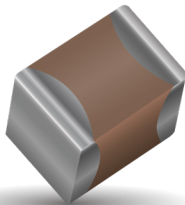


# Y5V Dielectric

## General Specifications



### GENERAL DESCRIPTION

Y5V formulations are for general-purpose use in a limited temperature range. They have a wide temperature characteristic of +22% –82% capacitance change over the operating temperature range of –30°C to +85°C.

These characteristics make Y5V ideal for decoupling applications within limited temperature range.



### PART NUMBER (SEE PAGE 4 FOR COMPLETE PART NUMBER EXPLANATION)

**0805**

**Size**  
(L" x W")

**3**

**Voltage**  
6.3V = 6  
10V = Z  
16V = Y  
25V = 3  
50V = 5

**G**

**Dielectric**  
Y5V = G

**104**

**Capacitance Code (In pF)**  
2 Sig. Digits + Number of Zeros

**Z**

**Capacitance Tolerance**  
Z = +80 –20%

**A**

**Failure Rate**  
A = Not Applicable

**T**

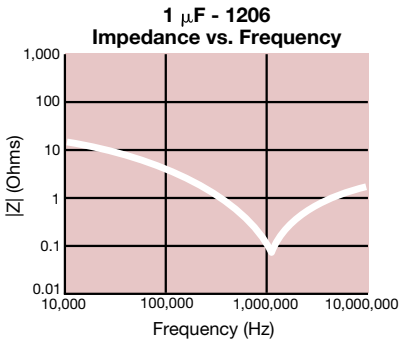
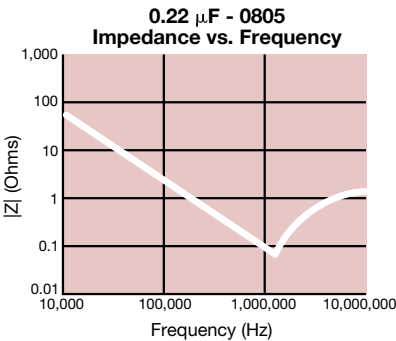
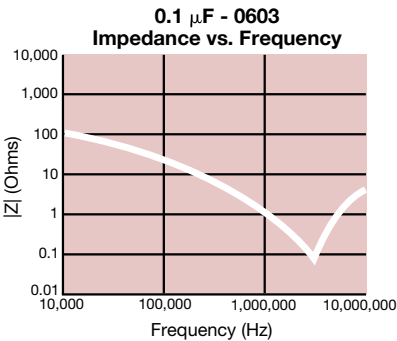
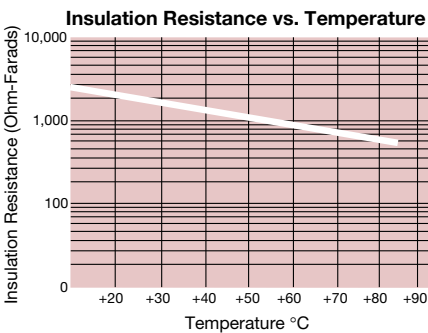
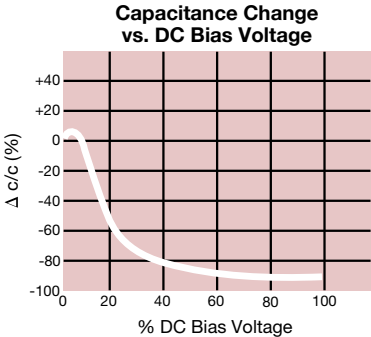
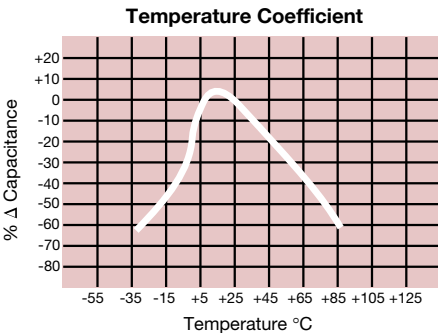
**Terminations**  
T = Plated Ni and Sn

**2**

**Packaging**  
2 = 7" Reel  
4 = 13" Reel

**A**

**Special Code**  
A = Std. Product



# Y5V Dielectric

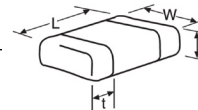
## Specifications and Test Methods

| Parameter/Test                 |                       | Y5V Specification Limits                                                                                                                        | Measuring Conditions                                                                                                                                                                                                                                |                    |
|--------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Operating Temperature Range    |                       | -30°C to +85°C                                                                                                                                  | Temperature Cycle Chamber                                                                                                                                                                                                                           |                    |
| Capacitance                    |                       | Within specified tolerance                                                                                                                      | Freq.: 1.0 kHz $\pm$ 10%<br>Voltage: 1.0Vrms $\pm$ .2V<br>For Cap > 10 $\mu$ F, 0.5Vrms @ 120Hz                                                                                                                                                     |                    |
| Dissipation Factor             |                       | $\leq$ 5.0% for $\geq$ 50V DC rating<br>$\leq$ 7.0% for 25V DC rating<br>$\leq$ 9.0% for 16V DC rating<br>$\leq$ 12.5% for $\leq$ 10V DC rating |                                                                                                                                                                                                                                                     |                    |
| Insulation Resistance          |                       | 10,000M $\Omega$ or 500M $\Omega$ - $\mu$ F, whichever is less                                                                                  |                                                                                                                                                                                                                                                     |                    |
| Dielectric Strength            |                       | No breakdown or visual defects                                                                                                                  | Charge device with 250% of rated voltage for 1-5 seconds, w/charge and discharge current limited to 50 mA (max)                                                                                                                                     |                    |
| Resistance to Flexure Stresses | Appearance            | No defects                                                                                                                                      | Deflection: 2mm<br>Test Time: 30 seconds<br>                                                                                                                     |                    |
|                                | Capacitance Variation | $\leq \pm 30\%$                                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | Meets Initial Values (As Above)                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | $\geq$ Initial Value x 0.1                                                                                                                      |                                                                                                                                                                                                                                                     |                    |
| Solderability                  |                       | $\geq$ 95% of each terminal should be covered with fresh solder                                                                                 | Dip device in eutectic solder at 230 $\pm$ 5°C for 5.0 $\pm$ 0.5 seconds                                                                                                                                                                            |                    |
| Resistance to Solder Heat      | Appearance            | No defects, <25% leaching of either end terminal                                                                                                | Dip device in eutectic solder at 260°C for 60 seconds. Store at room temperature for 24 $\pm$ 2 hours before measuring electrical properties.                                                                                                       |                    |
|                                | Capacitance Variation | $\leq \pm 20\%$                                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | Meets Initial Values (As Above)                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | Meets Initial Values (As Above)                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
| Thermal Shock                  | Appearance            | No visual defects                                                                                                                               | Step 1: -30°C $\pm$ 2°                                                                                                                                                                                                                              | 30 $\pm$ 3 minutes |
|                                | Capacitance Variation | $\leq \pm 20\%$                                                                                                                                 | Step 2: Room Temp                                                                                                                                                                                                                                   | $\leq$ 3 minutes   |
|                                | Dissipation Factor    | Meets Initial Values (As Above)                                                                                                                 | Step 3: +85°C $\pm$ 2°                                                                                                                                                                                                                              | 30 $\pm$ 3 minutes |
|                                | Insulation Resistance | Meets Initial Values (As Above)                                                                                                                 | Step 4: Room Temp                                                                                                                                                                                                                                   | $\leq$ 3 minutes   |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                 | Repeat for 5 cycles and measure after 24 $\pm$ 2 hours at room temperature                                                                                                                                                                          |                    |
| Load Life                      | Appearance            | No visual defects                                                                                                                               | Charge device with twice rated voltage in test chamber set at 85°C $\pm$ 2°C for 1000 hours (+48, -0)<br><br>Remove from test chamber and stabilize at room temperature for 24 $\pm$ 2 hours before measuring.                                      |                    |
|                                | Capacitance Variation | $\leq \pm 30\%$                                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | $\leq$ Initial Value x 1.5 (See Above)                                                                                                          |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | $\geq$ Initial Value x 0.1 (See Above)                                                                                                          |                                                                                                                                                                                                                                                     |                    |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
| Load Humidity                  | Appearance            | No visual defects                                                                                                                               | Store in a test chamber set at 85°C $\pm$ 2°C/ 85% $\pm$ 5% relative humidity for 1000 hours (+48, -0) with rated voltage applied.<br><br>Remove from chamber and stabilize at room temperature and humidity for 24 $\pm$ 2 hours before measuring. |                    |
|                                | Capacitance Variation | $\leq \pm 30\%$                                                                                                                                 |                                                                                                                                                                                                                                                     |                    |
|                                | Dissipation Factor    | $\leq$ Initial Value x 1.5 (See above)                                                                                                          |                                                                                                                                                                                                                                                     |                    |
|                                | Insulation Resistance | $\geq$ Initial Value x 0.1 (See Above)                                                                                                          |                                                                                                                                                                                                                                                     |                    |
|                                | Dielectric Strength   | Meets Initial Values (As Above)                                                                                                                 |                                                                                                                                                                                                                                                     |                    |

## Capacitance Range

**PREFERRED SIZES ARE SHADED**

| SIZE         | 0201        |                                |    |   | 0402        |                                |    |    | 0603        |                                |    |    | 0805           |                                |    |    | 1206           |                                |    |    | 1210           |                                |    |    |    |
|--------------|-------------|--------------------------------|----|---|-------------|--------------------------------|----|----|-------------|--------------------------------|----|----|----------------|--------------------------------|----|----|----------------|--------------------------------|----|----|----------------|--------------------------------|----|----|----|
| Soldering    | Reflow Only |                                |    |   | Reflow/Wave |                                |    |    | Reflow/Wave |                                |    |    | Reflow/Wave    |                                |    |    | Reflow/Mfeve   |                                |    |    | Reflow/Wave    |                                |    |    |    |
| Packaging    | All Paper   |                                |    |   | All Paper   |                                |    |    | All Paper   |                                |    |    | Paper/Embossed |                                |    |    | Paper/Embossed |                                |    |    | Paper/Embossed |                                |    |    |    |
| (L) Length   | mm<br>(in.) | 0.60 ± 0.09<br>(0.024 ± 0.004) |    |   |             | 1.00 ± 0.10<br>(0.040 ± 0.004) |    |    |             | 1.60 ± 0.15<br>(0.063 ± 0.006) |    |    |                | 2.01 ± 0.20<br>(0.079 ± 0.008) |    |    |                | 3.20 ± 0.20<br>(0.126 ± 0.008) |    |    |                | 3.20 ± 0.20<br>(0.126 ± 0.008) |    |    |    |
| W) Width     | mm<br>(in.) | 0.30 ± 0.09<br>(0.011 ± 0.004) |    |   |             | 0.50 ± 0.10<br>(0.020 ± 0.004) |    |    |             | .81 ± 0.15<br>(0.032 ± 0.006)  |    |    |                | 1.25 ± 0.20<br>(0.049 ± 0.008) |    |    |                | 1.60 ± 0.20<br>(0.063 ± 0.008) |    |    |                | 2.50 ± 0.20<br>(0.098 ± 0.008) |    |    |    |
| (t) Terminal | mm<br>(in.) | 0.15 ± 0.05<br>(0.006 ± 0.002) |    |   |             | 0.25 ± 0.15<br>(0.010 ± 0.006) |    |    |             | 0.35 ± 0.15<br>(0.014 ± 0.006) |    |    |                | 0.50 ± 0.25<br>(0.020 ± 0.010) |    |    |                | 0.50 ± 0.25<br>(0.020 ± 0.010) |    |    |                | .50 ± 0.25<br>(0.020 ± 0.010)  |    |    |    |
|              | WVDC        | 63                             | 10 | 6 | 10          | 16                             | 25 | 50 | 10          | 16                             | 25 | 50 | 10             | 16                             | 25 | 50 | 10             | 16                             | 25 | 50 | 10             | 16                             | 25 | 50 |    |
| Cap<br>(pF)  | 820         |                                |    |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 1000        |                                | A  |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 2200        |                                | A  |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
| Cap<br>(μF)  | 4700        |                                | A  |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 0.010       | A                              | A  |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 0.022       | A                              |    |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 0.047       | A                              |    |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 0.10        |                                |    |   | C           |                                | C  |    |             |                                |    | G  | G              |                                |    |    | K              |                                |    |    |                |                                |    |    |    |
|              | 0.22        |                                |    |   |             |                                |    |    |             |                                |    | G  |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 0.33        |                                |    |   |             |                                |    |    |             |                                |    | G  |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 0.47        |                                |    |   |             |                                | C  |    |             |                                |    | G  |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 1.0         |                                |    |   | C           |                                | C  |    |             |                                |    | G  | G              | J                              |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 2.2         |                                |    |   |             |                                | C  |    |             |                                |    | J  |                |                                |    |    | N              | N                              | N  | N  |                |                                |    | N  |    |
|              | 4.7         |                                |    |   |             |                                |    |    |             |                                |    |    |                |                                |    |    | N              | N                              | N  |    |                |                                |    |    |    |
|              | 10.0        |                                |    |   |             |                                |    |    |             |                                |    |    |                |                                |    |    | N              | N                              | P  |    |                |                                |    |    |    |
|              | 22.0        |                                |    |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | 47.0        |                                |    |   |             |                                |    |    |             |                                |    |    |                |                                |    |    |                |                                |    |    |                |                                |    |    |    |
|              | WVDC        | 63                             | 10 |   | 6           | 10                             | 16 | 25 | 50          | 10                             | 16 | 25 | 50             | 10                             | 16 | 25 | 50             | 10                             | 16 | 25 | 50             | 10                             | 16 | 25 | 50 |



[illegible]



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

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