

# Ultra-Miniature 01005 Size Accu-P® **AVX** RF

## Thin-Film RF Microwave Capacitor

### ACCU-P® TECHNOLOGY

The use of silicon oxide, a very low - loss dielectric material, in conjunction with highly conductive electrode metals, results in low ESR and high Q. These high - frequency characteristics change at a slower rate with increasing frequency than for ceramic microwave capacitors.

ACCU-P® meets the fast - growing demand for low - loss (high - Q) capacitors for use in surface mount technology, especially for the wireless communications market at frequencies up to and above 5.8GHz.

ACCU-P® is currently unique in its ability to offer very low capacitance values (0.05 pF) and ultra tight capacitance tolerances ( $\pm 0.01$  pF).



### APPLICATIONS

- RF Modules
- Mobile communications
- Satellite TV
- Global positioning systems
- Filters
- VCO's
- Matching networks

### FEATURES

- Ultra Miniature standard 01005 chip size.
- Ultra tight capacitance tolerances ( $\pm 0.01$  pF).
- Low ESR and high Q at VHF, UHF and microwave frequencies.
- TC  $\pm 30$ ,  $\pm 60$  ppm/ $^{\circ}$ C.
- Nickel/Solder - coated terminations provide excellent solderability and leach resistance.
- High insulation resistance:  $IR \geq 10^{10}$  Ohm.
- Orientation provides high SRF uniformity.
- Repeatable  $C_{EFF}$ , ESR and Q vs. Frequency parameters, both lot to lot and within lots, for increased production yields.

### HOW TO ORDER

|             |                    |                            |                     |           |          |                          |                                                                    |
|-------------|--------------------|----------------------------|---------------------|-----------|----------|--------------------------|--------------------------------------------------------------------|
| <b>C005</b> | <b>Y</b>           | <b>X</b>                   | <b>XXX</b>          | <b>X</b>  | <b>B</b> | <b>S</b>                 | <b>TR</b>                                                          |
| Series      | Voltage<br>Y = 16V | Temperature<br>Coefficient | Capacitance<br>(pF) | Tolerance | Accu-P   | Lead Free<br>Termination | Packaging<br>Code                                                  |
|             |                    |                            |                     |           |          |                          | 5000 pc reel<br>TR/10K = 10,000 pc reel<br>TR/20K = 20,000 pc reel |

**P/N Example: C 0 0 5 Y K 1 R 0 A B S T R**

### QUALITY AND RELIABILITY

Finished parts are tested for standard electrical parameters and visual / mechanical characteristics.

Each production lot is 100% evaluated for:

- Capacitance
- Q Factor
- DWV at  $12.5 \times V_{RATED}$

Each production lot is evaluated on a sample basis for:

- Dimensions
- Insulation Resistance
- Breakdown Voltage
- ESR
- Solderability

In addition, production is periodically evaluated for:

- Mechanical stability
- Endurance (Life)
- Temperature Coefficient
- Accelerated Damp Heat Load (THB)
- Temperature Cycling

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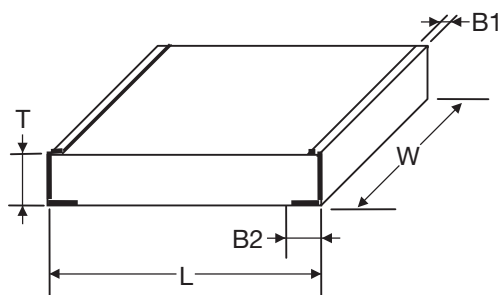
### ACCU-P® 01005 CAPACITANCE RANGE

| Capacitance [pF] | Part Number    | Tolerances<br>Z = ±0.01pF<br>P = ±0.02pF<br>Q = ±0.03pF<br>A = ±0.05pF | TC<br>J = ±30ppm/°C<br>K = ±60ppm/°C | Voltage (V) |
|------------------|----------------|------------------------------------------------------------------------|--------------------------------------|-------------|
| 0.05             | C005YJR05_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.10             | C005YJR10_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.15             | C005YJR15_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.20             | C005YJR20_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.25             | C005YJR25_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.30             | C005YJR30_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.35             | C005YJR35_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.40             | C005YJR40_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.45             | C005YJR45_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.50             | C005YJR50_BSTR | Z, P, Q, A                                                             | J                                    | 16          |
| 0.55             | C005YJR55_BSTR | P, Q, A                                                                | J                                    | 16          |
| 0.60             | C005YJR60_BSTR | P, Q, A                                                                | J                                    | 16          |
| 0.65             | C005YJR65_BSTR | P, Q, A                                                                | J                                    | 16          |
| 0.70             | C005YJR70_BSTR | P, Q, A                                                                | J                                    | 16          |
| 0.75             | C005YJR75_BSTR | P, Q, A                                                                | K                                    | 16          |
| 0.80             | C005YJR80_BSTR | P, Q, A                                                                | K                                    | 16          |
| 0.85             | C005YJR85_BSTR | P, Q, A                                                                | K                                    | 16          |

| Capacitance [pF] | Part Number    | Tolerances<br>Z = ±0.01pF<br>P = ±0.02pF<br>Q = ±0.03pF<br>A = ±0.05pF | TC<br>J = ±30ppm/°C<br>K = ±60ppm/°C | Voltage (V) |
|------------------|----------------|------------------------------------------------------------------------|--------------------------------------|-------------|
| 0.90             | C005YKR09_BSTR | P, Q, A                                                                | K                                    | 16          |
| 0.95             | C005YKR95_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.00             | C005YK1R0_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.10             | C005YK1R1_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.20             | C005YK1R2_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.30             | C005YK1R3_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.40             | C005YK1R4_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.50             | C005YK1R5_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.60             | C005YK1R6_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.70             | C005YK1R7_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.80             | C005YK1R8_BSTR | P, Q, A                                                                | K                                    | 16          |
| 1.90             | C005YK1R9_BSTR | P, Q, A                                                                | K                                    | 16          |
| 2.00             | C005YK2R0_BSTR | P, Q, A                                                                | K                                    | 16          |
| 2.10             | C005YK2R1_BSTR | P, Q, A                                                                | K                                    | 16          |
| 2.20             | C005YK2R2_BSTR | P, Q, A                                                                | K                                    | 16          |
| 2.30             | C005YK2R3_BSTR | P, Q, A                                                                | K                                    | 16          |
| 2.40             | C005YK2R4_BSTR | P, Q, A                                                                | K                                    | 16          |

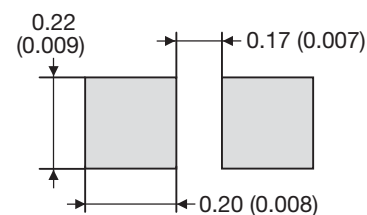
Intermediate capacitance values are available

### DIMENSIONS - mm (inches)



|          |                                               |
|----------|-----------------------------------------------|
| <b>L</b> | 0.405 ± 0.020<br>(0.016 ± 0.001)              |
| <b>W</b> | 0.215 ± 0.020<br>(0.0085 ± 0.001)             |
| <b>T</b> | 0.145 ± 0.020<br>(0.006 ± 0.001)              |
| <b>B</b> | Top (B1): 0.0 +0.10/-0.0<br>(0.0 +0.004/-0.0) |
|          | Bottom (B2): 0.10 ± 0.03<br>(0.004 ± 0.001)   |

### RECOMMENDED PAD LAYOUT - mm (inches)



### PACKAGING SPECIFICATION - mm (inches)

**Standard Packaging:** 5,000 / 10,000 / 20,000pcs in 4" / 7" reels

**Materials:** Reel – Polystyrene

Tape – Paper: 8.00 (0.315)

Component pitch: 2.00 (0.079)

