

# Type 160 Metallized Polyester Radial Lead Capacitors

## Radial Box Metallized Polyester Capacitors



The Type 160 series radial lead metallized polyester box capacitors are constructed in rugged rectangular plastic cases with lead spacings that are standard in the electronics industry. All Type 160 capacitors are available in bulk with a .217"  $\pm$ .039" lead length, and they are good for general purpose applications such as bypass, decoupling, energy storage/discharge and arc suppression.

### Highlights

- RoHS compliant
- Rugged plastic case
- Case and epoxy fill meets UL94V0
- 10 mm through 27.5 mm lead spacings
- Non-inductively wound
- Non-polar
- Wire lead material, tinned copper clad steel

## Specifications

|                                      |  |
|--------------------------------------|--|
| <b>Capacitance Range:</b>            | 0.0022 $\mu$ F to 10.0 $\mu$ F   |
| <b>Voltage Range:</b>                | 63 Vdc to 1000 Vdc   |
| <b>Capacitance Tolerance:</b>        | $\pm$ 5%, $\pm$ 10%, $\pm$ 20%   |
| <b>Operating Temperature Range:</b>  | -55 $^{\circ}$ C to +105 $^{\circ}$ C (derating voltage to 1.25% per $^{\circ}$ C above 85 $^{\circ}$ C) |
| <b>Dielectric Withstand Voltage:</b> | 1.6 x rated voltage for 2 sec @ +25 $^{\circ}$ C $\pm$ 5 $^{\circ}$ C                                    |
| <b>Dissipation Factor (DF):</b>      | $\tan\delta \times 10^{-4}$ at 25 $^{\circ}$ C $\pm$ 5 $^{\circ}$ C                                      |

| kHz | C $\leq$ 1 $\mu$ F | C >1 $\mu$ F |
|-----|--------------------|--------------|
| 1   | $\leq$ 100         | $\leq$ 100   |
| 10  | $\geq$ 150         |              |

### Total Self Inductance (L):

| Pitch (mm)       | 10 | 15 | 22.5 | 27.5 |
|------------------|----|----|------|------|
| L (nH) $\approx$ | 9  | 10 | 18   | 18   |

**Long Term Stability (after two years):** Capacitance change  $\Delta C/C \leq \pm 3\%$  under standard environmental conditions

**Corona (Partial Discharge Inception Voltage):** 200 Vac for 100 Vdc, 200 Vdc  
250 Vac for 400 Vdc, 630 Vdc  
300 Vac for 1000 Vdc

### Maximum Pulse Rise Time (dv/dt):

| Vn      | Pitch (mm) |     |      |      |
|---------|------------|-----|------|------|
|         | 10         | 15  | 22.5 | 27.5 |
| 63      | 3          | 1.5 | 1    | 1    |
| 100/160 | 6/8        | 3   | 2    | 1    |
| 250     | 11         | 7   | 4    | 3    |
| 400     | 20         | 10  | 5.5  | 5    |
| 630     | 30         | 15  | 8    | 7    |
| 1000    | 60         | 25  | 15   | 10   |

If the working voltage (V) is less than the nominal voltage (Vn), the capacitor can work at higher dv/dt. In this case, the maximum value allowed is obtained by multiplying the above value with the ratio Vn/V.



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

# Type 160 Metallized Polyester Radial Lead Capacitors

## Capacitor Outline Drawing

## Test Method and Performance



**Note:** The lead diameter is a maximum dimension for lead spacing  $\leq 15$  mm and a nominal for lead spacing  $> 15$  mm

| Insulation Resistance              |  |
|------------------------------------|--|
| <b>Test Conditions</b>             |  |
| Temperature                        | 25 °C $\pm 5$ °C   |
| Voltage Charge Time                | 1 minute   |
| Voltage Charge                     | 50 Vdc for $V_n < 100$ Vdc<br>100 Vdc for $V_n \geq 100$ Vdc   |
| <b>Performance</b>                 |  |
| For $V_n > 100$ Vdc                | $\geq 30,000$ M $\Omega$ for $\leq 0.33\mu\text{F}$<br>$\geq 10,000$ M $\Omega \times \mu\text{F}$ for $C > 0.33\mu\text{F}$   |
| For $V_n \leq 100$ Vdc             | $\geq 10,000$ M $\Omega$ for $C \leq 0.1\mu\text{F}$<br>$\geq 1,000$ M $\Omega \times \mu\text{F}$ for $\leq 0.1\mu\text{F}$   |
| Damp Heat Test                     |  |
| <b>Test Conditions</b>             |  |
| Temperature                        | +40 °C   |
| Relative Humidity                  | 95%  |
| Test Duration                      | 21 days  |
| <b>Performance</b>                 |  |
| Capacitance Change $\Delta C/C$    | $\leq \pm 5\%$   |
| DF Change $\Delta \text{tg}\delta$ | $\leq 50 \times 10^{-4}$ at 1 kHz  |
| Insulation Resistance              | $\geq 50\%$ of limit value   |
| Life Test                          |  |
| <b>Test Conditions</b>             |  |
| Temperature                        | +85 °C   |
| Test Duration                      | 1000 hrs   |
| Voltage Applied                    | 1.25 x $V_n$   |
| <b>Performance</b>                 |  |
| Capacitance Change $\Delta C/C$    | $\leq \pm 5\%$   |
| DF Change $\Delta \text{tg}\delta$ | $\leq 30 \times 10^{-4}$ at 10 kHz for $C \leq 1.0 \mu\text{F}$<br>$\leq 20 \times 10^{-4}$ at 1 kHz for $C > 1.0 \mu\text{F}$ |
| Insulation Resistance              | $\geq 50\%$ of limit value   |

| Soldering                          |  |
|------------------------------------|--|
| <b>Test Conditions</b>             |  |
| Soldering Temperature              | 260 °C $\pm 5$ °C  |
| Soldering Duration                 | 10 sec $\pm 1$ sec   |
| <b>Performance</b>                 |  |
| Capacitance Change $\Delta C/C$    | $\leq \pm 2\%$   |
| DF Change $\Delta \text{tg}\delta$ | $\leq 30 \times 10^{-4}$ at 10 kHz for $C \leq 1.0 \mu\text{F}$<br>$\leq 20 \times 10^{-4}$ at 1 kHz for $C > 1.0 \mu\text{F}$ |

## Ratings

## RoHS Compliant

| Cap<br>( $\mu\text{F}$ ) | Catalog<br>Part Number | Inches |       |       |       |                 | Millimeters |      |      |      |                 |
|--------------------------|------------------------|--------|-------|-------|-------|-----------------|-------------|------|------|------|-----------------|
|                          |                        | L      | T     | H     | S     | $\varnothing d$ | L           | T    | H    | S    | $\varnothing d$ |
| <b>63 Vdc</b>            |                        |        |       |       |       |                 |             |      |      |      |                 |
| .22                      | 160224*63D-F           | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .27                      | 160274*63D-F           | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .33                      | 160334*63E-F           | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .39                      | 160394*63E-F           | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .47                      | 160474*63E-F           | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .56                      | 160564*63D-F           | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .68                      | 160684*63D-F           | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .68                      | 160684*63G-F           | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .82                      | 160824*63E-F           | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .82                      | 160824*63H-F           | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| 1.0                      | 160105*63H-F           | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| 1.5                      | 160155*63G-F           | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.5 | 15.0 | 0.8             |
| 2.2                      | 160225*63H-F           | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 14.0 | 15.0 | 0.8             |
| 3.3                      | 160335*63M-F           | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 18.0        | 10.0 | 16.0 | 15.0 | 0.8             |
| 4.7                      | 160475*63N-F           | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| 6.8                      | 160685*63O-F           | 1.043  | 0.394 | 0.748 | 0.886 | 0.031           | 26.5        | 10.0 | 19.0 | 22.5 | 0.8             |
| 10.0                     | 160106*63P-F           | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 26.5        | 13.0 | 23.0 | 22.5 | 0.8             |

\* Indicates capacitance tolerance: J =  $\pm 5\%$ , K =  $\pm 10\%$ , M =  $\pm 20\%$

# Type 160 Metallized Polyester Radial Lead Capacitors

**RoHS Compliant**

| Cap<br>( $\mu$ F) | Catalog<br>Part Number | Inches |       |       |       |                 | Millimeters |      |      |      |                 |
|-------------------|------------------------|--------|-------|-------|-------|-----------------|-------------|------|------|------|-----------------|
|                   |                        | L      | T     | H     | S     | $\varnothing$ d | L           | T    | H    | S    | $\varnothing$ d |
| <b>100 Vdc</b>    |                        |        |       |       |       |                 |             |      |      |      |                 |
| .10               | 160104*100C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .12               | 160124*100C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .15               | 160154*100C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .18               | 160184*100C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .22               | 160224*100D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .27               | 160274*100D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .33               | 160334*100E-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .33               | 160334*100F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .39               | 160394*100E-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .39               | 160394*100F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .47               | 160474*100E-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .47               | 160474*100F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .56               | 160564*100G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .68               | 160684*100G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .82               | 160824*100H-F          | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| 1.0               | 160105*100H-F          | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| 1.5               | 160155*100M-F          | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| 2.2               | 160225*100N-F          | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| 3.3               | 160335*100O-F          | 1.043  | 0.394 | 0.748 | 0.886 | 0.031           | 26.5        | 10.0 | 19.0 | 22.5 | 0.8             |
| 4.7               | 160475*100P-F          | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| 6.8               | 160685*100Q-F          | 1.260  | 0.512 | 0.886 | 1.083 | 0.031           | 32.0        | 13.0 | 22.5 | 27.5 | 0.8             |
| 10.0              | 160106*100S-F          | 1.457  | 0.709 | 1.299 | 1.083 | 0.031           | 37.0        | 18.0 | 33.0 | 27.5 | 0.8             |
| <b>160 Vdc</b>    |                        |        |       |       |       |                 |             |      |      |      |                 |
| .10               | 160104*160C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| <b>250 Vdc</b>    |                        |        |       |       |       |                 |             |      |      |      |                 |
| .033              | 160333*250C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .039              | 160393*250C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .047              | 160473*250C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .056              | 160563*250C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .068              | 160683*250C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .082              | 160823*250D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .10               | 160104*250D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .10               | 160104*250F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .12               | 160124*250D-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .12               | 160124*250F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .15               | 160154*250E-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .15               | 160154*250F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .18               | 160184*250E-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .18               | 160184*250F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .22               | 160224*250F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .27               | 160274*250G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .33               | 160334*250G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .39               | 160394*250H-F          | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| .47               | 160474*250H-F          | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| .47               | 160474*250L-F          | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .56               | 160564*250I-F          | 0.709  | 0.335 | 0.571 | 0.591 | 0.031           | 18.0        | 8.5  | 14.5 | 15.0 | 0.8             |
| .56               | 160564*250M-F          | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .68               | 160684*250I-F          | 0.709  | 0.335 | 0.571 | 0.591 | 0.031           | 18.0        | 8.5  | 14.5 | 15.0 | 0.8             |
| .68               | 160684*250M-F          | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .82               | 160824*250M-F          | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |

\* Indicates capacitance tolerance: J =  $\pm 5\%$ , K =  $\pm 10\%$ , M =  $\pm 20\%$

# Type 160 Metallized Polyester Radial Lead Capacitors

**RoHS Compliant**

| Cap<br>( $\mu$ F) | Catalog<br>Part Number | Inches |       |       |       |                 | Millimeters |      |      |      |                 |
|-------------------|------------------------|--------|-------|-------|-------|-----------------|-------------|------|------|------|-----------------|
|                   |                        | L      | T     | H     | S     | $\varnothing$ d | L           | T    | H    | S    | $\varnothing$ d |
| <b>250Vdc</b>     |                        |        |       |       |       |                 |             |      |      |      |                 |
| 1.0               | 160105*250N-F          | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| 1.5               | 160155*250O-F          | 1.043  | 0.394 | 0.748 | 0.886 | 0.031           | 26.5        | 10.0 | 19.0 | 22.5 | 0.8             |
| 2.2               | 160225*250P-F          | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| 3.3               | 160335*250Q-F          | 1.260  | 0.512 | 0.886 | 1.083 | 0.031           | 32.0        | 13.0 | 22.5 | 27.5 | 0.8             |
| 4.7               | 160475*250R-F          | 1.260  | 0.591 | 1.181 | 1.083 | 0.031           | 32.0        | 15.0 | 30.0 | 27.5 | 0.8             |
| 6.8               | 160685*250S-F          | 1.457  | 0.709 | 1.299 | 1.083 | 0.031           | 37.0        | 18.0 | 33.0 | 27.5 | 0.8             |
| <b>400Vdc</b>     |                        |        |       |       |       |                 |             |      |      |      |                 |
| .012              | 160123*400C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .015              | 160153*400C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .018              | 160183*400C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .022              | 160223*400C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .027              | 160273*400C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .033              | 160333*400D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .039              | 160393*400D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .047              | 160473*400E-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .047              | 160473*400F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .056              | 160563*400F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .068              | 160683*400F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .082              | 160823*400F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .10               | 160104*400G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .12               | 160124*400G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .15               | 160154*400H-F          | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| .15               | 160154*400L-F          | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .18               | 160184*400L-F          | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .22               | 160224*400L-F          | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .27               | 160274*400M-F          | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .33               | 160334*400M-F          | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .39               | 160394*400N-F          | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| .47               | 160474*400N-F          | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| .56               | 160564*400O-F          | 1.043  | 0.394 | 0.748 | 0.886 | 0.031           | 26.5        | 10.0 | 19.0 | 22.5 | 0.8             |
| .68               | 160684*400P-F          | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| .82               | 160824*400P-F          | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| 1.0               | 160105*400P-F          | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| 1.0               | 160105*400Q-F          | 1.260  | 0.512 | 0.886 | 1.083 | 0.031           | 32.0        | 13.0 | 22.5 | 27.5 | 0.8             |
| <b>630Vdc</b>     |                        |        |       |       |       |                 |             |      |      |      |                 |
| .0039             | 160392*630C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .0047             | 160472*630C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .0056             | 160562*630C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .0068             | 160682*630C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .0082             | 160822*630C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .010              | 160103*630C-F          | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .012              | 160123*630D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .015              | 160153*630D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .018              | 160183*630D-F          | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .022              | 160223*630E-F          | 0.512  | 0.236 | 0.472 | 0.394 | 0.031           | 13.0        | 6.0  | 12.0 | 10.0 | 0.8             |
| .027              | 160273*630F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .033              | 160333*630F-F          | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .039              | 160393*630G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .047              | 160473*630G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .056              | 160563*630G-F          | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |

\* Indicates capacitance tolerance: J =  $\pm$ 5%, K =  $\pm$ 10%, M =  $\pm$ 20%

# Type 160 Metallized Polyester Radial Lead Capacitors

**RoHS Compliant**

| Cap<br>( $\mu$ F) | Catalog<br>Part Number | Inches |       |       |       |                 | Millimeters |      |      |      |                 |
|-------------------|------------------------|--------|-------|-------|-------|-----------------|-------------|------|------|------|-----------------|
|                   |                        | L      | T     | H     | S     | $\varnothing$ d | L           | T    | H    | S    | $\varnothing$ d |
| <b>630 Vdc</b>    |                        |        |       |       |       |                 |             |      |      |      |                 |
| .068              | 160683*630H-F          | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| .068              | 160683*630L-F          | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .082              | 160823*630L-F          | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .10               | 160104*630L-F          | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .12               | 160124*630M-F          | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .15               | 160154*630M-F          | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .18               | 160184*630N-F          | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| .22               | 160224*630N-F          | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| .27               | 160274*630Q-F          | 1.260  | 0.512 | 0.886 | 1.083 | 0.031           | 32.0        | 13.0 | 22.5 | 27.5 | 0.8             |
| .33               | 160334*630P-F          | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| .39               | 160394*630P-F          | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| .47               | 160474*630Q-F          | 1.260  | 0.512 | 0.886 | 1.083 | 0.031           | 32.0        | 13.0 | 22.5 | 27.5 | 0.8             |
| <b>1000 Vdc</b>   |                        |        |       |       |       |                 |             |      |      |      |                 |
| .0022             | 160222*1000C-F         | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .0027             | 160272*1000C-F         | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .0033             | 160332*1000C-F         | 0.512  | 0.157 | 0.374 | 0.394 | 0.031           | 13.0        | 4.0  | 9.5  | 10.0 | 0.8             |
| .0039             | 160392*1000D-F         | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .0047             | 160472*1000D-F         | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .0056             | 160562*1000D-F         | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .0068             | 160682*1000D-F         | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .0082             | 160822*1000D-F         | 0.512  | 0.197 | 0.433 | 0.394 | 0.031           | 13.0        | 5.0  | 11.0 | 10.0 | 0.8             |
| .010              | 160103*1000F-F         | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .012              | 160123*1000F-F         | 0.709  | 0.197 | 0.433 | 0.591 | 0.031           | 18.0        | 5.0  | 11.0 | 15.0 | 0.8             |
| .015              | 160153*1000F-F         | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .018              | 160183*1000G-F         | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .022              | 160223*1000G-F         | 0.709  | 0.236 | 0.472 | 0.591 | 0.031           | 18.0        | 6.0  | 12.0 | 15.0 | 0.8             |
| .027              | 160273*1000H-F         | 0.709  | 0.295 | 0.531 | 0.591 | 0.031           | 18.0        | 7.5  | 13.5 | 15.0 | 0.8             |
| .033              | 160333*1000L-F         | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .039              | 160393*1000L-F         | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .047              | 160473*1000L-F         | 1.043  | 0.236 | 0.591 | 0.886 | 0.031           | 26.5        | 6.0  | 15.0 | 22.5 | 0.8             |
| .056              | 160563*1000M-F         | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .068              | 160683*1000M-F         | 1.043  | 0.276 | 0.650 | 0.886 | 0.031           | 26.5        | 7.0  | 16.5 | 22.5 | 0.8             |
| .082              | 160823*1000N-F         | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| .10               | 160104*1000N-F         | 1.043  | 0.335 | 0.669 | 0.886 | 0.031           | 26.5        | 8.5  | 17.0 | 22.5 | 0.8             |
| .12               | 160124*1000O-F         | 1.043  | 0.394 | 0.748 | 0.886 | 0.031           | 26.5        | 10.0 | 19.0 | 22.5 | 0.8             |
| .15               | 160154*1000P-F         | 1.260  | 0.433 | 0.787 | 1.083 | 0.031           | 32.0        | 11.0 | 20.0 | 27.5 | 0.8             |
| .18               | 160184*1000Q-F         | 1.260  | 0.512 | 0.886 | 1.083 | 0.031           | 32.0        | 13.0 | 22.5 | 27.5 | 0.8             |
| .22               | 160224*1000Q-F         | 1.260  | 0.512 | 0.886 | 1.083 | 0.031           | 32.0        | 13.0 | 22.5 | 27.5 | 0.8             |

\* Indicates capacitance tolerance: J =  $\pm 5\%$ , K =  $\pm 10\%$ , M =  $\pm 20\%$

## Part Numbering System

|               |                     |                  |                 |                  |                       |
|---------------|---------------------|------------------|-----------------|------------------|-----------------------|
| <b>160</b>    | <b>104</b>          | <b>K</b>         | <b>100</b>      | <b>C</b>         | <b>-F</b>             |
|               |                     |                  |                 |                  |                       |
| <b>Series</b> | <b>Capacitance</b>  | <b>Tolerance</b> | <b>Voltage</b>  | <b>Case Code</b> | <b>ROHS Compliant</b> |
| 160           | 392 = .0039 $\mu$ F | J = $\pm 5\%$    | 100 = 100 Vdc   | C                |                       |
|               | 103 = .01 $\mu$ F   | K = $\pm 10\%$   | 250 = 250 Vdc   | D                |                       |
|               | 104 = .1 $\mu$ F    | M = $\pm 20\%$   | 630 = 630 Vdc   | E                |                       |
|               | 105 = 1.0 $\mu$ F   |                  | 1000 = 1000 Vdc | F                |                       |
|               |                     |                  |                 | etc.             |                       |



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.