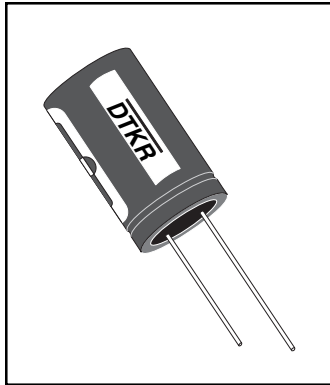


# Type DTKR Radial Leaded Capacitors



- 105°C - Long Life
- High CV Product
- High Reliability
- Ideal for High Density Printed Circuit Boards
- Very High Volumetric Efficiency
- Suitable for General Purpose Applications, Coupling, Decoupling, Bypass and Filtering Circuits

## GENERAL SPECIFICATIONS

Operating Temperature:  
-40°C to +105°C

Voltage Range:  
6.3 WVDC to 450 WVDC

Capacitance Range:  
0.47  $\mu$ F to 15,000  $\mu$ F

Capacitance Tolerance:  
 $\pm$ 20%

DC Leakage Current:  
6.3 - 250VDC  
 $I = .01CV + 3\mu$ A Max  
after 2 minutes application of DC working voltage at 25°C

Over 350VDC  
 $I = .03CV + 10\mu$ A Max  
after 2 minutes application of DC working voltage at 25°C

C = Capacitance in  $\mu$ F

V = Rated Voltage

I = Leakage Current in  $\mu$ A

QA Stability Test:  
Apply WVDC for 1,000 hrs at 105°C

- Capacitance change 20% of initial limits
- DC leakage current meets initial limits
- ESR  $\leq$ 200% of initial measured value

Shelf Life:

- 500 hours; no voltage applied
- Capacitor change within 20% of initial values
- Dissipation factor not exceed 200% of initial requirements
- Leakage current: not exceed 200% of initial requirement

Dissipation Factor @ 120Hz, 25°C

|        |     |    |    |    |    |    |    |    |     |         |         |
|--------|-----|----|----|----|----|----|----|----|-----|---------|---------|
| WV (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | 160-250 | 350-400 |
| DF(%)  | 26  | 22 | 18 | 16 | 14 | 12 | 10 | 10 | 10  | 15      | 20      |

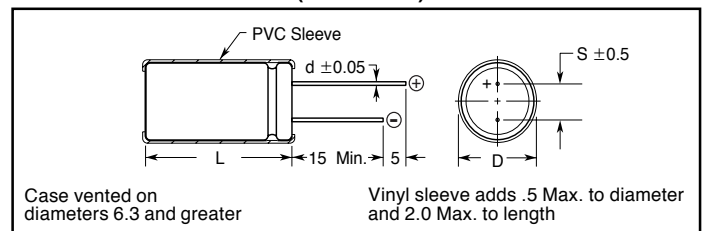
For capacitors whose capacitance value exceeds 1000 $\mu$ F, the value of DF(%) is increased 2% for every additional 1000 $\mu$ F:

The maximum ripple current at 105°C and 120 Hz for DTKR capacitors is shown in the Standard Rating Table. Maximum ripple current may be adjusted by the multipliers in the following tables.

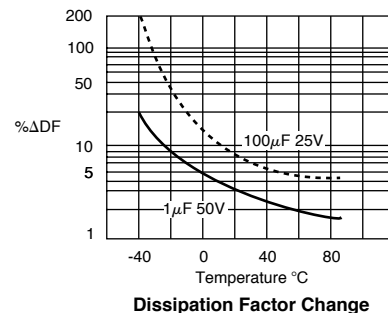
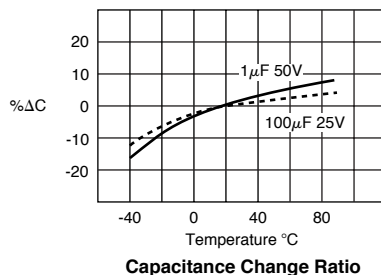
| Rated WVDC | Ripple Multipliers |       |      |       |
|------------|--------------------|-------|------|-------|
|            | 60Hz               | 120Hz | 1kHz | 10kHz |
| 6 to 25    | .80                | 1.0   | 1.10 | 1.20  |
| 35 to 100  | .75                | 1.0   | 1.30 | 1.40  |
| 160 to 250 | .70                | 1.0   | 1.40 | 1.60  |
| 350 to 400 | .60                | 1.0   | 1.50 | 1.80  |

| Ambient Temperature | Ripple Multiplier |
|---------------------|-------------------|
| +105°C              | 1.00              |
| +85°C               | 1.50              |
| +70°C               | 1.80              |

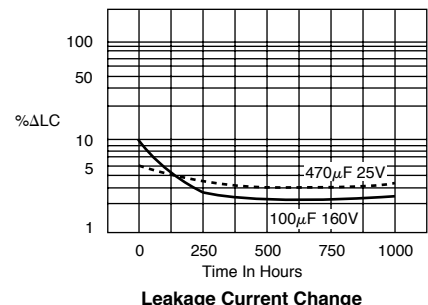
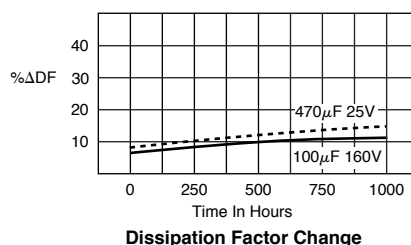
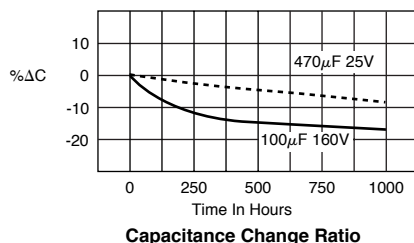
## Outline Dimensions (Millimeters)



## Temperature Characteristics



## Load Life Characteristics





| Cap<br>( $\mu$ F)            | Max ESR<br>Ohms<br>120Hz 25°C | Max Ripple mA<br>120Hz 105°C | Size (Inches) |             |                    |     | Part Description |
|------------------------------|-------------------------------|------------------------------|---------------|-------------|--------------------|-----|------------------|
|                              |                               |                              | D<br>Diameter | L<br>Length | S<br>Lead<br>Space | d   |                  |
| <b>6.3 WVDC; 8 VDC Surge</b> |                               |                              |               |             |                    |     |                  |
| 100                          | 3.45                          | 100                          | 5             | 11          | 2                  | 0.5 | DTKR101M6R3ST    |
| 220                          | 1.57                          | 165                          | 6.3           | 11          | 2.5                | 0.5 | DTKR221M6R3ST    |
| 330                          | 1.05                          | 200                          | 6.3           | 11.5        | 2.5                | 0.5 | DTKR331M6R3ST    |
| 470                          | 0.73                          | 280                          | 8             | 11.5        | 3.5                | 0.6 | DTKR471M6R3ST    |
| 1000                         | 0.35                          | 470                          | 10            | 13          | 5                  | 0.6 | DTKR102M6R3ST    |
| 2200                         | 0.17                          | 930                          | 10            | 21          | 5                  | 0.6 | DTKR222M6R3ST    |
| 3300                         | 0.12                          | 1100                         | 13            | 21          | 5                  | 0.6 | DTKR332M6R3ST    |
| 4700                         | 0.1                           | 1320                         | 16            | 26          | 7.5                | 0.8 | DTKR472M6R3ST    |
| 6800                         | 0.07                          | 1490                         | 16            | 25          | 7.5                | 0.8 | DTKR682M6R3ST    |
| 10000                        | 0.06                          | 1830                         | 16            | 32          | 7.5                | 0.8 | DTKR103M6R3ST    |
| 15000                        | 0.05                          | 2280                         | 18            | 36          | 7.5                | 0.8 | DTKR153M6R3ST    |

| <b>10 WVDC; 13 VDC Surge</b> |      |      |     |      |     |     |               |
|------------------------------|------|------|-----|------|-----|-----|---------------|
| 47                           | 6.21 | 75   | 5   | 11   | 2   | 0.5 | DTKR470M010ST |
| 100                          | 2.92 | 110  | 5   | 11   | 2   | 0.5 | DTKR101M010ST |
| 220                          | 1.33 | 180  | 6.3 | 11   | 2.5 | 0.5 | DTKR221M010ST |
| 330                          | 0.88 | 255  | 8   | 11.5 | 3.5 | 0.6 | DTKR331M010ST |
| 470                          | 0.62 | 305  | 8   | 11.5 | 3.5 | 0.6 | DTKR471M010ST |
| 1000                         | 0.29 | 570  | 10  | 16   | 5   | 0.6 | DTKR102M010ST |
| 2200                         | 0.14 | 1010 | 13  | 21   | 5   | 0.6 | DTKR222M010ST |
| 3300                         | 0.1  | 1220 | 13  | 25   | 5   | 0.6 | DTKR332M010ST |
| 4700                         | 0.08 | 1410 | 16  | 25   | 7.5 | 0.8 | DTKR472M010ST |
| 6800                         | 0.07 | 1610 | 16  | 32   | 7.5 | 0.8 | DTKR682M010ST |
| 10000                        | 0.05 | 1980 | 18  | 36   | 7.5 | 0.8 | DTKR103M010ST |
| 15000                        | 0.04 | 3330 | 18  | 42   | 7.5 | 0.8 | DTKR153M010ST |

| <b>16 WVDC; 20 VDC Surge</b> |      |      |     |      |     |     |               |
|------------------------------|------|------|-----|------|-----|-----|---------------|
| 33                           | 7.24 | 70   | 5   | 11   | 2   | 0.5 | DTKR330M016ST |
| 47                           | 5.08 | 85   | 5   | 11   | 2   | 0.5 | DTKR470M016ST |
| 100                          | 2.39 | 135  | 6.3 | 11   | 2.5 | 0.5 | DTKR101M016ST |
| 220                          | 1.09 | 235  | 8   | 11.5 | 3.5 | 0.6 | DTKR221M016ST |
| 330                          | 0.72 | 285  | 8   | 11   | 3.5 | 0.6 | DTKR331M016ST |
| 470                          | 0.51 | 395  | 10  | 13   | 5   | 0.6 | DTKR471M016ST |
| 1000                         | 0.24 | 700  | 10  | 21   | 5   | 0.6 | DTKR102M016ST |
| 2200                         | 0.12 | 1150 | 13  | 21   | 5   | 0.6 | DTKR222M016ST |

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**Phone:** (519) 539-4891  
**Fax:** (519) 539-6684  
<http://www.duracap.com/>

| Cap<br>( $\mu$ F) | Max ESR<br>Ohms<br>120Hz 25°C | Max Ripple mA<br>120Hz 105°C | Size (Inches) |             |                    |     | Part Description |
|-------------------|-------------------------------|------------------------------|---------------|-------------|--------------------|-----|------------------|
|                   |                               |                              | D<br>Diameter | L<br>Length | S<br>Lead<br>Space | d   |                  |
| 3300              | 0.09                          | 1350                         | 13            | 26          | 5                  | 0.6 | DTKR332M016ST    |
| 4700              | 0.07                          | 1560                         | 16            | 32          | 7.5                | 0.8 | DTKR472M016ST    |
| 6800              | 0.06                          | 1790                         | 18            | 36          | 7.5                | 0.8 | DTKR682M016ST    |
| 10000             | 0.05                          | 2884                         | 18            | 42          | 7.5                | 0.8 | DTKR103M016ST    |

| <b>25 WVDC; 32 VDC Surge</b> |       |      |     |    |     |     |               |
|------------------------------|-------|------|-----|----|-----|-----|---------------|
| 10                           | 21.23 | 50   | 5   | 11 | 2   | 0.5 | DTKR100M025ST |
| 22                           | 9.65  | 60   | 5   | 11 | 2   | 0.5 | DTKR220M025ST |
| 33                           | 6.43  | 75   | 5   | 11 | 2   | 0.5 | DTKR330M025ST |
| 47                           | 4.52  | 90   | 5   | 11 | 2   | 0.5 | DTKR470M025ST |
| 100                          | 2.12  | 145  | 6.3 | 11 | 2.5 | 0.5 | DTKR101M025ST |
| 220                          | 0.97  | 250  | 8   | 11 | 3.5 | 0.6 | DTKR221M025ST |
| 330                          | 0.64  | 355  | 10  | 13 | 5   | 0.6 | DTKR331M025ST |
| 470                          | 0.45  | 470  | 10  | 16 | 5   | 0.6 | DTKR471M025ST |
| 1000                         | 0.21  | 855  | 13  | 21 | 5   | 0.6 | DTKR102M025ST |
| 2200                         | 0.11  | 1230 | 13  | 26 | 5   | 0.6 | DTKR222M025ST |
| 3300                         | 0.08  | 1450 | 16  | 32 | 7.5 | 0.8 | DTKR332M025ST |
| 4700                         | 0.07  | 1690 | 18  | 36 | 7.5 | 0.8 | DTKR472M025ST |
| 6800                         | 0.05  | 2856 | 18  | 42 | 7.5 | 0.8 | DTKR682M025ST |

| <b>35 WVDC; 44 VDC Surge</b> |      |      |     |      |     |     |               |
|------------------------------|------|------|-----|------|-----|-----|---------------|
| 22                           | 8.44 | 65   | 5   | 11   | 2   | 0.5 | DTKR220M035ST |
| 33                           | 5.63 | 85   | 5   | 11   | 2   | 0.5 | DTKR330M035ST |
| 47                           | 3.95 | 115  | 6.3 | 11   | 2.5 | 0.5 | DTKR470M035ST |
| 100                          | 1.86 | 190  | 8   | 11.5 | 3.5 | 0.6 | DTKR101M035ST |
| 220                          | 0.84 | 315  | 10  | 13   | 5   | 0.6 | DTKR221M035ST |
| 330                          | 0.56 | 440  | 10  | 16   | 5   | 0.6 | DTKR331M035ST |
| 470                          | 0.4  | 580  | 13  | 20   | 5   | 0.6 | DTKR471M035ST |
| 1000                         | 0.19 | 995  | 13  | 21   | 5   | 0.6 | DTKR102M035ST |
| 2200                         | 0.1  | 1450 | 16  | 32   | 7.5 | 0.8 | DTKR222M035ST |
| 3300                         | 0.07 | 1660 | 18  | 36   | 7.5 | 0.8 | DTKR332M035ST |
| 4700                         | 0.06 | 2674 | 18  | 42   | 7.5 | 0.8 | DTKR472M035ST |

| <b>50 WVDC; 63 VDC Surge</b> |        |    |   |    |   |     |               |
|------------------------------|--------|----|---|----|---|-----|---------------|
| 0.47                         | 338.8  | 7  | 5 | 11 | 2 | 0.5 | DTKRR47M050ST |
| 1                            | 159.24 | 12 | 5 | 11 | 2 | 0.5 | DTKRO10M050ST |

| Cap<br>( $\mu$ F) | Max ESR<br>Ohms<br>120Hz 25°C | Max Ripple mA<br>120Hz 105°C | Size (Inches) |             |                    |     | Part Description |
|-------------------|-------------------------------|------------------------------|---------------|-------------|--------------------|-----|------------------|
|                   |                               |                              | D<br>Diameter | L<br>Length | S<br>Lead<br>Space | d   |                  |
| 2.2               | 72.38                         | 18                           | 5             | 11          | 2                  | 0.5 | DTKR2R2M050ST    |
| 3.3               | 48.25                         | 25                           | 5             | 11          | 2                  | 0.5 | DTKR3R3M050ST    |
| 4.7               | 33.88                         | 30                           | 5             | 11          | 2                  | 0.5 | DTKR4R7M050ST    |
| 10                | 15.92                         | 50                           | 5             | 11          | 2                  | 0.5 | DTKR100M050ST    |
| 22                | 7.24                          | 75                           | 5             | 11          | 2                  | 0.5 | DTKR220M050ST    |
| 33                | 4.83                          | 105                          | 6.3           | 11          | 2.5                | 0.5 | DTKR330M050ST    |
| 47                | 3.39                          | 125                          | 6.3           | 11.5        | 2.5                | 0.5 | DTKR470M050ST    |
| 100               | 1.59                          | 210                          | 8             | 11          | 3.5                | 0.6 | DTKR101M050ST    |
| 220               | 0.72                          | 400                          | 10            | 16          | 5                  | 0.6 | DTKR221M050ST    |
| 330               | 0.48                          | 535                          | 10            | 21          | 5                  | 0.6 | DTKR331M050ST    |
| 470               | 0.34                          | 730                          | 13            | 21          | 5                  | 0.6 | DTKR471M050ST    |
| 1000              | 0.16                          | 1110                         | 16            | 25          | 7.5                | 0.8 | DTKR102M050ST    |
| 2200              | 0.08                          | 1530                         | 18            | 36          | 7.5                | 0.8 | DTKR222M050ST    |
| 3300              | 0.47                          | 2478                         | 18            | 42          | 7.5                | 0.8 | DTKR332M050ST    |

| <b>63 WVDC; 79 VDC Surge</b> |       |      |     |    |     |     |               |
|------------------------------|-------|------|-----|----|-----|-----|---------------|
| 4.7                          | 28.23 | 34   | 5   | 11 | 2   | 0.5 | DTKR4R7M063ST |
| 10                           | 13.27 | 55   | 5   | 11 | 2   | 0.5 | DTKR100M063ST |
| 22                           | 6.03  | 90   | 6.3 | 11 | 2.5 | 0.5 | DTKR220M063ST |
| 33                           | 4.02  | 110  | 6.3 | 11 | 2.5 | 0.5 | DTKR330M063ST |
| 47                           | 2.82  | 155  | 8   | 11 | 3.5 | 0.6 | DTKR470M063ST |
| 100                          | 1.33  | 260  | 10  | 13 | 5   | 0.6 | DTKR101M063ST |
| 220                          | 0.6   | 460  | 10  | 21 | 5   | 0.6 | DTKR221M063ST |
| 330                          | 0.4   | 650  | 13  | 21 | 5   | 0.6 | DTKR331M063ST |
| 470                          | 0.28  | 800  | 13  | 26 | 5   | 0.6 | DTKR471M063ST |
| 1000                         | 0.13  | 1200 | 16  | 32 | 7.5 | 0.8 | DTKR102M063ST |

| <b>100 WVDC; 125 VDC Surge</b> |        |     |     |    |     |     |               |
|--------------------------------|--------|-----|-----|----|-----|-----|---------------|
| 0.47                           | 282.33 | 10  | 5   | 11 | 2   | 0.5 | DTKRR47M100ST |
| 1                              | 132.7  | 15  | 5   | 11 | 2   | 0.5 | DTKR010M100ST |
| 2.2                            | 60.32  | 22  | 5   | 11 | 2   | 0.5 | DTKR2R2M100ST |
| 3.3                            | 40.21  | 29  | 5   | 11 | 2   | 0.5 | DTKR3R3M100ST |
| 4.7                            | 28.23  | 37  | 5   | 11 | 2   | 0.5 | DTKR4R7M100ST |
| 10                             | 13.27  | 65  | 6.3 | 11 | 2.5 | 0.5 | DTKR100M100ST |
| 22                             | 6.03   | 115 | 8   | 11 | 3.5 | 0.6 | DTKR220M100ST |
| 33                             | 4.02   | 160 | 10  | 13 | 5   | 0.6 | DTKR330M100ST |





