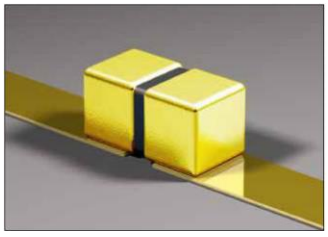
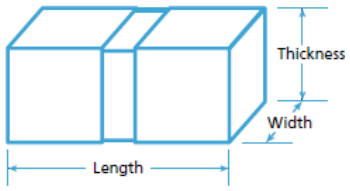
MILLI-CAP® BROADBAND DATASHEET – BNL VERSION

FEATURES

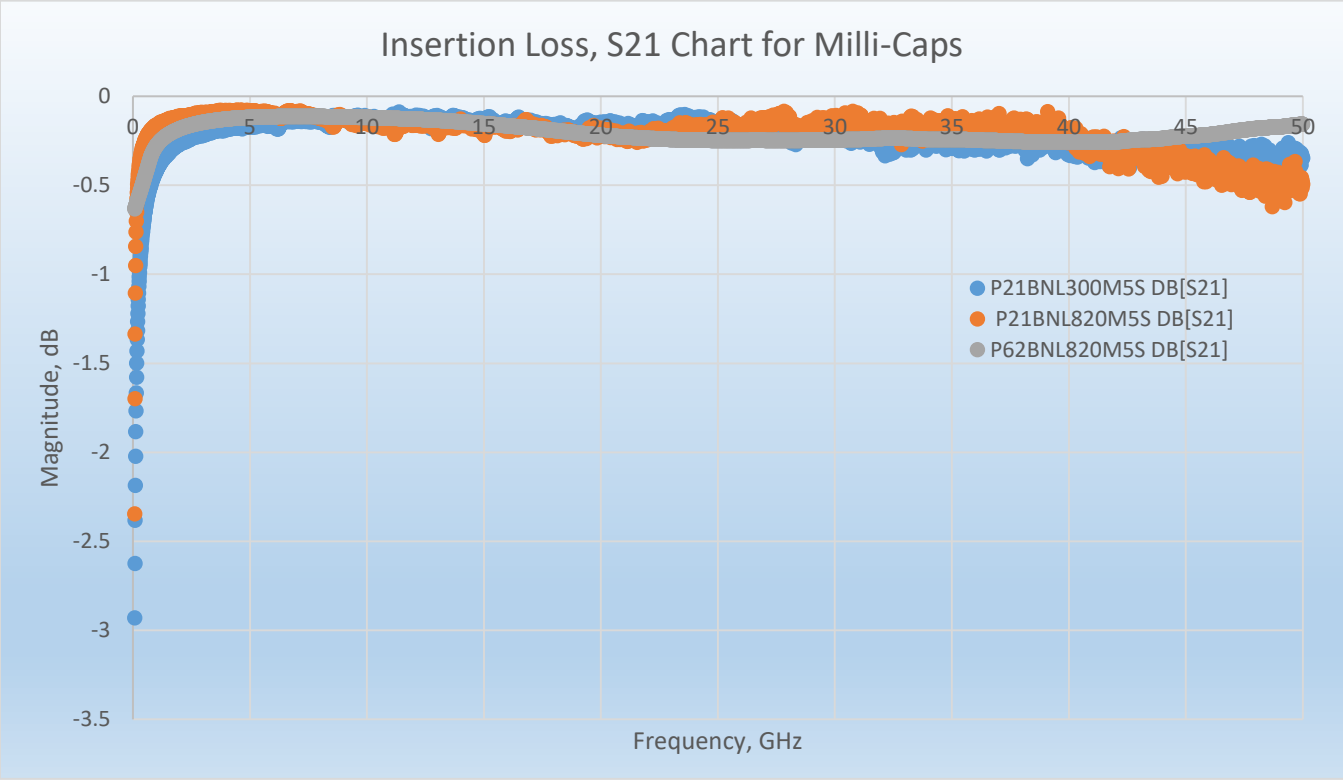




- ✓ *Operating frequency range extended up to 50 GHz.*
- ✓ Same form, fit and function as previous Milli-Cap.
- ✓ Available in 0201, 0402 and 0602 footprints.
- ✓ Applications:
  - Broadband Microwave/Millimeter Wave
  - Test Equipment, Photonics, SONET, TOSA/ROSA
  - Transimpedance Amplifiers
- ✓ X7R Characteristics – ±15% Capacitance variation over temperature range of -55 to +125°C.
- ✓ Low Insertion Loss

Old Part Number	New Part Number	Case Size	TCC	Cap, pF	Voltage Rating, V	Dissipation Factor	Insulation Resistance	Frequency Range
P21BN300x5S	**P21BNL300x5S**	0201	X7R	30	50	3.5%	> 10^5 MΩ	20 MHz – 50 GHz
P42BN820x5S	**P42BNL820x5S**	0402	X7R	82	50	3.5%	> 10^5 MΩ	20 MHz – 50 GHz
P62BN820x5S	**P62BNL820x5S**	0602	X7R	82	50	3.5%	> 10^5 MΩ	20 MHz – 50 GHz

x denotes the tolerance of the part. Available in M (±20%) and Z (+80%, -20%) tolerances.



Packaging Options: Tape & Reel or Waffle Package.

ATTACHMENT METHOD

Using Conductive Epoxy	Using Solder
1. Place a single drop of conductive epoxy onto each microstrip. Keep the epoxy back from the edge based on the specific footprint. 2. Centering the termination gap in the micro strip, press with even pressure on to the micro strip ensuring the end terminations make good contact with the epoxy. 3. Cure based according to the epoxy manufacturer's preferred schedule (typically 125 to 250°C). 4. After curing, inspect joint for epoxy shorts across the termination and micro strip gaps to verify cause of short across the capacitor. 5. It is safe to use Isopropanol and Methanol to pre-clean, but not after mounting with conductive epoxy as they would act as a solvent.	1. Place a single drop of solder on to each micro strip. Keep the solder back from the edge based on the specific footprint. 2. Centering the termination gap in the micro strip, press with even pressure on to the micro strip ensuring the end terminations make good contact with the epoxy. 3. Reflow according to solder manufacturer's preferred profile, ensuring reflow temperature does not exceed 250°C. 4. After reflow step is completed, inspect joints for voids or excess flux and solder balls that can degrade performance or cause shorts across the gaps. 5. It is safe to use Isopropanol and Methanol with soldered Milli-caps.

DIMENSIONAL SPECIFICATIONS

	Part Dimensions					Mounting Guidelines			
Case Size	Length, B	Width	Thickness	Gap, A (typ)	End Block, C (typ)	Epoxy Thickness, Et	Epoxy Diameter	Gap	Distance from Trace Edge
P21 (0201)	0.020" ± 0.004"	0.012" ± 0.002"	0.010" ± 0.002"	0.005"	0.008"	0.003" – 0.005"	0.005" – 0.008"	0.008" – 0.010"	0.003" to 0.004"
P42 (0402)	0.038" ± 0.004"	0.020" ± 0.002"	0.020" ± 0.002"	0.008"	0.015"	0.003" – 0.005"	0.010" – 0.015"	0.015" – 0.020"	0.003" to 0.004"
P62 (0602)	0.058" ± 0.004:	0.020 ± 0.002"	0.020 ± 0.002"	0.008"	0.025"	0.003" – 0.005"	0.010" – 0.015"	0.015" – 0.020"	0.003" to 0.004"