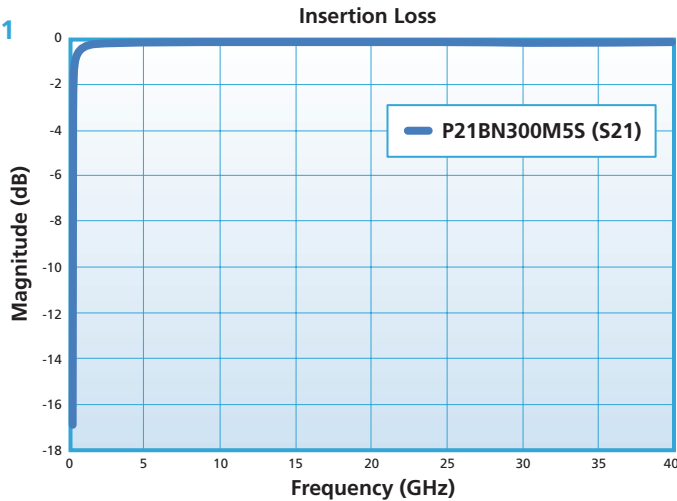


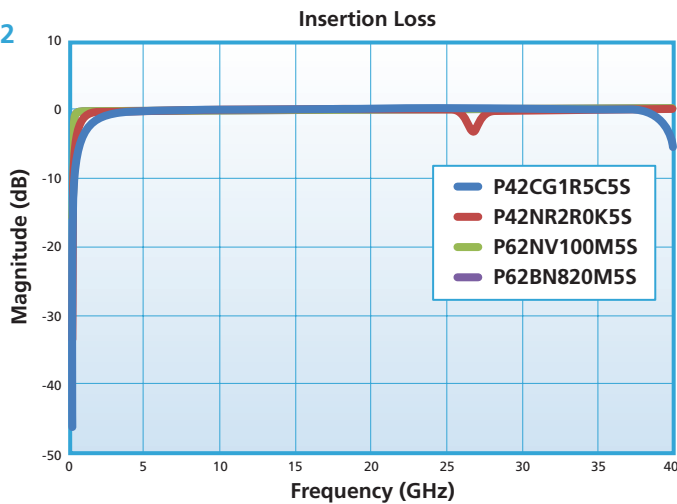
# Milli-Cap® Ideal SMT Capacitor

## Insertion Loss

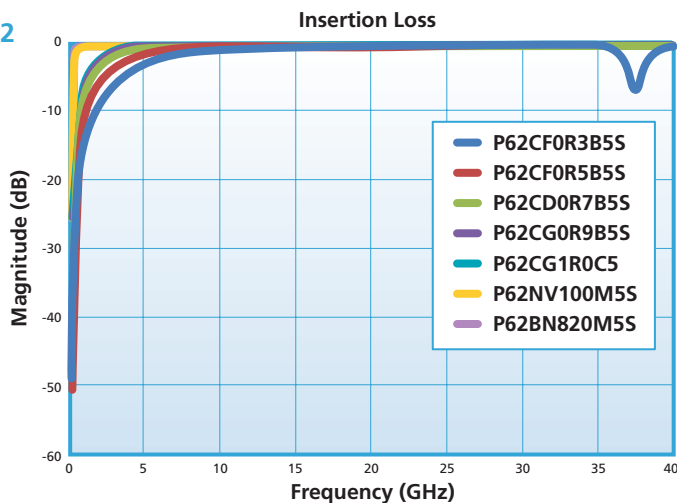
P21



P42



P62



## Features

- 0201, 0402 and 0602 footprints
- Low Loss High Q part
- Very Low Series Inductance
- Ultra High Series Resonance
- Matches typical 50Ω line widths
- Behaves like an Ideal Capacitor
- Single piece construction
- Orientation insensitive

## Functional applications

- Test Equipment, Photonics, SONET, TOSA/ROSA, High Speed Data
- Broadband Microwave/Millimeter Wave
- Transimpedance Amplifiers

## Specification

### Electrical

#### Temperature Coefficient of Capacitance

Values as per electrical characteristics table

#### Milli-Cap® Metallization

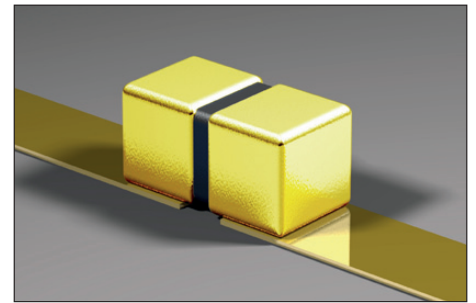
7.5μ" Au over 50μ" Ni

#### Capacitance Range

0.5pF to 82pF

#### Maximum Assembly Process Temperature

250°C



DLI • Novacap • Syfer • Voltronics

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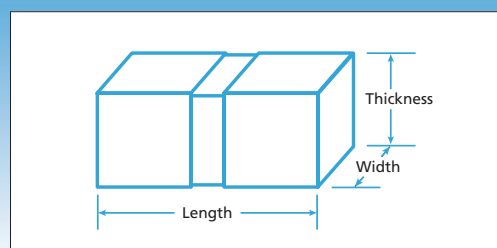
Knowles Capacitors  
Phone: +86 512 62588258-6243  
KCAsiaSales@knowles.com

## Electrical characteristics - Milli-Cap®

| Part Number | Value (pF) | Voltage Rating | TCC                | Dissipation Factor (Max) | Insulation Resistance (Min) | Frequency Range |
|-------------|------------|----------------|--------------------|--------------------------|-----------------------------|-----------------|
| P21BN300M5S | 30         | 50             | ± 15%              | 3.5%                     | 10 <sup>5</sup> MΩ          | 20MHz – 40GHz   |
| P42BN820M5S | 82         | 50             | ± 15%              | 3.5%                     | 10 <sup>5</sup> MΩ          | 20MHz – 40GHz   |
| P42NR2R0K5S | 2          | 50             | N1500 ± 500ppm/°C  | 0.25%                    | 10 <sup>6</sup> MΩ          | 4GHz – 20GHz    |
| P42CG1R5C5S | 1.5        | 50             | 0 ± 30ppm/°C       | 0.7%                     | 10 <sup>6</sup> MΩ          | 8GHz – 32GHz    |
| P62BN820M5S | 82         | 50             | ± 15%              | 3.5%                     | 10 <sup>5</sup> MΩ          | 20MHz – 40GHz   |
| P62NV100M5S | 10         | 50             | N4700 ± 1000ppm/°C | 1.2%                     | 10 <sup>6</sup> MΩ          | 4GHz – 20GHz    |
| P62CG1R0C5S | 1          | 50             | 0 ± 30ppm/°C       | 0.7%                     | 10 <sup>6</sup> MΩ          | 18GHz – 40GHz   |
| P62CD0R7B5S | 0.7        | 50             | N20 ± 15ppm/°C     | 0.15%                    | 10 <sup>6</sup> MΩ          | 20GHz – 40GHz   |
| P62CF0R5B5S | 0.5        | 50             | 0 ± 15 ppm/°C      | 0.6%                     | 10 <sup>6</sup> MΩ          | 28GHz – 40GHz   |

## Dimensional specifications - Milli-Cap®

| Case size  | Milli-Cap®      |                 |                 |
|------------|-----------------|-----------------|-----------------|
|            | Length          | Width           | Thickness       |
| P21 (0201) | 0.020" ± 0.004" | 0.012" ± 0.002" | 0.010" ± 0.002" |
| P42 (0402) | 0.038" ± 0.004" | 0.020" ± 0.002" | 0.020" ± 0.002" |
| P62 (0602) | 0.058" ± 0.004" | 0.020" ± 0.002" | 0.020" ± 0.002" |



## Attachment Methods - Milli-Cap®

### Recommended attachment to soft or hard substrate using Conductive Epoxy

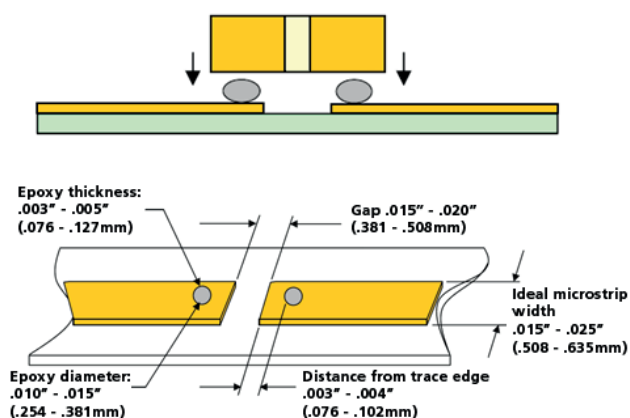
- Place a single drop of conductive epoxy onto each micro strip as illustrated; the edge of the epoxy shall be at least .003"-.004" back from the edge of the trace to prevent filling the gap with epoxy.
- Centering the termination gap of the capacitor within the gap in the micro strip, press with careful, even pressure onto the micro strip ensuring the terminations make good contact with the epoxy drops.
- Cure according to the epoxy manufacturer's preferred schedule, typically 125°C to 150°C max.
- After curing, inspect joint for epoxy shorts across the termination and micro strip gaps that would cause a short across the cap.

Isopropanol and Methanol are both safe to use to pre clean Milli-Caps®.

Isopropanol, and Methanol are not to be used after mounting with conductive epoxy as they act as a solvent!

### Recommended attachment to soft or hard substrate using Solder

- Place a single drop of solder paste onto each micro strip as illustrated; the edge of the solder shall be at least .001"-.002" back from the edge of the trace to prevent filling the gap with solder.
- Centering the termination gap of the capacitor within the gap in the micro strip, press with careful, even pressure onto the micro strip ensuring the terminations make good contact with the drops of solder paste.
- Reflow according to the solder manufacturer's preferred profile, ensuring the reflow temperature does not exceed 250°C.



- After the reflow step is completed, inspect joint for voids or excess flux and non-reflowed solder balls that can degrade performance or cause shorts across the gaps. Proper cleaning after the reflow process is crucial to avoiding performance degradation and discovering poor solder joints. Isopropanol and Methanol are both safe to use with soldered Milli-Caps®.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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