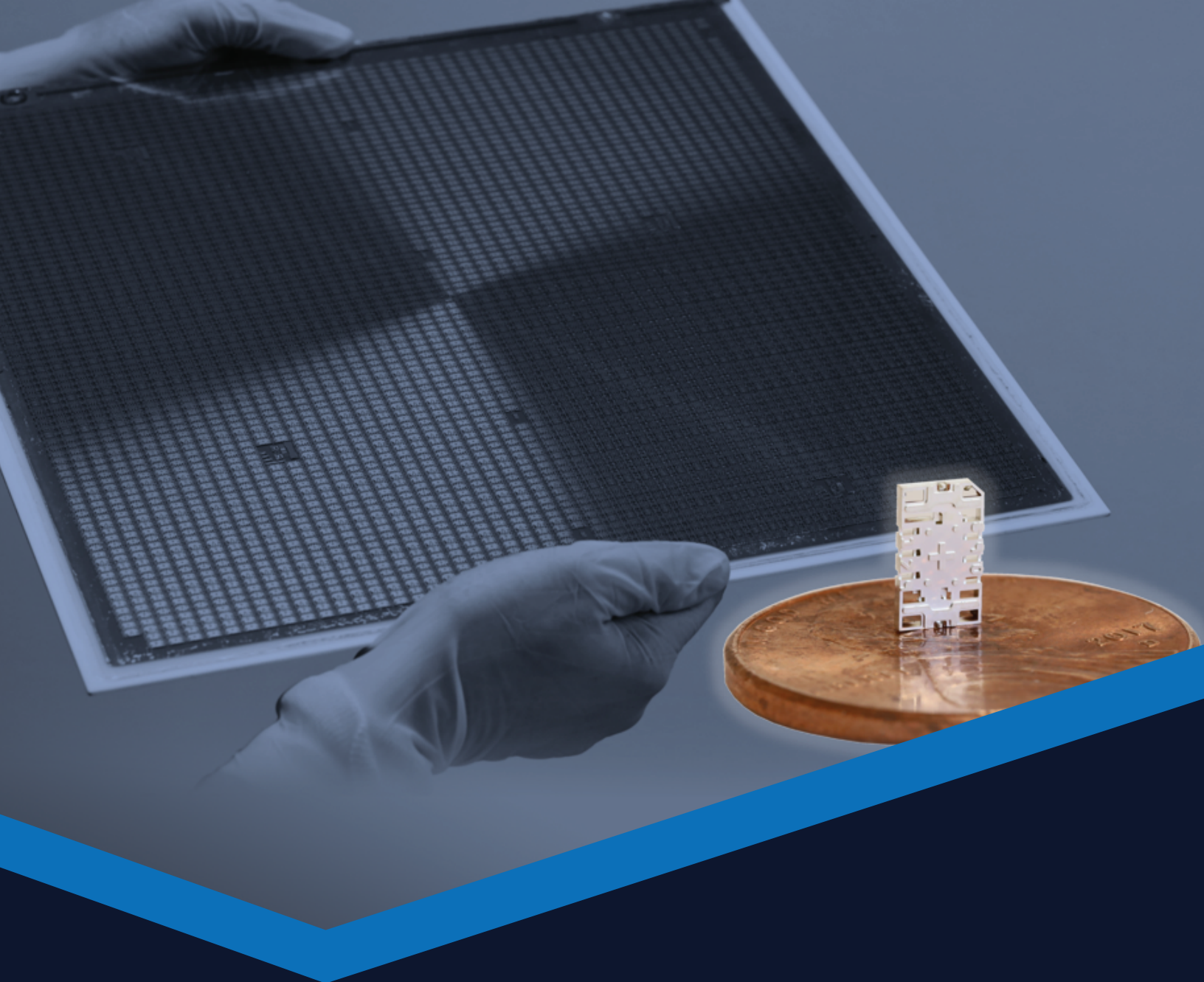
AS9100D  
CERTIFIED

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



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