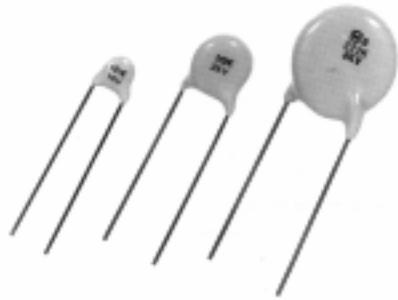


## High Voltage Ceramic Disc Capacitors Rated 1 to 3 kVDC, Temp. Char. Y5P

Series: **KBP**



### ■ Features

- Wide operating temperature range: -25 to 125 °C (Including maximum temperature rise of +20 °C)
- Improved in "Voltage vs. Temperature Rise" through low loss ceramic dielectric materials applied
- Temperature stable type (Char. B/Y5P)
- Flame-retardant insulating coating applied

### ■ Recommended Applications

- Snubber circuit of switching power supply
- Horizontal resonance circuit of TV and CRT display
- Inverter lighting apparatus
- High voltage and pulse circuit

### ■ Explanation of Part Numbers

|              |          |          |          |               |          |                     |          |          |           |             |          |            |
|--------------|----------|----------|----------|---------------|----------|---------------------|----------|----------|-----------|-------------|----------|------------|
| 1            | 2        | 3        | 4        | 5             | 6        | 7                   | 8        | 9        | 10        | 11          | 12       | (Examples) |
| <b>E</b>     | <b>C</b> | <b>K</b> | <b>D</b> | <b>3</b>      | <b>D</b> | <b>2</b>            | <b>2</b> | <b>2</b> | <b>K</b>  | <b>B</b>    | <b>P</b> |            |
| Product Code |          |          | Style    | Rated Voltage |          | Nominal Capacitance |          |          | Cap. Tol. | Temp. Char. | Suffix   |            |

### ■ Specifications

| Characteristics                  | Specifications                                                                     |
|----------------------------------|------------------------------------------------------------------------------------|
| Operating Temperature Range      | -25 to 125 °C<br>(Including maximum temperature rise of +20 °C)                    |
| Rated Voltage                    | 1 kVDC, 2 kVDC and 3 kVDC                                                          |
| Dielectric With-standing Voltage | 200 % of the rated voltage for 1 to 5 seconds                                      |
| Capacitance                      | Within the specified tolerance, when measured at 1 kHz±20 %, 1 to 5 Vrms and 20 °C |
| Dissipation Factor (tan δ)       | 0.025 max. at 1 kHz±20 %, 1 to 5 Vrms, and 20 °C                                   |
| Insulation Resistance            | 10000 MΩ min. at 500 VDC and 1 minute electrification                              |
| Temperature Characteristics      | Capacitance Change: ±10 % max. over the temperature range of -25 to 85 °C          |

### ■ Precautions for Handling

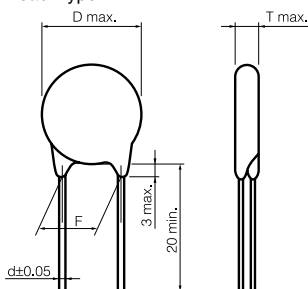
See Page 84 to 86

### ■ Packaging Informations

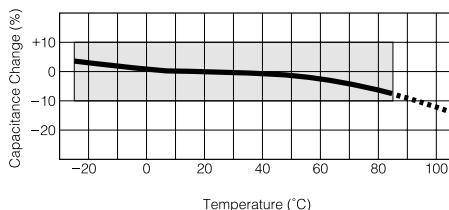
See Page 87 to 88

## ■ Dimensions in mm (not to scale)

## Straight Lead Type



## ■ Typical Temperature Characteristics



## ■ Ratings and Characteristics

| Rated Voltage | Capacitance       |          | Dimensions in mm |        | Straight Lead Type (Bulk) |                  |      | Straight Lead Taped Type* |            |                  |      | Crimped Lead Taped Type* |            |                  |      |
|---------------|-------------------|----------|------------------|--------|---------------------------|------------------|------|---------------------------|------------|------------------|------|--------------------------|------------|------------------|------|
|               | Nominal Cap. (pF) | Tol. (%) | D max.           | T max. | Part Number               | Dimensions in mm |      | Part Number               | Taped Type | Dimensions in mm |      | Part Number              | Taped Type | Dimensions in mm |      |
|               |                   |          |                  |        |                           | F                | d    |                           |            | F                | d    |                          |            | F                | d    |
| 1 kV DC       | 100               | ±10      | 6.0              | 4.5    | ECKD3A101KBP              | 5.0±1.0          | 0.60 | ECKZ3A101KBP              | Z0         | 5.0              | 0.60 | ECKR3A101KBP             | R0         | 5.0              | 0.60 |
|               | 120               | ±10      | 6.0              | 4.5    | ECKD3A121KBP              | 5.0±1.0          | 0.60 | ECKZ3A121KBP              | Z0         | 5.0              | 0.60 | ECKR3A121KBP             | R0         | 5.0              | 0.60 |
|               | 150               | ±10      | 6.0              | 4.5    | ECKD3A151KBP              | 5.0±1.0          | 0.60 | ECKZ3A151KBP              | Z0         | 5.0              | 0.60 | ECKR3A151KBP             | R0         | 5.0              | 0.60 |
|               | 180               | ±10      | 6.0              | 4.5    | ECKD3A181KBP              | 5.0±1.0          | 0.60 | ECKZ3A181KBP              | Z0         | 5.0              | 0.60 | ECKR3A181KBP             | R0         | 5.0              | 0.60 |
|               | 220               | ±10      | 6.0              | 4.5    | ECKD3A221KBP              | 5.0±1.0          | 0.60 | ECKZ3A221KBP              | Z0         | 5.0              | 0.60 | ECKR3A221KBP             | R0         | 5.0              | 0.60 |
|               | 270               | ±10      | 6.0              | 4.5    | ECKD3A271KBP              | 5.0±1.0          | 0.60 | ECKZ3A271KBP              | Z0         | 5.0              | 0.60 | ECKR3A271KBP             | R0         | 5.0              | 0.60 |
|               | 330               | ±10      | 6.0              | 4.5    | ECKD3A331KBP              | 5.0±1.0          | 0.60 | ECKZ3A331KBP              | Z0         | 5.0              | 0.60 | ECKR3A331KBP             | R0         | 5.0              | 0.60 |
|               | 390               | ±10      | 6.0              | 4.5    | ECKD3A391KBP              | 5.0±1.0          | 0.60 | ECKZ3A391KBP              | Z0         | 5.0              | 0.60 | ECKR3A391KBP             | R0         | 5.0              | 0.60 |
|               | 470               | ±10      | 6.0              | 4.5    | ECKD3A471KBP              | 5.0±1.0          | 0.60 | ECKZ3A471KBP              | Z0         | 5.0              | 0.60 | ECKR3A471KBP             | R0         | 5.0              | 0.60 |
|               | 560               | ±10      | 7.0              | 4.5    | ECKD3A561KBP              | 5.0±1.0          | 0.60 | ECKZ3A561KBP              | Z0         | 5.0              | 0.60 | ECKR3A561KBP             | R0         | 5.0              | 0.60 |
|               | 680               | ±10      | 7.0              | 4.5    | ECKD3A681KBP              | 5.0±1.0          | 0.60 | ECKZ3A681KBP              | Z0         | 5.0              | 0.60 | ECKR3A681KBP             | R0         | 5.0              | 0.60 |
|               | 820               | ±10      | 7.5              | 4.5    | ECKD3A821KBP              | 5.0±1.0          | 0.60 | ECKZ3A821KBP              | Z0         | 5.0              | 0.60 | ECKR3A821KBP             | R0         | 5.0              | 0.60 |
|               | 1000              | ±10      | 9.0              | 4.5    | ECKD3A102KBP              | 5.0±1.0          | 0.60 | ECKZ3A102KBP              | Z0         | 5.0              | 0.60 | ECKR3A102KBP             | R0         | 5.0              | 0.60 |
|               | 1200              | ±10      | 9.0              | 4.5    | ECKD3A122KBP              | 5.0±1.0          | 0.60 | ECKZ3A122KBP              | Z0         | 5.0              | 0.60 | ECKR3A122KBP             | R0         | 5.0              | 0.60 |
|               | 1500              | ±10      | 9.5              | 4.5    | ECKD3A152KBP              | 5.0±1.0          | 0.60 | ECKZ3A152KBP              | Z0         | 5.0              | 0.60 | ECKR3A152KBP             | R0         | 5.0              | 0.60 |
|               | 1800              | ±10      | 10.0             | 4.5    | ECKD3A182KBP              | 5.0±1.0          | 0.60 | ECKZ3A182KBP              | Z0         | 5.0              | 0.60 | ECKR3A182KBP             | R0         | 5.0              | 0.60 |
|               | 2200              | ±10      | 12.0             | 4.5    | ECKD3A222KBP              | 5.0±1.0          | 0.60 | ECKZ3A222KBP              | Z0         | 5.0              | 0.60 | ECKR3A222KBP             | R0         | 5.0              | 0.60 |
|               | 2700              | ±10      | 12.0             | 4.5    | ECKD3A272KBP              | 5.0±1.0          | 0.60 | ECKZ3A272KBP              | Z0         | 5.0              | 0.60 | ECKR3A272KBP             | R0         | 5.0              | 0.60 |
| 2 kV DC       | 3300              | ±10      | 13.5             | 4.5    | ECKD3A332KBP              | 10.0±1.5         | 0.60 | ECKZ3A332KBP              | Z1         | 7.5              | 0.65 | ECKR3A332KBP             | R1         | 7.5              | 0.65 |
|               | 3900              | ±10      | 13.5             | 4.5    | ECKD3A392KBP              | 10.0±1.5         | 0.60 | ECKZ3A392KBP              | Z1         | 7.5              | 0.65 | ECKR3A392KBP             | R1         | 7.5              | 0.65 |
|               | 4700              | ±10      | 15.5             | 4.5    | ECKD3A472KBP              | 10.0±1.5         | 0.65 | ECKZ3A472KBP              | Z2         | 7.5              | 0.65 | ECKR3A472KBP             | R2         | 7.5              | 0.65 |
|               | 5600              | ±10      | 17.0             | 4.5    | ECKD3A562KBP              | 10.0±1.5         | 0.65 | ECKZ3A562KBP              | Z2         | 7.5              | 0.65 | ECKR3A562KBP             | R2         | 7.5              | 0.65 |
|               | 100               | ±10      | 7.0              | 5.0    | ECKD3D101KBP              | 7.5±1.5          | 0.60 | ECKZ3D101KBP              | Z1         | 7.5              | 0.65 | ECKR3D101KBP             | R1         | 7.5              | 0.65 |
|               | 120               | ±10      | 7.0              | 5.0    | ECKD3D121KBP              | 7.5±1.5          | 0.60 | ECKZ3D121KBP              | Z1         | 7.5              | 0.65 | ECKR3D121KBP             | R1         | 7.5              | 0.65 |
|               | 150               | ±10      | 7.0              | 5.0    | ECKD3D151KBP              | 7.5±1.5          | 0.60 | ECKZ3D151KBP              | Z1         | 7.5              | 0.65 | ECKR3D151KBP             | R1         | 7.5              | 0.65 |
|               | 180               | ±10      | 7.0              | 5.0    | ECKD3D181KBP              | 7.5±1.5          | 0.60 | ECKZ3D181KBP              | Z1         | 7.5              | 0.65 | ECKR3D181KBP             | R1         | 7.5              | 0.65 |
|               | 220               | ±10      | 7.0              | 5.0    | ECKD3D221KBP              | 7.5±1.5          | 0.60 | ECKZ3D221KBP              | Z1         | 7.5              | 0.65 | ECKR3D221KBP             | R1         | 7.5              | 0.65 |
|               | 270               | ±10      | 7.0              | 5.0    | ECKD3D271KBP              | 7.5±1.5          | 0.60 | ECKZ3D271KBP              | Z1         | 7.5              | 0.65 | ECKR3D271KBP             | R1         | 7.5              | 0.65 |
|               | 330               | ±10      | 7.0              | 5.0    | ECKD3D331KBP              | 7.5±1.5          | 0.60 | ECKZ3D331KBP              | Z1         | 7.5              | 0.65 | ECKR3D331KBP             | R1         | 7.5              | 0.65 |
|               | 390               | ±10      | 7.0              | 5.0    | ECKD3D391KBP              | 7.5±1.5          | 0.60 | ECKZ3D391KBP              | Z1         | 7.5              | 0.65 | ECKR3D391KBP             | R1         | 7.5              | 0.65 |
|               | 470               | ±10      | 7.5              | 5.0    | ECKD3D471KBP              | 7.5±1.5          | 0.60 | ECKZ3D471KBP              | Z1         | 7.5              | 0.65 | ECKR3D471KBP             | R1         | 7.5              | 0.65 |
|               | 560               | ±10      | 8.0              | 5.0    | ECKD3D561KBP              | 7.5±1.5          | 0.60 | ECKZ3D561KBP              | Z1         | 7.5              | 0.65 | ECKR3D561KBP             | R1         | 7.5              | 0.65 |
|               | 680               | ±10      | 9.0              | 5.0    | ECKD3D681KBP              | 7.5±1.5          | 0.60 | ECKZ3D681KBP              | Z1         | 7.5              | 0.65 | ECKR3D681KBP             | R1         | 7.5              | 0.65 |
|               | 820               | ±10      | 9.0              | 5.0    | ECKD3D821KBP              | 7.5±1.5          | 0.60 | ECKZ3D821KBP              | Z1         | 7.5              | 0.65 | ECKR3D821KBP             | R1         | 7.5              | 0.65 |
|               | 1000              | ±10      | 10.0             | 5.0    | ECKD3D102KBP              | 7.5±1.5          | 0.60 | ECKZ3D102KBP              | Z1         | 7.5              | 0.65 | ECKR3D102KBP             | R1         | 7.5              | 0.65 |
|               | 1200              | ±10      | 10.5             | 5.0    | ECKD3D122KBP              | 7.5±1.5          | 0.60 | ECKZ3D122KBP              | Z1         | 7.5              | 0.65 | ECKR3D122KBP             | R1         | 7.5              | 0.65 |
|               | 1500              | ±10      | 12.0             | 5.0    | ECKD3D152KBP              | 7.5±1.5          | 0.60 | ECKZ3D152KBP              | Z1         | 7.5              | 0.65 | ECKR3D152KBP             | R1         | 7.5              | 0.65 |
|               | 1800              | ±10      | 12.5             | 5.0    | ECKD3D182KBP              | 7.5±1.5          | 0.65 | ECKZ3D182KBP              | Z1         | 7.5              | 0.65 | ECKR3D182KBP             | R1         | 7.5              | 0.65 |
|               | 2200              | ±10      | 14.0             | 5.0    | ECKD3D222KBP              | 10.0±1.5         | 0.65 | ECKZ3D222KBP              | Z2         | 7.5              | 0.65 | ECKR3D222KBP             | R2         | 7.5              | 0.65 |
|               | 2700              | ±10      | 16.0             | 5.0    | ECKD3D272KBP              | 10.0±1.5         | 0.65 | ECKZ3D272KBP              | Z2         | 7.5              | 0.65 | ECKR3D272KBP             | R2         | 7.5              | 0.65 |
|               | 3300              | ±10      | 17.0             | 5.0    | ECKD3D332KBP              | 10.0±1.5         | 0.65 | ECKZ3D332KBP              | Z2         | 7.5              | 0.65 | ECKR3D332KBP             | R2         | 7.5              | 0.65 |
|               | 3900              | ±10      | 18.0             | 5.0    | ECKD3D392KBP              | 10.0±1.5         | 0.65 | ECKZ3D392KBP              | Z2         | 7.5              | 0.65 | ECKR3D392KBP             | R2         | 7.5              | 0.65 |
|               | 4700              | ±10      | 25.0             | 5.0    | ECKD3D472KBP              | 10.0±1.5         | 0.80 | —                         | —          | —                | —    | —                        | —          | —                | —    |
|               | 5600              | ±10      | 25.0             | 5.0    | ECKD3D562KBP              | 10.0±1.5         | 0.80 | —                         | —          | —                | —    | —                        | —          | —                | —    |

To be continued→

### ■ Ratings and Characteristics

| Rated Voltage | Capacitance       |             | Dimensions in mm |        | Straight Lead Type (Bulk) |                  |      |              | Straight Lead Taped Type* |                  |      |              | Crimped Lead Taped Type* |                  |      |  |
|---------------|-------------------|-------------|------------------|--------|---------------------------|------------------|------|--------------|---------------------------|------------------|------|--------------|--------------------------|------------------|------|--|
|               | Nominal Cap. (pF) | ** Tol. (%) | D max.           | T max. | Part Number               | Dimensions in mm |      | Part Number  | Taped Type                | Dimensions in mm |      | Part Number  | Taped Type               | Dimensions in mm |      |  |
|               |                   |             |                  |        |                           | F                | d    |              |                           | F                | d    |              |                          | F                | d    |  |
|               |                   |             |                  |        |                           |                  |      |              |                           |                  |      |              |                          |                  |      |  |
| 3 kV DC       | 100               | ±10         | 7.5              | 6.0    | ECKD3F101KBP              | 7.5±1.5          | 0.65 | ECKZ3F101KBP | Z1                        | 7.5              | 0.65 | ECKR3F101KBP | R1                       | 7.5              | 0.65 |  |
|               | 120               | ±10         | 7.5              | 6.0    | ECKD3F121KBP              | 7.5±1.5          | 0.65 | ECKZ3F121KBP | Z1                        | 7.5              | 0.65 | ECKR3F121KBP | R1                       | 7.5              | 0.65 |  |
|               | 150               | ±10         | 7.5              | 6.0    | ECKD3F151KBP              | 7.5±1.5          | 0.65 | ECKZ3F151KBP | Z1                        | 7.5              | 0.65 | ECKR3F151KBP | R1                       | 7.5              | 0.65 |  |
|               | 180               | ±10         | 7.5              | 6.0    | ECKD3F181KBP              | 7.5±1.5          | 0.65 | ECKZ3F181KBP | Z1                        | 7.5              | 0.65 | ECKR3F181KBP | R1                       | 7.5              | 0.65 |  |
|               | 220               | ±10         | 7.5              | 6.0    | ECKD3F221KBP              | 7.5±1.5          | 0.65 | ECKZ3F221KBP | Z1                        | 7.5              | 0.65 | ECKR3F221KBP | R1                       | 7.5              | 0.65 |  |
|               | 270               | ±10         | 7.5              | 6.0    | ECKD3F271KBP              | 7.5±1.5          | 0.65 | ECKZ3F271KBP | Z1                        | 7.5              | 0.65 | ECKR3F271KBP | R1                       | 7.5              | 0.65 |  |
|               | 330               | ±10         | 8.0              | 6.0    | ECKD3F331KBP              | 7.5±1.5          | 0.65 | ECKZ3F331KBP | Z1                        | 7.5              | 0.65 | ECKR3F331KBP | R1                       | 7.5              | 0.65 |  |
|               | 390               | ±10         | 9.0              | 6.0    | ECKD3F391KBP              | 7.5±1.5          | 0.65 | ECKZ3F391KBP | Z1                        | 7.5              | 0.65 | ECKR3F391KBP | R1                       | 7.5              | 0.65 |  |
|               | 470               | ±10         | 9.5              | 6.0    | ECKD3F471KBP              | 7.5±1.5          | 0.65 | ECKZ3F471KBP | Z1                        | 7.5              | 0.65 | ECKR3F471KBP | R1                       | 7.5              | 0.65 |  |
|               | 560               | ±10         | 10.0             | 6.0    | ECKD3F561KBP              | 7.5±1.5          | 0.65 | ECKZ3F561KBP | Z1                        | 7.5              | 0.65 | ECKR3F561KBP | R1                       | 7.5              | 0.65 |  |
|               | 680               | ±10         | 11.0             | 6.0    | ECKD3F681KBP              | 7.5±1.5          | 0.65 | ECKZ3F681KBP | Z1                        | 7.5              | 0.65 | ECKR3F681KBP | R1                       | 7.5              | 0.65 |  |
|               | 820               | ±10         | 11.0             | 6.0    | ECKD3F821KBP              | 7.5±1.5          | 0.65 | ECKZ3F821KBP | Z1                        | 7.5              | 0.65 | ECKR3F821KBP | R1                       | 7.5              | 0.65 |  |
|               | 1000              | ±10         | 12.5             | 6.0    | ECKD3F102KBP              | 7.5±1.5          | 0.65 | ECKZ3F102KBP | Z1                        | 7.5              | 0.65 | ECKR3F102KBP | R1                       | 7.5              | 0.65 |  |
|               | 1200              | ±10         | 14.5             | 6.0    | ECKD3F122KBP              | 10.0±1.5         | 0.65 | ECKZ3F122KBP | Z1                        | 7.5              | 0.65 | ECKR3F122KBP | R1                       | 7.5              | 0.65 |  |
|               | 1500              | ±10         | 14.5             | 6.0    | ECKD3F152KBP              | 10.0±1.5         | 0.65 | ECKZ3F152KBP | Z1                        | 7.5              | 0.65 | ECKR3F152KBP | R1                       | 7.5              | 0.65 |  |
|               | 1800              | ±10         | 16.0             | 6.0    | ECKD3F182KBP              | 10.0±1.5         | 0.65 | ECKZ3F182KBP | Z2                        | 7.5              | 0.65 | ECKR3F182KBP | R2                       | 7.5              | 0.65 |  |
|               | 2200              | ±10         | 17.0             | 6.0    | ECKD3F222KBP              | 10.0±1.5         | 0.65 | ECKZ3F222KBP | Z2                        | 7.5              | 0.65 | ECKR3F222KBP | R2                       | 7.5              | 0.65 |  |
|               | 2700              | ±10         | 18.5             | 6.0    | ECKD3F272KBP              | 10.0±1.5         | 0.65 | ECKZ3F272KBP | Z2                        | 7.5              | 0.65 | ECKR3F272KBP | R2                       | 7.5              | 0.65 |  |

\* See Page 73 to 75 for Specifications for Radial Taped Types.

\*\* Capacitance tolerance of ±5 % is available on special order.

#### Notes:

- In Straight Lead Types (Bulk), Dimensions "F (Lead Spacing)" of 5.0 mm is available for rated "2 kVDC" and "3 kVDC" Capacitors that are 11.0 mm or less in the diameter on special order.
- In Straight Lead Taped Types, Dimensions "F (Lead Spacing)" of 5.0 mm is available for rated "2 kVDC" and "3 kVDC" Capacitors that are 11.0 mm or less in the diameter on special order.  
(See Page 73 to 75 for Taped Types of Zo)