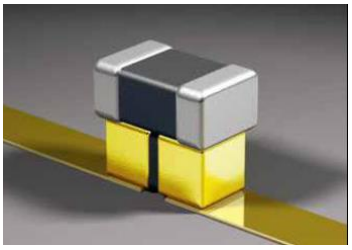
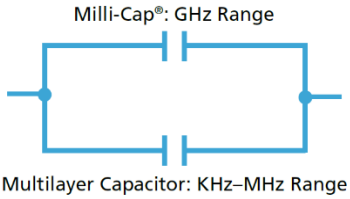
OPTI-CAP® BROADBAND DATASHEET – BNL VERSION

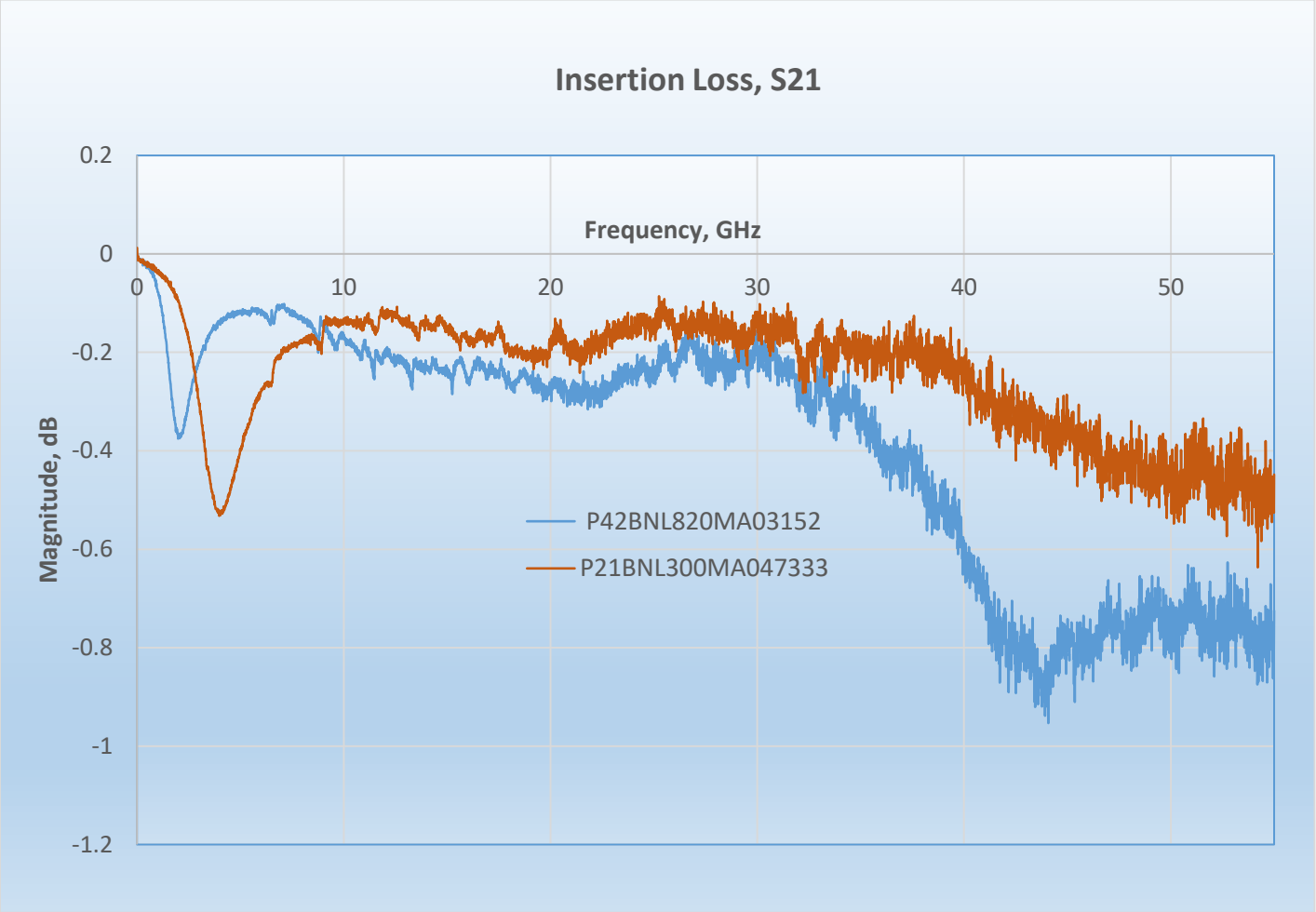
FEATURES



- ✓ Same form and fit as previous Milli-Cap.
- ✓ *Resonance-free DC blocking frequency extended up to 50 GHz.*
- ✓ Available in 0201, 0402 and 0602 footprints.
- ✓ Very low series inductance.
- ✓ Low frequency stability over temperature.
- ✓ SMT by solder or epoxy bonding.
- ✓ X7R part with voltage stability.
- ✓ Applications:
  - Broadband Microwave/Millimeter Wave
  - Test Equipment, Photonics, SONET, TOSA/ROSA, High Speed Data
  - Transimpedance Amplifiers
- ✓ Low insertion loss.
- ✓ Coplanar Waveguide
- ✓ Eliminates wire-bonding

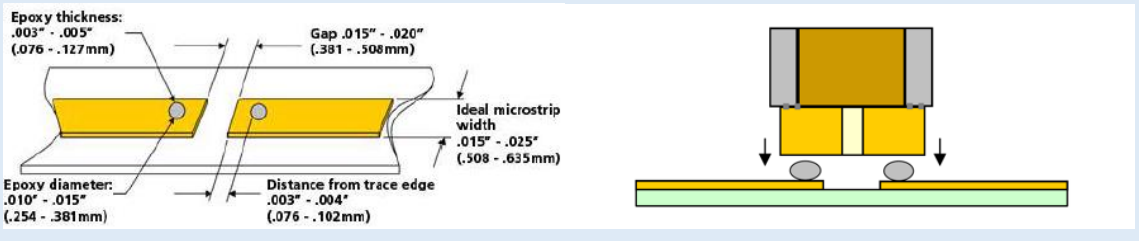


Old Part Number	New Part Number	Capacitor MLC	Capacitor Milli-Cap	Tol.	DF (Max)	Case Size	TCC	Voltage Rating	IR MΩ (Min)	Freq. Range
P21BN300MA04733 / **P21BN300MA4733**	**P21BNL300MA04733**	100 nF	30 pF	±20%	3.5%	0201	X5R	10 V	10^2	16 KHz – 50 GHz
P21BN300MA04282 / **P21BN300MA4282**	**P21BNL300MA04282**	22 nF	30 pF	±20%	3.5%	0201	X5R	10 V	10^2	
P21BN300MA03976 / **P21BN300MA3976**	**P21BNL300MA03976**	10 nF	30 pF	±20%	3.5%	0201	X5R	10 V	10^2	
P21BN300MA04678 / **P21BN300MA4678**	**P21BNL300MA04678**	1.5 nF	30 pF	±20%	3.5%	0201	X7R	25 V	10^2	
P42BN820MA04679 / **P42BN820MA4679**	**P42BNL820MA04679**	22 nF	82 pF	±20%	3.5%	0402	X7R	50 V	10^2	
P42BN820MA03152 / **P42BN820MA3152**	**P42BNL820MA03152**	220 nF	82 pF	±20%	3.5%	0402	X5R	10 V	10^2	
P62BN820MA02636 / **P62BN820MA2636**	**P62BNL820MA02636**	100 nF	82 pF	±20%	3.5%	0602	X7R	25 V	10^2	

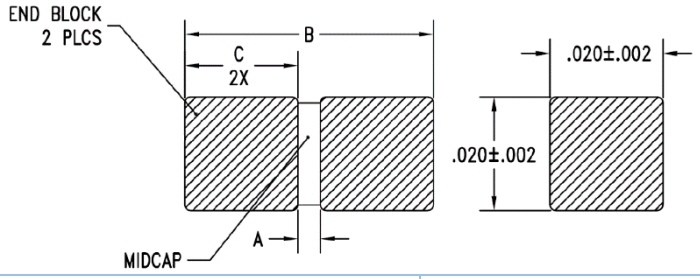


ATTACHMENT METHOD

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"