

### K10 Series Multilayer Ceramic Dipped Radial Capacitors



#### KEY BENEFITS

- High capacitance in small size
- Cost effective solution
- Compliant to RoHS Directive 2011/65/EU, and REACH Regulation EC 1907/2006

#### KEY SPECIFICATIONS

- Capacitance range: Class 1 C0G range 10 pF to 1 nF; Class 2 X7R range 100 pF to 100 nF; Class 2 Y5V range 10 nF to 150 nF
- Dielectric strength: 250 % of rated voltage
- Insulation resistance:  $\geq 10\,000\,\text{M}\Omega$
- IEC 60384-9 Class 2
- IEC 60384-8 Class 1 and EIA 198
- Operating Temperature: C0G, X7R:  $-55\,^{\circ}\text{C}$  to  $+125\,^{\circ}\text{C}$ ; Y5V:  $-30\,^{\circ}\text{C}$  to  $+85\,^{\circ}\text{C}$

#### APPLICATIONS

- Bypassing
- Coupling/decoupling
- Signal comparison

#### RESOURCES

- Datasheet: Mono-Kap® - <http://www.vishay.com/doc?45183>
- For technical questions contact [cmll@vishay.com](mailto:cmll@vishay.com)





# CERAMIC CAPACITORS

## MONO-KAP®



## Dipped Radial Multilayer Ceramic K10 Capacitors

| C0G (NP0) DIELECTRIC |      |    |     |
|----------------------|------|----|-----|
| SIZE                 |      | 10 |     |
| RATED VOLTAGE        |      | 50 | 100 |
| VALUE                | CODE |    |     |
| 10 pF                | 100  | •  | •   |
| 12 pF                | 120  | •  | •   |
| 15 pF                | 150  | •  | •   |
| 18 pF                | 180  | •  | •   |
| 22 pF                | 220  | •  | •   |
| 27 pF                | 270  | •  | •   |
| 33 pF                | 330  | •  | •   |
| 39 pF                | 390  | •  | •   |
| 47 pF                | 470  | •  | •   |
| 56 pF                | 560  | •  | •   |
| 68 pF                | 680  | •  | •   |
| 82 pF                | 820  | •  | •   |
| 100 pF               | 101  | •  | •   |
| 120 pF               | 121  | •  | •   |
| 150 pF               | 151  | •  | •   |
| 180 pF               | 181  | •  | •   |
| 220 pF               | 221  | •  | •   |
| 270 pF               | 271  | •  | •   |
| 330 pF               | 331  | •  | •   |
| 390 pF               | 391  | •  | •   |
| 470 pF               | 471  | •  | •   |
| 560 pF               | 561  | •  | •   |
| 680 pF               | 681  | •  | •   |
| 820 pF               | 821  | •  | •   |
| 1000 pF              | 102  | •  | •   |
| 1200 pF              | 122  | •  | •   |
| 1500 pF              | 152  | •  | •   |
| 1800 pF              | 182  | •  | •   |
| 2200 pF              | 222  | •  | •   |
| 2700 pF              | 272  | •  | •   |
| 3300 pF              | 332  | •  | •   |
| 3900 pF              | 392  | •  | •   |
| 4700 pF              | 472  | •  | •   |
| 5600 pF              | 562  | •  | •   |
| 6800 pF              | 682  | •  | •   |
| 8200 pF              | 822  | •  | •   |
| 0.01 µF              | 103  | •  | •   |

| Y5V DIELECTRIC |      |    |     |
|----------------|------|----|-----|
| SIZE           |      | 10 |     |
| RATED VOLTAGE  |      | 50 | 100 |
| VALUE          | CODE |    |     |
| 0.01 µF        | 103  | •  | •   |
| 0.015 µF       | 153  | •  | •   |
| 0.022 µF       | 223  | •  | •   |
| 0.033 µF       | 333  | •  | •   |
| 0.047 µF       | 473  | •  | •   |
| 0.068 µF       | 683  | •  | •   |
| 0.10 µF        | 104  | •  | •   |
| 0.15 µF        | 154  | •  | •   |
| 0.22 µF        | 224  | •  | •   |
| 0.33 µF        | 334  | •  | •   |
| 0.47 µF        | 474  | •  | •   |
| 0.68 µF        | 684  | •  | •   |
| 1.0 µF         | 105  | •  | •   |

| X7R DIELECTRIC |      |    |     |
|----------------|------|----|-----|
| SIZE           |      | 10 |     |
| RATED VOLTAGE  |      | 50 | 100 |
| VALUE          | CODE |    |     |
| 100 pF         | 101  | •  | •   |
| 120 pF         | 121  | •  | •   |
| 150 pF         | 151  | •  | •   |
| 180 pF         | 181  | •  | •   |
| 220 pF         | 221  | •  | •   |
| 270 pF         | 271  | •  | •   |
| 330 pF         | 331  | •  | •   |
| 390 pF         | 391  | •  | •   |
| 470 pF         | 471  | •  | •   |
| 560 pF         | 561  | •  | •   |
| 680 pF         | 681  | •  | •   |
| 820 pF         | 821  | •  | •   |
| 1000 pF        | 102  | •  | •   |
| 1200 pF        | 122  | •  | •   |
| 1500 pF        | 152  | •  | •   |
| 1800 pF        | 182  | •  | •   |
| 2200 pF        | 222  | •  | •   |
| 2700 pF        | 272  | •  | •   |
| 3300 pF        | 332  | •  | •   |
| 3900 pF        | 392  | •  | •   |
| 4700 pF        | 472  | •  | •   |
| 5600 pF        | 562  | •  | •   |
| 6800 pF        | 682  | •  | •   |
| 8200 pF        | 822  | •  | •   |
| 0.01 µF        | 103  | •  | •   |
| 0.012 µF       | 123  | •  | •   |
| 0.015 µF       | 153  | •  | •   |
| 0.018 µF       | 183  | •  | •   |
| 0.022 µF       | 223  | •  | •   |
| 0.027 µF       | 273  | •  | •   |
| 0.033 µF       | 333  | •  | •   |
| 0.039 µF       | 393  | •  | •   |
| 0.047 µF       | 473  | •  | •   |
| 0.056 µF       | 563  | •  | •   |
| 0.068 µF       | 683  | •  | •   |
| 0.082 µF       | 823  | •  | •   |
| 0.10 µF        | 104  | •  | •   |
| 0.12 µF        | 124  | •  | •   |
| 0.15 µF        | 154  | •  | •   |
| 0.22 µF        | 224  | •  | •   |
| 0.33 µF        | 334  | •  | •   |
| 0.47 µF        | 474  | •  | •   |
| 0.68 µF        | 684  | •  | •   |
| 1.0 µF         | 105  | •  | •   |

| QUICK REFERENCE DATA     |                  |       |                  |       |                    |
|--------------------------|------------------|-------|------------------|-------|--------------------|
| DESCRIPTION              | VALUE            |       |                  |       |                    |
| Capacitance range        | 10 pF to 1000 pF |       | 100 pF to 0.1 µF |       | 0.01 µF to 0.15 µF |
| Rated DC voltage         | 50 V             | 100 V | 50 V             | 100 V | 50 V               |
| Tolerance on capacitance | ± 5 %, ± 10 %    |       | ± 10 %, ± 20 %   |       | + 80 %/- 20 %      |
| Dielectric Code          | C0G (NP0)        |       | X7R              |       | Y5V                |

| ORDERING INFORMATION                       |                                                                                            |                                                            |                  |                   |                                                   |                     |                                                                                         |                                           |                                      |
|--------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------|-------------------|---------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------|
| K                                          | 103                                                                                        | K                                                          | 10               | X7R               | F                                                 | 5                   | 3                                                                                       | H                                         | 5                                    |
| PRODUCT TYPE                               | CAPACITANCE CODE                                                                           | CAPACITANCE TOLERANCE                                      | SIZE CODE        | TEMP. CHAR.       | RATED VOLTAGE                                     | LEAD DIA.           | LEAD LENGTH/ PACKAGING                                                                  | LEAD STYLE                                | LEAD SPACING                         |
| K = Mono-Kap                               | Two significant digits followed by the number of zeros.<br>For example:<br>103 = 10 000 pF | J = ± 5 %<br>K = ± 10 %<br>M = ± 20 %<br>Z = + 80 %/- 20 % | Ref. mech. spec. | C0G<br>X7R<br>Y5V | F = 50 V <sub>DC</sub><br>H = 100 V <sub>DC</sub> | 5 = 0.5 mm (0.020") | 3 = Bulk, with lead length of 30 ± 5.0 mm (1.25")<br>T = Tape and reel<br>U = Ammo pack | L = Straight Lead<br>H = High seated assy | 2 = 2.5 (0.100")<br>5 = 5.0 (0.200") |
| Ordering Example: K-103-K-10-X7R-F-5-3-H-5 |                                                                                            |                                                            |                  |                   |                                                   |                     |                                                                                         |                                           |                                      |

Capacitors - High Capacitance in Small Size

Revision 16-Nov-09