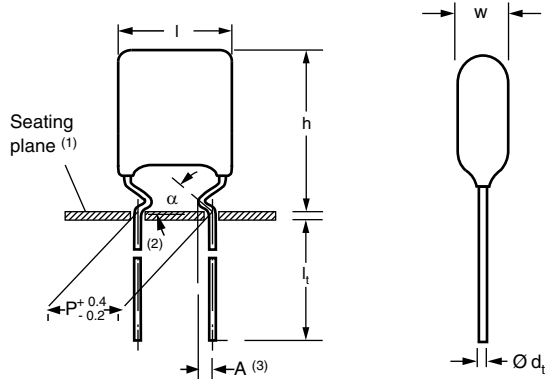
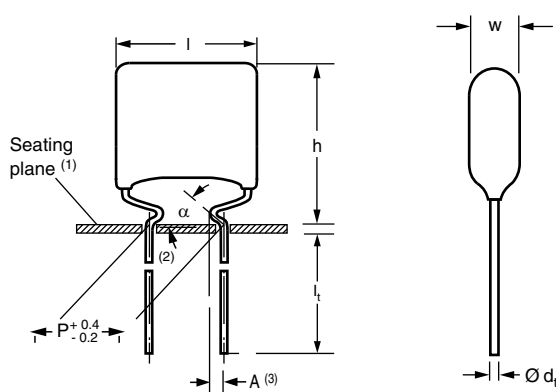


## DC Film Capacitors MKT Radial Lacquered Type

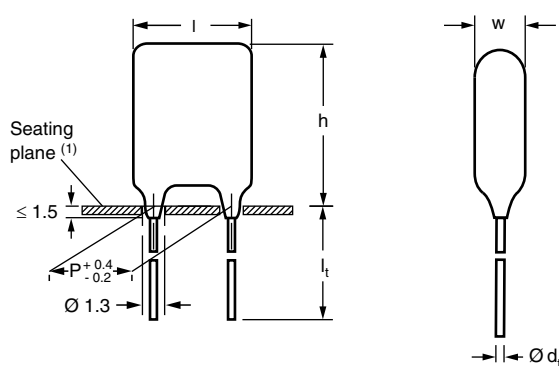
**366 Kinked Leads**



**365 Bent Back Leads**



**367 Straight Leads**



**Notes**

- (1) Hole  $\varnothing$  1.0 for  $d_t = 0.5$  mm
- (2)  $0 \le \alpha < 50^\circ$
- (3)  $A = 1.7$  mm  $\pm 0.3$  mm

**CONSTRUCTION**

Mono construction

**FEATURES**

- Available taped and loose in box
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**APPLICATIONS**

Blocking and coupling, bypass and energy reservoir.

**REFERENCE STANDARDS**

IEC 60384-2

**MARKING**

C-value; rated voltage; tolerance

**DIELECTRIC**

Polyester film

**ELECTRODES**

Metallized

**RATED (DC) VOLTAGE**

63 V<sub>DC</sub>, 100 V<sub>DC</sub>, 250 V<sub>DC</sub>, 400 V<sub>DC</sub>

**RATED (AC) VOLTAGE**

40 V<sub>AC</sub>, 63 V<sub>AC</sub>, 160 V<sub>AC</sub>, 220 V<sub>AC</sub>

**COATING ENCAPSULATION**

Flame retardant epoxy material (UL-class 94 V-0)

**CLIMATIC TESTING CLASS ACCORDING TO IEC 60068-1**

55/105/56

**RATED TEMPERATURE**

85 °C

**CAPACITANCE RANGE (E12 SERIES)**

- 365: 0.01  $\mu$ F to 1.0  $\mu$ F
- 366: 0.0033  $\mu$ F to 1.0  $\mu$ F
- 367: 0.0033  $\mu$ F to 1.0  $\mu$ F

**CAPACITANCE TOLERANCE**

$\pm 10$  %,  $\pm 5$  %

**LEADS**

Tinned wire

**MAXIMUM APPLICATION TEMPERATURE**

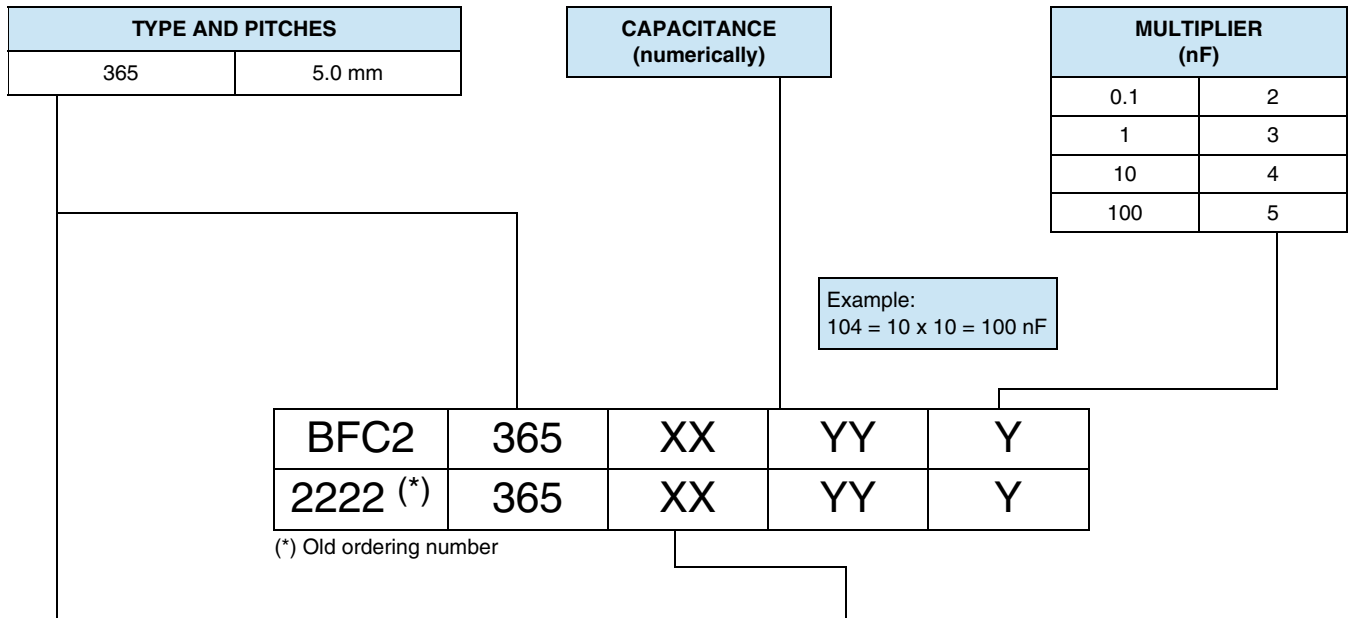
105 °C

**DETAIL SPECIFICATION**

For more detailed data and test requirements contact: [dc-film@vishay.com](mailto:dc-film@vishay.com)



**COMPOSITION OF CATALOG NUMBER: 365**



| TYPE | PACKAGING                    | LEAD CONFIGURATION  | PREFERRED TYPES  |      |       |       |       |
|------|------------------------------|---|--|------|-------|-------|-------|
|      |                              |   | C-TOL.   | 63 V | 100 V | 250 V | 400 V |
| 365  | Ammopack                     | Bent back leads;<br>H = 16.0 mm; P <sub>0</sub> = 12.7 mm | ± 10 %   | 15   | 25    | 45    | 55    |
|      |                              |   | ± 5 %  | 16   | 26    | 46    | 56    |
|      |                              |   | Dimensions of these code numbers stay between brackets |      |       |       |       |
|      | Taped on reel <sup>(1)</sup> | Bent back leads;<br>H = 16.0 mm; P <sub>0</sub> = 12.7 mm | ± 10 %   | 11   | 21    | 41    | 51    |
|      |                              |   | ± 5 %  | 12   | 22    | 42    | 52    |
|      |                              |   | Dimensions of these code numbers stay between brackets |      |       |       |       |

**Note**

- For detailed tape specifications refer to packaging information: [www.vishay.com/doc?28139](http://www.vishay.com/doc?28139)

**SPECIFIC REFERENCE DATA: 365**

| DESCRIPTION  | VALUE                   |                          |                          |                     |
|--|-------------------------|--------------------------|--------------------------|---------------------|
|  | at 1 kHz                | at 10 kHz                | at 100 kHz               |                     |
| Tangent of loss angle:   |                         |                          |                          |                     |
| C ≤ 0.47 μF  | ≤ 75 x 10 <sup>-4</sup> | ≤ 130 x 10 <sup>-4</sup> | ≤ 225 x 10 <sup>-4</sup> |                     |
| C > 0.47 μF  | ≤ 75 x 10 <sup>-4</sup> | ≤ 130 x 10 <sup>-4</sup> | -                        |                     |
| Rated voltage pulse slope (dU/dt) <sub>R</sub> at  | 63 V <sub>DC</sub>      | 100 V <sub>DC</sub>      | 250 V <sub>DC</sub>      | 400 V <sub>DC</sub> |
|  | 110 V/μs                | 110 V/μs                 | 130 V/μs                 | 170 V/μs            |
| R between leads, for C ≤ 0.33 μF<br>at 10 V; 1 min<br>at 100 V; 1 min                      | > 15 000 MΩ             | > 15 000 MΩ              | > 30 000 MΩ              | > 30 000 MΩ         |
| RC between leads, for C > 0.33 μF at 10 V; 1 min   | > 5000 s                |                          | -                        |                     |
| R between interconnecting leads and casing, 100 V; 1 min                                   | > 30 000 MΩ             |                          |                          |                     |
| Withstanding (DC) voltage (cut off current 10 mA) <sup>(1)</sup> ;<br>rise time ≤ 1000 V/s | 100 V; 1 min            | 160 V; 1 min             | 400 V; 1 min             | 640 V; 1 min        |
| Maximum application temperature  | 105 °C                  |                          |                          |                     |

**Note**

- <sup>(1)</sup> See "Voltage Proof Test for Metallized Film Capacitors": [www.vishay.com/doc?28169](http://www.vishay.com/doc?28169)



$U_{RDC} = 63\text{ V}$ ;  $U_{RAC} = 40\text{ V}$  (bent back leads)

| C<br>( $\mu\text{F}$ )  | DIMENSIONS<br>$w_{max.} \times h_{max.} \times l_{max.}$<br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 365 XXYYY AND PACKAGING |                    |                     |                    | C-VALUE<br>..YYY |
|---|--|----------------------------|---|--------------------|---------------------|--------------------|------------------|
|   |  |                            | AMMOPACK                                    |                    | REEL                |                    |                  |
|   |  |                            | H = 16.0 mm                                 |                    | H = 16.0 mm         |                    |                  |
|   |  |                            | C-TOL. = $\pm 10\%$                         | C-TOL. = $\pm 5\%$ | C-TOL. = $\pm 10\%$ | C-TOL. = $\pm 5\%$ |                  |
|   |  |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)        | XX<br>(SPQ)         | XX<br>(SPQ)        |                  |
| <b>PITCH = 5.0 mm + 0.4 mm / - 0.2 mm; <math>d_t = 0.60\text{ mm} \pm 0.06\text{ mm}</math></b> |  |                            |   |                    |                     |                    |                  |
| 0.12  | 4.0 x 13.5 x 10.0  | 0.35                       | 15...                                       | 16...              | 11...               | 12...              | 124              |
| 0.15  |  |                            | (1500)                                      | (1500)             | (1500)              | (1500)             | 154              |
| 0.18  |  |                            |   |                    |                     |                    | 184              |
| 0.22  |  |                            |   |                    |                     |                    | 224              |
| 0.27  | 4.5 x 14.0 x 10.0  | 0.39                       | 15...<br>(1000)                             | 16...<br>(1000)    | 11...<br>(1000)     | 12...<br>(1000)    | 274              |
| 0.33  | 5.0 x 14.5 x 10.0  | 0.45                       | 15...<br>(1500)                             | 16...<br>(1000)    | 11...<br>(1000)     | 12...<br>(1000)    | 334              |
| 0.39  |  |                            |   |                    |                     |                    | 394              |
| 0.47  | 5.5 x 15.0 x 10.0  | 0.55                       | 15...<br>(1000)                             | 16...<br>(1000)    | 11...<br>(1000)     | 12...<br>(1000)    | 474              |
| 0.56  |  |                            |   |                    |                     |                    | 564              |
| 0.68  |  |                            |   |                    |                     |                    | 684              |
| 0.82  |  |                            |   |                    |                     |                    | 824              |
| 1.0   |  |                            |   |                    |                     |                    | 105              |

**Notes**

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only

$U_{RDC} = 100\text{ V}$ ;  $U_{RAC} = 63\text{ V}$  (bent back leads)

| C<br>( $\mu\text{F}$ )  | DIMENSIONS<br>$w_{max.} \times h_{max.} \times l_{max.}$<br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 365 XXYYY AND PACKAGING |                    |                     |                    | C-VALUE<br>..YYY |
|---|--|----------------------------|---|--------------------|---------------------|--------------------|------------------|
|   |  |                            | AMMOPACK                                    |                    | REEL                |                    |                  |
|   |  |                            | H = 16.0 mm                                 |                    | H = 16.0 mm         |                    |                  |
|   |  |                            | C-TOL. = $\pm 10\%$                         | C-TOL. = $\pm 5\%$ | C-TOL. = $\pm 10\%$ | C-TOL. = $\pm 5\%$ |                  |
|   |  |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)        | XX<br>(SPQ)         | XX<br>(SPQ)        |                  |
| <b>Pitch = 5.0 mm + 0.4 mm / - 0.2 mm; <math>d_t = 0.60\text{ mm} \pm 0.06\text{ mm}</math></b> |  |                            |   |                    |                     |                    |                  |
| 0.039   | 4.0 x 13.5 x 10.0  | 0.35                       | 25...<br>(1500)                             | 26...<br>(1500)    | 21...<br>(1500)     | 22...<br>(1500)    | 393              |
| 0.047   |  |                            |   |                    |                     |                    | 473              |
| 0.056   |  |                            |   |                    |                     |                    | 563              |
| 0.068   |  |                            |   |                    |                     |                    | 683              |
| 0.082   |  |                            |   |                    |                     |                    | 823              |
| 0.10  |  |                            |   |                    |                     |                    | 104              |
| 0.12  | 4.5 x 14.0 x 10.5  | 0.40                       | 25...<br>(1000)                             | 26...<br>(1000)    | 21...<br>(1000)     | 22...<br>(1000)    | 124              |
| 0.15  | 5.0 x 14.5 x 10.5  | 0.45                       | 25...<br>(1000)                             | 26...<br>(1000)    | 21...<br>(1000)     | 22...<br>(1000)    | 154              |
| 0.18  |  |                            |   |                    |                     |                    | 184              |
| 0.22  | 5.5 x 15.0 x 10.5  | 0.57                       | 25...<br>(1000)                             | 26...<br>(1000)    | 21...<br>(1000)     | 22...<br>(1000)    | 224              |
| 0.27  | 6.0 x 15.5 x 10.5  | 0.60                       | 25...<br>(1000)                             | 26...<br>(1000)    | 21...<br>(1000)     | 22...<br>(1000)    | 274              |
| 0.33  |  |                            |   |                    |                     |                    | 334              |
| 0.39  |  |                            |   |                    |                     |                    | 394              |
| 0.47  |  |                            |   |                    |                     |                    | 474              |

**Notes**

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only



$U_{RDC} = 250\text{ V}$ ;  $U_{RAC} = 160\text{ V}$  (bent back leads)

| C<br>( $\mu\text{F}$ )  | DIMENSIONS<br>$w_{\text{max.}} \times h_{\text{max.}} \times l_{\text{max.}}$<br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 365 XXYYY AND PACKAGING |                    |                     |                    | C-VALUE<br><br>..YYY |
|---|---|----------------------------|---|--------------------|---------------------|--------------------|----------------------|
|   |   |                            | AMMOPACK                                    |                    | REEL                |                    |                      |
|   |   |                            | H = 16.0 mm                                 |                    | H = 16.0 mm         |                    |                      |
|   |   |                            | C-TOL. = $\pm 10\%$                         | C-TOL. = $\pm 5\%$ | C-TOL. = $\pm 10\%$ | C-TOL. = $\pm 5\%$ |                      |
|   |   |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)        | XX<br>(SPQ)         | XX<br>(SPQ)        |                      |
| Pitch = 5.0 mm + 0.4 mm / - 0.2 mm; $d_t = 0.60\text{ mm} \pm 0.06\text{ mm}$ |   |                            |   |                    |                     |                    |                      |
| 0.018   | 4.0 x 13.5 x 10.0   | 0.35                       |   |                    |                     |                    | 183                  |
| 0.022   |   |                            |   |                    |                     |                    | 223                  |
| 0.027   |   |                            |   |                    |                     |                    | 273                  |
| 0.033   |   |                            | 45...<br>(1500)                             | 46...<br>(1500)    | 41...<br>(1500)     | 42...<br>(1500)    | 333                  |
| 0.039   |   |                            |   |                    |                     |                    | 393                  |
| 0.047   |   |                            |   |                    |                     |                    | 473                  |
| 0.056   |   |                            |   |                    | 563                 |                    |                      |
| 0.068   | 4.5 x 14.0 x 10.0   | 0.39                       | 45...<br>(1250)                             | 46...<br>(1250)    | 41...<br>(1000)     | 42...<br>(1000)    | 683                  |
| 0.082   | 4.5 x 13.0 x 10.0   | 0.38                       | 45...<br>(1250)                             | 46...<br>(1250)    | 41...<br>(1250)     | 42...<br>(1250)    | 823                  |
| 0.10  | 5.0 x 13.5 x 10.0   | 0.40                       | 45...<br>(1000)                             | 46...<br>(1000)    | 41...<br>(1250)     | 42...<br>(1250)    | 104                  |
| 0.12  | 5.5 x 14.0 x 10.0   | 0.50                       | 45...<br>(1000)                             | 46...<br>(1000)    | 41...<br>(1000)     | 42...<br>(1000)    | 124                  |
| 0.15  | 5.5 x 15.5 x 10.0   | 0.58                       | 45...<br>(1000)                             | 46...<br>(1000)    | 41...<br>(1000)     | 42...<br>(1000)    | 154                  |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only

$U_{RDC} = 400\text{ V}$ ;  $U_{RAC} = 220\text{ V}$  (bent back leads)

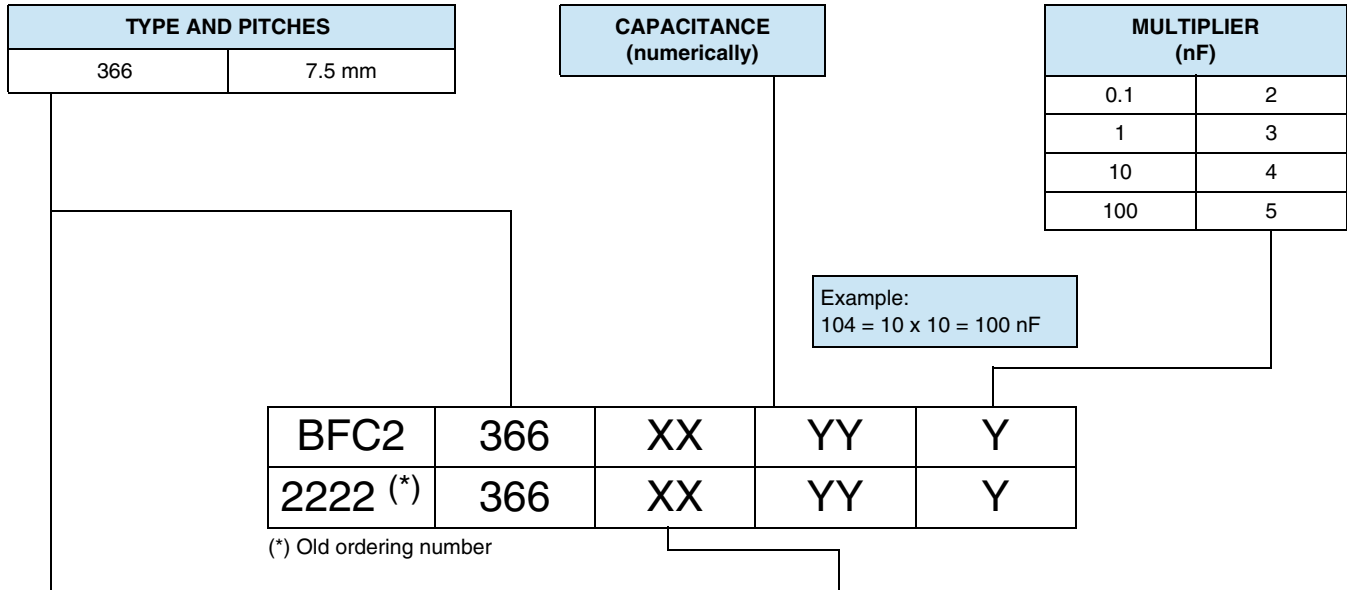
| C<br>( $\mu\text{F}$ )  | DIMENSIONS<br>$w_{\text{max.}} \times h_{\text{max.}} \times l_{\text{max.}}$<br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 365 XXYYY AND PACKAGING |                    |                     |                    | C-VALUE<br><br>..YYY |
|---|---|----------------------------|---|--------------------|---------------------|--------------------|----------------------|
|   |   |                            | AMMOPACK                                    |                    | REEL                |                    |                      |
|   |   |                            | H = 16.0 mm                                 |                    | H = 16.0 mm         |                    |                      |
|   |   |                            | C-TOL. = $\pm 10\%$                         | C-TOL. = $\pm 5\%$ | C-TOL. = $\pm 10\%$ | C-TOL. = $\pm 5\%$ |                      |
|   |   |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)        | XX<br>(SPQ)         | XX<br>(SPQ)        |                      |
| Pitch = 5.0 mm + 0.4 mm / - 0.2 mm; $d_t = 0.60\text{ mm} \pm 0.06\text{ mm}$ |   |                            |   |                    |                     |                    |                      |
| 0.0033  | 4.0 x 13.5 x 10.0   | 0.35                       |   |                    |                     |                    | 332                  |
| 0.0039  |   |                            |   |                    |                     |                    | 392                  |
| 0.0047  |   |                            |   |                    |                     |                    | 472                  |
| 0.0056  |   |                            |   |                    |                     |                    | 562                  |
| 0.0068  |   |                            | 55...<br>(1500)                             | 56...<br>(1500)    | 51...<br>(1500)     | 52...<br>(1500)    | 682                  |
| 0.0082  |   |                            |   |                    |                     |                    | 822                  |
| 0.010   |   |                            |   |                    |                     |                    | 103                  |
| 0.012   |   |                            |   |                    |                     |                    | 123                  |
| 0.015   |   |                            |   |                    |                     |                    | 153                  |
| 0.018   |   |                            | 4.5 x 13.0 x 10.0                           | 0.38               | 55...<br>(1250)     | 56...<br>(1250)    | 51...<br>(1250)      |
| 0.022   | 5.0 x 13.5 x 10.0   | 0.40                       | 55...<br>(1000)                             | 56...<br>(1000)    | 51...<br>(1250)     | 52...<br>(1250)    | 223                  |
| 0.027   | 4.0 x 12.5 x 10.0   | 0.35                       | 55...<br>(1500)                             | 56...<br>(1500)    | 51...<br>(1500)     | 52...<br>(1500)    | 273                  |
| 0.033   | 4.5 x 13.0 x 10.0   | 0.38                       | 55...<br>(1200)                             | 56...<br>(1250)    | 51...<br>(1250)     | 52...<br>(1250)    | 333                  |
| 0.039   | 5.0 x 13.5 x 10.0   | 0.40                       | 55...<br>(1000)                             | 56...<br>(1000)    | 51...<br>(1250)     | 52...<br>(1250)    | 393                  |
| 0.047   |   |                            |   |                    |                     |                    | 473                  |
| 0.056   | 5.5 x 14.0 x 10.0   | 0.50                       | 55...<br>(1000)                             | 56...<br>(1000)    | 51...<br>(1000)     | 52...<br>(1000)    | 563                  |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only



**COMPOSITION OF CATALOG NUMBER: 366**



| TYPE           | PACKAGING    | LEAD CONFIGURATION                               | PREFERRED TYPES |      |       |       |       |
|----------------|--------------|--|-----------------|------|-------|-------|-------|
|                |              |  | C-TOL.          | 63 V | 100 V | 250 V | 400 V |
| Pitch = 7.5 mm |              |  |                 |      |       |       |       |
| 366            | Loose in box | Kinked; Lead length<br>4.0 + 1.0/- 0.5 mm        | ± 10 %          | 15   | 25    | 45    | 55    |
|                |              |  | ± 5 %           | 16   | 26    | 46    | 56    |
|                |              | Kinked;<br>Lead length 17.0 ± 4.0 mm             | ± 10 %          | 11   | 21    | 41    | 51    |
|                |              |  | ± 5 %           | 12   | 22    | 42    | 52    |
|                | Ammopack (1) | Kinked;<br>H = 16.0 mm; P <sub>0</sub> = 12.7 mm | ± 10 %          | 13   | 23    | 43    | 53    |
|                |              |  | ± 5 %           | 17   | 27    | 47    | 57    |

**Note**

- For detailed tape specifications refer to packaging information: [www.vishay.com/doc?28139](http://www.vishay.com/doc?28139)

**SPECIFIC REFERENCE DATA: 366**

| DESCRIPTION  | VALUE                   |                          |                          |                     |
|--|-------------------------|--------------------------|--------------------------|---------------------|
|  | at 1 kHz                | at 10 kHz                | at 100 kHz               |                     |
| Tangent of loss angle:   |                         |                          |                          |                     |
| C ≤ 0.47 μF  | ≤ 75 x 10 <sup>-4</sup> | ≤ 130 x 10 <sup>-4</sup> | ≤ 225 x 10 <sup>-4</sup> |                     |
| C > 0.47 μF  | ≤ 75 x 10 <sup>-4</sup> | ≤ 130 x 10 <sup>-4</sup> | -                        |                     |
| Rated voltage pulse slope (dU/dt) <sub>R</sub> at                              | 63 V <sub>DC</sub>      | 100 V <sub>DC</sub>      | 250 V <sub>DC</sub>      | 400 V <sub>DC</sub> |
|  | 110 V/μs                | 110 V/μs                 | 130 V/μs                 | 170 V/μs            |
| R between leads, for C ≤ 0.33 μF<br>at 10 V; 1 min<br>at 100 V; 1 min          | > 15 000 MΩ             | > 15 000 MΩ              | > 30 000 MΩ              | > 30 000 MΩ         |
| RC between leads, for C > 0.33 μF at 10 V; 1 min                               | > 5000 s                |                          | -                        |                     |
| R between interconnecting leads and casing, 100 V; 1 min                       | > 30 000 MΩ             |                          |                          |                     |
| Withstanding (DC) voltage (cut off current 10 mA) (1);<br>rise time ≤ 1000 V/s | 100 V; 1 min            | 160 V; 1 min             | 400 V; 1 min             | 640 V; 1 min        |
| Maximum application temperature  | 105 °C                  |                          |                          |                     |

**Note**

- (1) See "Voltage Proof Test for Metallized Film Capacitors": [www.vishay.com/doc?28169](http://www.vishay.com/doc?28169)



U<sub>RDC</sub> = 63 V; U<sub>RAC</sub> = 40 V

| C<br>(μF)  | DIMENSIONS<br>w <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub><br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 366 XXYYY AND PACKAGING |                   |                                   |                   |                    |                   | C-VALUE<br>..YYY         |
|--|---|----------------------------|---|-------------------|-----------------------------------|-------------------|--------------------|-------------------|--------------------------|
|  |   |                            | LOOSE IN BOX                                |                   |                                   |                   | AMMOPACK           |                   |                          |
|  |   |                            | l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm |                   | l <sub>t</sub> = 17.0 mm ± 4.0 mm |                   | H = 16.0 mm        |                   |                          |
|  |   |                            | C-TOL. =<br>± 10 %                          | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 %                | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 % | C-TOL. =<br>± 5 % |                          |
|  |   |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)       | XX<br>(SPQ)                       | XX<br>(SPQ)       | XX<br>(SPQ)        | XX<br>(SPQ)       |                          |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm |   |                            |   |                   |                                   |                   |                    |                   |                          |
| 0.12<br>0.15<br>0.18<br>0.22   | 4.0 x 12.0 x 10.0   | 0.30                       | 15...<br>(1000)                             | 16...<br>(1000)   | 11...<br>(1000)                   | 12...<br>(1000)   | 13...<br>(1500)    | 17...<br>(1500)   | 124<br>154<br>184<br>224 |
| 0.27   | 4.5 x 13.0 x 10.5   | 0.38                       | 15...<br>(1000)                             | 16...<br>(1000)   | 11...<br>(1000)                   | 12...<br>(1000)   | 13...<br>(1250)    | 17...<br>(1250)   | 274                      |
| 0.33<br>0.39   | 5.0 x 13.5 x 10.5   | 0.43                       | 15...<br>(1000)                             | 16...<br>(1000)   | 11...<br>(1000)                   | 12...<br>(1000)   | 13...<br>(1000)    | 17...<br>(1000)   | 334<br>394               |
| 0.47   | 5.5 x 14.0 x 10.5   | 0.53                       | 15...<br>(1000)                             | 16...<br>(1000)   | 11...<br>(1000)                   | 12...<br>(1000)   | 13...<br>(1000)    | 17...<br>(1000)   | 474                      |
| 0.56<br>0.68<br>0.82<br>1.0  | 5.5 x 14.5 x 10.5   | 0.54                       | 15...<br>(1000)                             | 16...<br>(1000)   | 11...<br>(1000)                   | 12...<br>(1000)   | 13...<br>(1000)    | 17...<br>(1000)   | 564<br>684<br>824<br>105 |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only

U<sub>RDC</sub> = 100 V; U<sub>RAC</sub> = 63 V

| C<br>(μF)  | DIMENSIONS<br>w <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub><br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 366 XXYYY AND PACKAGING |                   |                                   |                   |                    |                   | C-VALUE<br>..YYY                |
|--|---|----------------------------|---|-------------------|-----------------------------------|-------------------|--------------------|-------------------|---------------------------------|
|  |   |                            | LOOSE IN BOX                                |                   |                                   |                   | AMMOPACK           |                   |                                 |
|  |   |                            | l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm |                   | l <sub>t</sub> = 17.0 mm ± 4.0 mm |                   | H = 16.0 mm        |                   |                                 |
|  |   |                            | C-TOL. =<br>± 10 %                          | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 %                | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 % | C-TOL. =<br>± 5 % |                                 |
|  |   |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)       | XX<br>(SPQ)                       | XX<br>(SPQ)       | XX<br>(SPQ)        | XX<br>(SPQ)       |                                 |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm |   |                            |   |                   |                                   |                   |                    |                   |                                 |
| 0.039<br>0.047<br>0.056<br>0.068<br>0.082                              | 4.0 x 12.0 x 10.0   | 0.30                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1500)    | 27...<br>(1500)   | 393<br>473<br>563<br>683<br>823 |
| 0.10   | 4.0 x 13.0 x 10.0   | 0.26                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1500)    | 27...<br>(1500)   | 104                             |
| 0.12   | 4.5 x 13.0 x 10.5   | 0.38                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1250)    | 27...<br>(1250)   | 124                             |
| 0.15   | 5.0 x 13.0 x 15.0   | 0.40                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1000)    | 27...<br>(1000)   | 154                             |
| 0.18   | 5.0 x 13.5 x 10.5   | 0.43                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1000)    | 27...<br>(1000)   | 184                             |
| 0.22   | 5.5 x 13.5 x 10.5   | 0.50                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1000)    | 27...<br>(1000)   | 224                             |
| 0.27   | 6.0 x 14.5 x 10.5   | 0.55                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1000)    | 27...<br>(1000)   | 274                             |
| 0.33<br>0.39<br>0.47   | 6.0 x 15.0 x 10.5   | 0.58                       | 25...<br>(1000)                             | 26...<br>(1000)   | 21...<br>(1000)                   | 22...<br>(1000)   | 23...<br>(1000)    | 27...<br>(1000)   | 334<br>394<br>474               |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only



U<sub>RDC</sub> = 250 V; U<sub>RAC</sub> = 160 V

| C<br>(µF)  | DIMENSIONS<br>w <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub><br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 366 XXYYY AND PACKAGING |                   |                                   |                   |                    |                   | C-VALUE<br>..YYY                       |
|--|---|----------------------------|---|-------------------|-----------------------------------|-------------------|--------------------|-------------------|--|
|  |   |                            | LOOSE IN BOX                                |                   |                                   |                   | AMMOPACK           |                   |  |
|  |   |                            | l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm |                   | l <sub>t</sub> = 17.0 mm ± 4.0 mm |                   | H = 16.0 mm        |                   |  |
|  |   |                            | C-TOL. =<br>± 10 %                          | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 %                | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 % | C-TOL. =<br>± 5 % |  |
|  |   |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)       | XX<br>(SPQ)                       | XX<br>(SPQ)       | XX<br>(SPQ)        | XX<br>(SPQ)       |  |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm |   |                            |   |                   |                                   |                   |                    |                   |  |
| 0.018<br>0.022<br>0.027<br>0.033<br>0.039<br>0.047                     | 4.0 x 13.0 x 10.0   | 0.26                       | 45...<br>(1000)                             | 46...<br>(1000)   | 41...<br>(1000)                   | 42...<br>(1000)   | 43...<br>(1500)    | 47...<br>(1500)   | 183<br>223<br>273<br>333<br>393<br>473 |
| 0.056  | 4.0 x 14.0 x 10.0   | 0.35                       | 45...<br>(1000)                             | 46...<br>(1000)   | 41...<br>(1000)                   | 42...<br>(1000)   | 43...<br>(1500)    | 47...<br>(1500)   | 563                                    |
| 0.068  | 4.5 x 14.0 x 10.0   | 0.39                       | 45...<br>(1000)                             | 46...<br>(1000)   | 41...<br>(1000)                   | 42...<br>(1000)   | 43...<br>(1250)    | 47...<br>(1250)   | 683                                    |
| 0.082  | 4.5 x 13.0 x 10.0   | 0.38                       | 45...<br>(1000)                             | 46...<br>(1000)   | 41...<br>(1000)                   | 42...<br>(1000)   | 43...<br>(1250)    | 47...<br>(1250)   | 823                                    |
| 0.10   | 5.0 x 13.5 x 10.0   | 0.40                       | 45...<br>(1000)                             | 46...<br>(1000)   | 41...<br>(1000)                   | 42...<br>(1000)   | 43...<br>(1000)    | 47...<br>(1000)   | 104                                    |
| 0.12   | 5.5 x 14.0 x 10.0   | 0.50                       | 45...<br>(1000)                             | 46...<br>(1000)   | 41...<br>(1000)                   | 42...<br>(1000)   | 43...<br>(1000)    | 47...<br>(1000)   | 124                                    |
| 0.15   | 5.5 x 15.5 x 10.0   | 0.58                       | 45...<br>(1000)                             | 46...<br>(1000)   | 41...<br>(1000)                   | 42...<br>(1000)   | 43...<br>(1000)    | 47...<br>(1000)   | 154                                    |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only

U<sub>RDC</sub> = 400 V; U<sub>RAC</sub> = 220 V

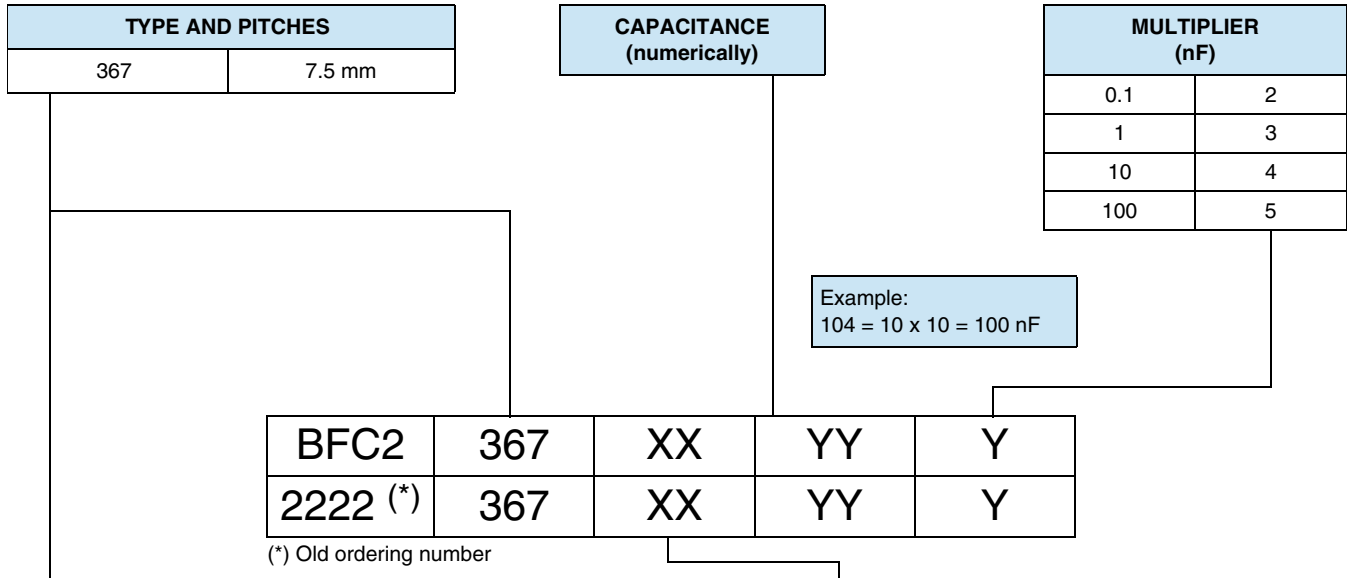
| C<br>(µF)  | DIMENSIONS<br>w <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub><br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 366 XXYYY AND PACKAGING |                   |                                   |                   |                    |                   | C-VALUE<br>..YYY                       |
|--|---|----------------------------|---|-------------------|-----------------------------------|-------------------|--------------------|-------------------|--|
|  |   |                            | LOOSE IN BOX                                |                   |                                   |                   | AMMOPACK           |                   |  |
|  |   |                            | l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm |                   | l <sub>t</sub> = 17.0 mm ± 4.0 mm |                   | H = 16.0 mm        |                   |  |
|  |   |                            | C-TOL. =<br>± 10 %                          | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 %                | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 % | C-TOL. =<br>± 5 % |  |
|  |   |                            | XX<br>(SPQ)                                 | XX<br>(SPQ)       | XX<br>(SPQ)                       | XX<br>(SPQ)       | XX<br>(SPQ)        | XX<br>(SPQ)       |  |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm |   |                            |   |                   |                                   |                   |                    |                   |  |
| 0.0033<br>0.0039<br>0.0047   | 4.0 x 12.0 x 10.0   | 0.30                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1500)    | 57...<br>(1500)   | 332<br>392<br>472                      |
| 0.0056<br>0.0068<br>0.0082<br>0.010<br>0.012<br>0.015                  | 4.0 x 13.0 x 10.0   | 0.26                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1500)    | 57...<br>(1500)   | 562<br>682<br>822<br>103<br>123<br>153 |
| 0.018  | 4.0 x 13.5 x 10.0   | 0.35                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1250)    | 57...<br>(1250)   | 183                                    |
| 0.022  | 5.0 x 14.0 x 10.0   | 0.45                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1000)    | 57...<br>(1000)   | 223                                    |
| 0.027  | 4.0 x 12.5 x 10.0   | 0.35                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1500)    | 57...<br>(1500)   | 273                                    |
| 0.033  | 4.5 x 13.0 x 10.0   | 0.38                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1250)    | 57...<br>(1250)   | 333                                    |
| 0.039<br>0.047   | 5.0 x 13.5 x 10.0   | 0.40                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1000)    | 57...<br>(1000)   | 393<br>473                             |
| 0.056  | 5.5 x 14.0 x 10.0   | 0.50                       | 55...<br>(1000)                             | 56...<br>(1000)   | 51...<br>(1000)                   | 52...<br>(1000)   | 53...<br>(1000)    | 57...<br>(1000)   | 563                                    |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only



**COMPOSITION OF CATALOG NUMBER: 367**



| TYPE                  | PACKAGING    | LEAD CONFIGURATION                                 | PREFERRED TYPES |      |       |       |       |
|-----------------------|--------------|--|-----------------|------|-------|-------|-------|
|                       |              |  | C-TOL.          | 63 V | 100 V | 250 V | 400 V |
| <b>Pitch = 7.5 mm</b> |              |  |                 |      |       |       |       |
| 367                   | Loose in box | Straight; Lead length<br>4.0 + 1.0/- 0.5 mm        | ± 10 %          | 15   | 25    | 45    | 55    |
|                       |              |  | ± 5 %           | 16   | 26    | 46    | 56    |
|                       |              | Straight;<br>Lead length 22.0 ± 4.0 mm             | ± 10 %          | 11   | 21    | 41    | 51    |
|                       |              |  | ± 5 %           | 12   | 22    | 42    | 52    |
|                       | Ammopack (1) | Straight;<br>H = 18.5 mm; P <sub>0</sub> = 12.7 mm | ± 10 %          | 13   | 23    | 43    | 53    |
|                       |              |  | ± 5 %           | 17   | 27    | 47    | 57    |

**Note**

- For detailed tape specifications refer to packaging information: [www.vishay.com/doc?28139](http://www.vishay.com/doc?28139)

**SPECIFIC REFERENCE DATA: 367**

| DESCRIPTION  | VALUE                   |                          |                          |                     |
|--|-------------------------|--------------------------|--------------------------|---------------------|
|  | at 1 kHz                | at 10 kHz                | at 100 kHz               |                     |
| Tangent of loss angle:   |                         |                          |                          |                     |
| C ≤ 0.47 μF  | ≤ 75 x 10 <sup>-4</sup> | ≤ 130 x 10 <sup>-4</sup> | ≤ 225 x 10 <sup>-4</sup> |                     |
| C > 0.47 μF  | ≤ 75 x 10 <sup>-4</sup> | ≤ 130 x 10 <sup>-4</sup> | -                        |                     |
| Rated voltage pulse slope (dU/dt) <sub>R</sub> at                              | 63 V <sub>DC</sub>      | 100 V <sub>DC</sub>      | 250 V <sub>DC</sub>      | 400 V <sub>DC</sub> |
|  | 110 V/μs                | 110 V/μs                 | 130 V/μs                 | 170 V/μs            |
| R between leads, for C ≤ 0.33 μF<br>at 10 V; 1 min<br>at 100 V; 1 min          | > 15 000 MΩ             | > 15 000 MΩ              | > 30 000 MΩ              | > 30 000 MΩ         |
| RC between leads, for C > 0.33 μF at 10 V; 1 min                               | > 5000 s                |                          | -                        |                     |
| R between interconnecting leads and casing, 100 V; 1 min                       | > 30 000 MΩ             |                          |                          |                     |
| Withstanding (DC) voltage (cut off current 10 mA) (1);<br>rise time ≤ 1000 V/s | 100 V; 1 min            | 160 V; 1 min             | 400 V; 1 min             | 640 V; 1 min        |
| Maximum application temperature  | 105 °C                  |                          |                          |                     |

**Note**

- (1) See "Voltage Proof Test for Metallized Film Capacitors": [www.vishay.com/doc?28169](http://www.vishay.com/doc?28169)





$U_{RDC} = 63 V$ ;  $U_{RAC} = 40 V$

| C<br>( $\mu F$ )  | DIMENSIONS<br>$w_{max.} \times h_{max.} \times l_{max.}$<br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 367 XXYYY AND PACKAGING                |                        |  |                        |                         |                        | C-VALUE<br><br>..YYY |
|---|--|----------------------------|--|------------------------|--|------------------------|-------------------------|------------------------|----------------------|
|   |  |                            | LOOSE IN BOX   |                        |  |                        | AMMOPACK                |                        |                      |
|   |  |                            | $l_t = 4.0 \text{ mm} + 1.0 \text{ mm} / - 0.5 \text{ mm}$ |                        | $l_t = 22.0 \text{ mm} \pm 4.0 \text{ mm}$ |                        | H = 18.5 mm             |                        |                      |
|   |  |                            | C-TOL. =<br>$\pm 10 \%$                                    | C-TOL. =<br>$\pm 5 \%$ | C-TOL. =<br>$\pm 10 \%$                    | C-TOL. =<br>$\pm 5 \%$ | C-TOL. =<br>$\pm 10 \%$ | C-TOL. =<br>$\pm 5 \%$ |                      |
| XX<br>(SPQ)   |  | XX<br>(SPQ)                |  | XX<br>(SPQ)            |  | XX<br>(SPQ)            |                         |                        |                      |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; $d_t = 0.60 \text{ mm} \pm 0.06 \text{ mm}$ |  |                            |  |                        |  |                        |                         |                        |                      |
| 0.12  | 4.0 x 9.5 x 10.0   | 0.23                       | 15...  | 16...                  | 11...                                      | 12...                  | 13...                   | 17...                  | 124                  |
| 0.15  |  |                            | (1000)   | (1000)                 | (1000)                                     | (1000)                 | (1500)                  | (1500)                 | 154                  |
| 0.18  |  |                            |  |                        |  |                        |                         |                        | 184                  |
| 0.22  |  |                            |  |                        |  |                        |                         |                        | 224                  |
| 0.27  | 4.5 x 10.0 x 10.5  | 0.37                       | 15...  | 16...                  | 11...                                      | 12...                  | 13...                   | 17...                  | 274                  |
| 0.33  | 5.0 x 10.5 x 10.5  | 0.39                       | 15...  | 16...                  | 11...                                      | 12...                  | 13...                   | 17...                  | 334                  |
| 0.39  |  |                            | (1000)   | (1000)                 | (1000)                                     | (1000)                 | (1000)                  | (1000)                 | 394                  |
| 0.47  | 5.5 x 11.0 x 10.5  | 0.44                       | 15...  | 16...                  | 11...                                      | 12...                  | 13...                   | 17...                  | 474                  |
| 0.56  | 5.5 x 12.0 x 10.5  | 0.46                       | 15...  | 16...                  | 11...                                      | 12...                  | 13...                   | 17...                  | 564                  |
| 0.68  |  |                            | (1000)   | (1000)                 | (1000)                                     | (1000)                 | (1000)                  | (1000)                 | 684                  |
| 0.82  |  |                            |  |                        |  |                        |                         |                        | 824                  |
| 1.0   |  |                            |  |                        |  |                        |                         |                        | 105                  |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only

$U_{RDC} = 100 V$ ;  $U_{RAC} = 63 V$

| C<br>( $\mu F$ )  | DIMENSIONS<br>$w_{max.} \times h_{max.} \times l_{max.}$<br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 367 XXYYY AND PACKAGING                |                        |  |                        |                         |                        | C-VALUE<br><br>..YYY |
|---|--|----------------------------|--|------------------------|--|------------------------|-------------------------|------------------------|----------------------|
|   |  |                            | LOOSE IN BOX   |                        |  |                        | AMMOPACK                |                        |                      |
|   |  |                            | $l_t = 4.0 \text{ mm} + 1.0 \text{ mm} / - 0.5 \text{ mm}$ |                        | $l_t = 22.0 \text{ mm} \pm 4.0 \text{ mm}$ |                        | H = 18.5 mm             |                        |                      |
|   |  |                            | C-TOL. =<br>$\pm 10 \%$                                    | C-TOL. =<br>$\pm 5 \%$ | C-TOL. =<br>$\pm 10 \%$                    | C-TOL. =<br>$\pm 5 \%$ | C-TOL. =<br>$\pm 10 \%$ | C-TOL. =<br>$\pm 5 \%$ |                      |
| XX<br>(SPQ)   |  | XX<br>(SPQ)                |  | XX<br>(SPQ)            |  | XX<br>(SPQ)            |                         |                        |                      |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; $d_t = 0.60 \text{ mm} \pm 0.06 \text{ mm}$ |  |                            |  |                        |  |                        |                         |                        |                      |
| 0.039   | 4.0 x 9.5 x 10.0   | 0.23                       | 25...  | 26...                  | 21...                                      | 22...                  | 23...                   | 27...                  | 393                  |
| 0.047   |  |                            | (1000)   | (1000)                 | (1000)                                     | (1000)                 | (1500)                  | (1500)                 | 473                  |
| 0.056   |  |                            |  |                        |  |                        |                         |                        | 563                  |
| 0.068   |  |                            |  |                        |  |                        |                         |                        | 683                  |
| 0.082   |  |                            |  |                        |  |                        |                         |                        | 823                  |
| 0.10  |  |                            |  |                        |  |                        |                         |                        | 104                  |
| 0.12  | 4.5 x 10.0 x 10.5  | 0.37                       | 25...  | 26...                  | 21...                                      | 22...                  | 23...                   | 27...                  | 124                  |
| 0.15  | 5.0 x 10.5 x 10.5  | 0.39                       | 25...  | 26...                  | 21...                                      | 22...                  | 23...                   | 27...                  | 154                  |
| 0.18  |  |                            | (1000)   | (1000)                 | (1000)                                     | (1000)                 | (1000)                  | (1000)                 | 184                  |
| 0.22  | 5.5 x 11.5 x 10.5  | 0.44                       | 25...  | 26...                  | 21...                                      | 22...                  | 23...                   | 27...                  | 224                  |
| 0.27  | 6.0 x 12.5 x 10.5  | 0.55                       | 25...  | 26...                  | 21...                                      | 22...                  | 23...                   | 27...                  | 274                  |
| 0.33  |  |                            | (1000)   | (1000)                 | (1000)                                     | (1000)                 | (1000)                  | (1000)                 | 334                  |
| 0.39  |  |                            |  |                        |  |                        |                         |                        | 394                  |
| 0.47  |  |                            |  |                        |  |                        |                         |                        | 474                  |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only



U<sub>RDC</sub> = 250 V; U<sub>RAC</sub> = 160 V

| C<br>(µF)  | DIMENSIONS<br>w <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub><br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 367 XXYYY AND PACKAGING |                   |                                   |                   |                    |                   | C-VALUE<br>..YYY |
|--|---|----------------------------|---|-------------------|-----------------------------------|-------------------|--------------------|-------------------|------------------|
|  |   |                            | LOOSE IN BOX                                |                   |                                   |                   | AMMOPACK           |                   |                  |
|  |   |                            | l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm |                   | l <sub>t</sub> = 22.0 mm ± 4.0 mm |                   | H = 18.5 mm        |                   |                  |
|  |   |                            | C-TOL. =<br>± 10 %                          | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 %                | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 % | C-TOL. =<br>± 5 % |                  |
| XX<br>(SPQ)  |   | XX<br>(SPQ)                |   | XX<br>(SPQ)       |                                   | XX<br>(SPQ)       |                    |                   |                  |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm |   |                            |   |                   |                                   |                   |                    |                   |                  |
| 0.018  | 4.0 x 9.5 x 10.0  | 0.23                       | 45...                                       | 46...             | 41...                             | 42...             | 43...              | 47...             | 183              |
| 0.022  |   |                            | (1000)                                      | (1000)            | (1000)                            | (1000)            | (1500)             | (1500)            | 223              |
| 0.027  |   |                            |   |                   |                                   |                   |                    |                   | 273              |
| 0.033  |   |                            |   |                   |                                   |                   |                    |                   | 333              |
| 0.039  |   |                            |   |                   |                                   |                   |                    |                   | 393              |
| 0.047  |   |                            |   |                   |                                   |                   |                    |                   | 473              |
| 0.056  |   |                            |   |                   |                                   |                   | 563                |                   |                  |
| 0.068  | 4.5 x 10.0 x 10.0   | 0.37                       | 45...                                       | 46...             | 41...                             | 42...             | 43...              | 47...             | 683              |
| 0.082  |   |                            | (1000)                                      | (1000)            | (1000)                            | (1000)            | (1000)             | (1000)            | 823              |
| 0.10   | 5.0 x 10.5 x 10.0   | 0.39                       | 45...                                       | 46...             | 41...                             | 42...             | 43...              | 47...             | 104              |
| 0.12   | 5.5 x 11.0 x 10.0   | 0.42                       | 45...                                       | 46...             | 41...                             | 42...             | 43...              | 47...             | 124              |
|  |   |                            | (1000)                                      | (1000)            | (1000)                            | (1000)            | (1000)             | (1000)            |                  |
| 0.15   | 5.5 x 12.5 x 10.0   | 0.48                       | 45...                                       | 46...             | 41...                             | 42...             | 43...              | 47...             | 154              |
|  |   |                            | (1000)                                      | (1000)            | (1000)                            | (1000)            | (1000)             | (1000)            |                  |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only

U<sub>RDC</sub> = 400 V; U<sub>RAC</sub> = 220 V

| C<br>(µF)  | DIMENSIONS<br>w <sub>max.</sub> x h <sub>max.</sub> x l <sub>max.</sub><br>(mm) | MASS<br>(g) <sup>(1)</sup> | CATALOG NUMBER BFC2 367 XXYYY AND PACKAGING |                   |                                   |                   |                    |                   | C-VALUE<br>..YYY |
|--|---|----------------------------|---|-------------------|-----------------------------------|-------------------|--------------------|-------------------|------------------|
|  |   |                            | LOOSE IN BOX                                |                   |                                   |                   | AMMOPACK           |                   |                  |
|  |   |                            | l <sub>t</sub> = 4.0 mm + 1.0 mm / - 0.5 mm |                   | l <sub>t</sub> = 22.0 mm ± 4.0 mm |                   | H = 18.5 mm        |                   |                  |
|  |   |                            | C-TOL. =<br>± 10 %                          | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 %                | C-TOL. =<br>± 5 % | C-TOL. =<br>± 10 % | C-TOL. =<br>± 5 % |                  |
| XX<br>(SPQ)  |   | XX<br>(SPQ)                |   | XX<br>(SPQ)       |                                   | XX<br>(SPQ)       |                    |                   |                  |
| Pitch = 7.5 mm + 0.4 mm / - 0.2 mm; d <sub>t</sub> = 0.60 mm ± 0.06 mm |   |                            |   |                   |                                   |                   |                    |                   |                  |
| 0.0033   | 4.0 x 9.5 x 10.0  | 0.23                       | 55...                                       | 56...             | 51...                             | 52...             | 53...              | 57...             | 332              |
| 0.0039   |   |                            |   |                   |                                   |                   |                    |                   | 392              |
| 0.0047   |   |                            |   |                   |                                   |                   |                    |                   | 472              |
| 0.0056   |   |                            |   |                   |                                   |                   |                    |                   | 562              |
| 0.0068   |   |                            |   |                   |                                   |                   |                    |                   | 682              |
| 0.0082   |   |                            |   |                   |                                   |                   |                    |                   | 822              |
| 0.010  |   |                            |   |                   |                                   |                   |                    |                   | 103              |
| 0.012  |   |                            |   |                   |                                   |                   |                    |                   | 123              |
| 0.015  | 153   |                            |   |                   |                                   |                   |                    |                   |                  |
| 0.018  | 4.5 x 10.0 x 10.0   | 0.37                       | 55...                                       | 56...             | 51...                             | 52...             | 53...              | 57...             | 183              |
| 0.022  | 5.0 x 10.5 x 10.0   | 0.39                       | 55...                                       | 56...             | 51...                             | 52...             | 53...              | 57...             | 223              |
| 0.027  | 4.0 x 9.5 x 10.0  | 0.23                       | 55...                                       | 56...             | 51...                             | 52...             | 53...              | 57...             | 273              |
| 0.033  | 4.5 x 10.0 x 10.0   | 0.37                       | 55...                                       | 56...             | 51...                             | 52...             | 53...              | 57...             | 333              |
| 0.039  | 5.0 x 10.5 x 10.0   | 0.39                       | 55...                                       | 56...             | 51...                             | 52...             | 53...              | 57...             | 393              |
| 0.047  |   |                            | (1000)                                      | (1000)            | (1000)                            | (1000)            | (1000)             | (1000)            | (1000)           |
| 0.056  | 5.5 x 11.0 x 10.0   | 0.42                       | 55...                                       | 56...             | 51...                             | 52...             | 53...              | 57...             | 563              |

Notes

- SPQ = Standard Packing Quantity
- <sup>(1)</sup> Net weight for short lead products only



**MOUNTING**

**Normal Use**

The capacitors are designed for mounting on printed-circuit boards. The capacitors packed in bandoliers are designed for mounting in printed-circuit boards by means of automatic insertion machines.

For detailed tape specifications refer to packaging information: [www.vishay.com/doc?28139](http://www.vishay.com/doc?28139)

**Specific Method of Mounting to Withstand Vibration and Shock**

In order to withstand vibration and shock tests, it must be ensured that the underside and the kinks are in good contact with the printed-circuit board.

- For pitches  $\leq 15$  mm capacitors shall be mechanically fixed by the leads
- For larger pitches the capacitors shall be mounted in the same way and the body clamped

**SOLDERING CONDITIONS**

For general soldering conditions and wave soldering profile, we refer to the application note:

“Soldering Guidelines for Film Capacitors”: [www.vishay.com/doc?28171](http://www.vishay.com/doc?28171)

**Storage Temperature**

$T_{stg} = -25$  °C to  $+35$  °C with RH maximum 75 % without condensation

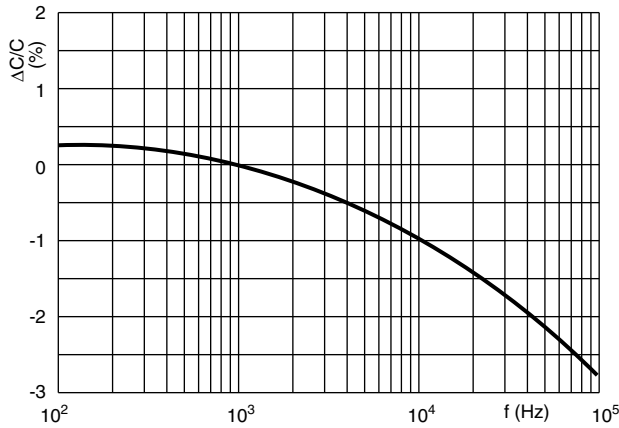
**Ratings and Characteristics Reference Conditions**

Unless otherwise specified, all electrical values apply to an ambient free air temperature of  $23$  °C  $\pm 1$  °C, an atmospheric pressure of 86 kPa to 106 kPa and a relative humidity of  $50$  %  $\pm 2$  %.

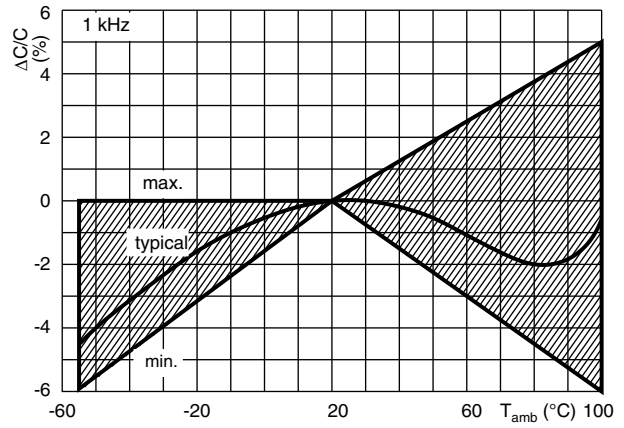
For reference testing, a conditioning period shall be applied over  $96$  h  $\pm 4$  h by heating the products in a circulating air oven at the rated temperature and a relative humidity not exceeding 20 %.



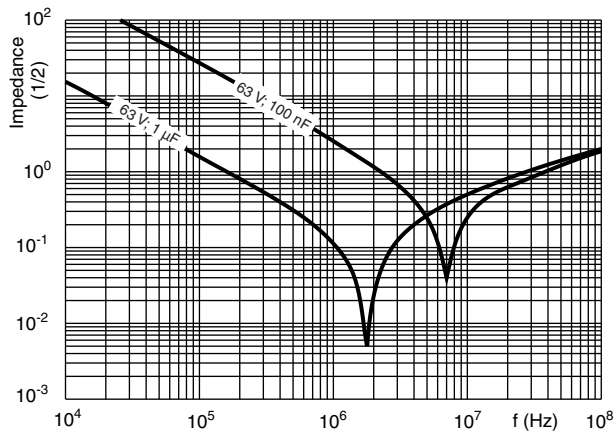
CHARACTERISTICS



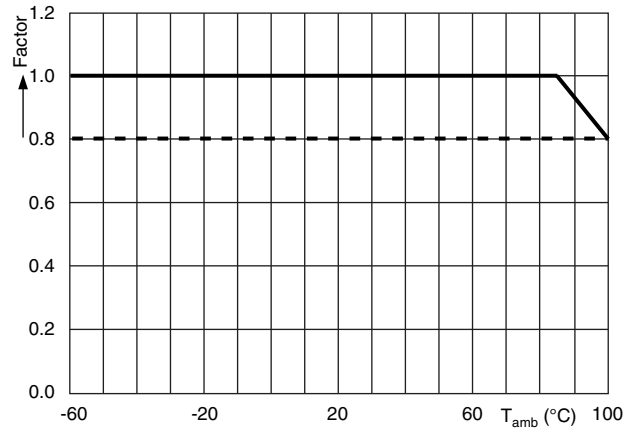
Capacitance as a function of frequency (typical curve)



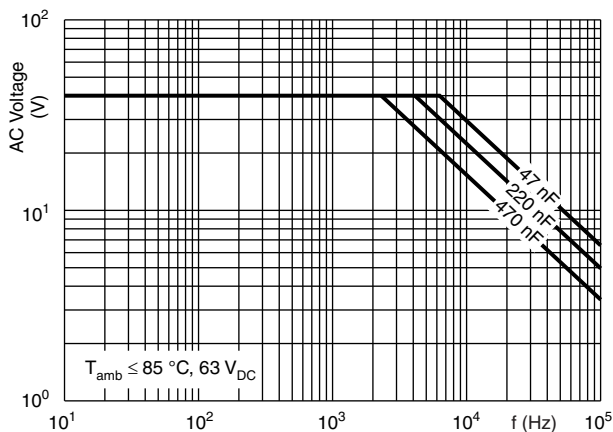
Capacitance as a function of ambient temperature (typical curve)



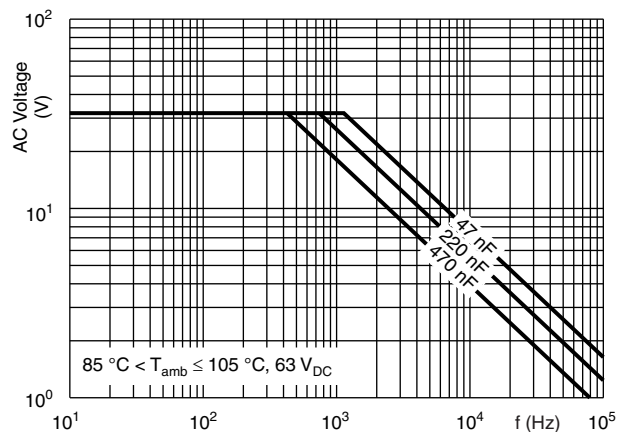
Impedance as a function of frequency (typical curve)



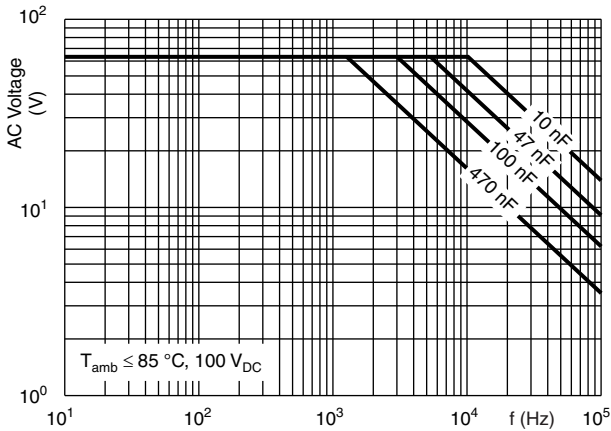
Max. DC and AC voltage as a function of temperature



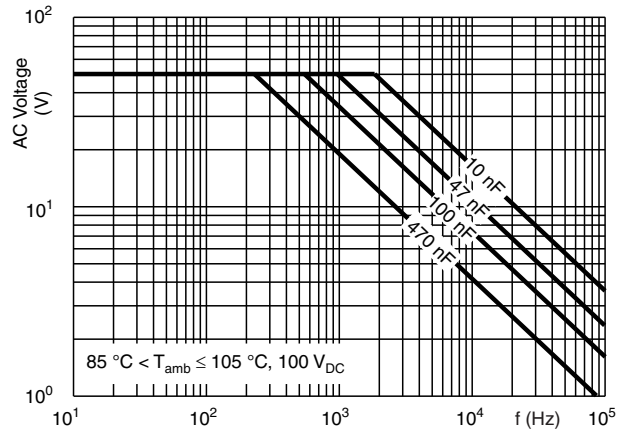
Max. RMS voltage as a function of frequency



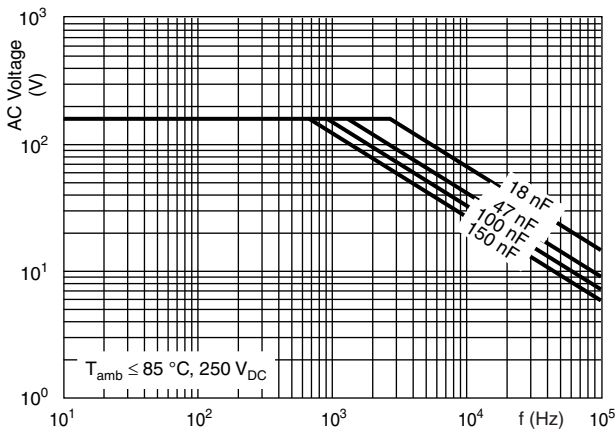
Max. RMS voltage as a function of frequency



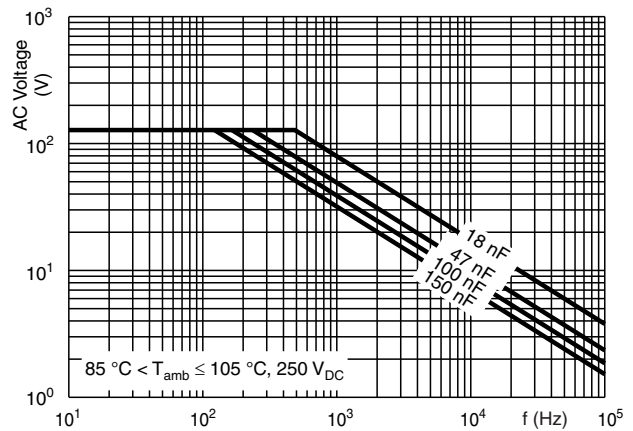
Max. RMS voltage as a function of frequency



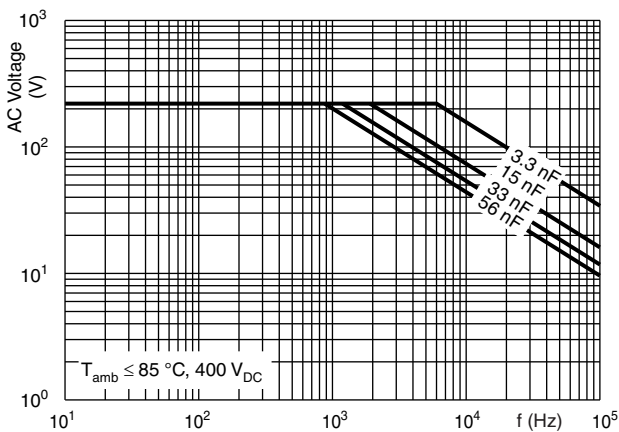
Max. RMS voltage as a function of frequency



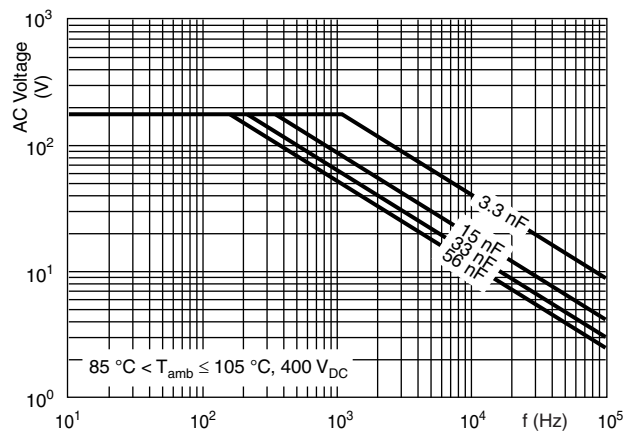
Max. RMS voltage as a function of frequency



Max. RMS voltage as a function of frequency



Max. RMS voltage as a function of frequency



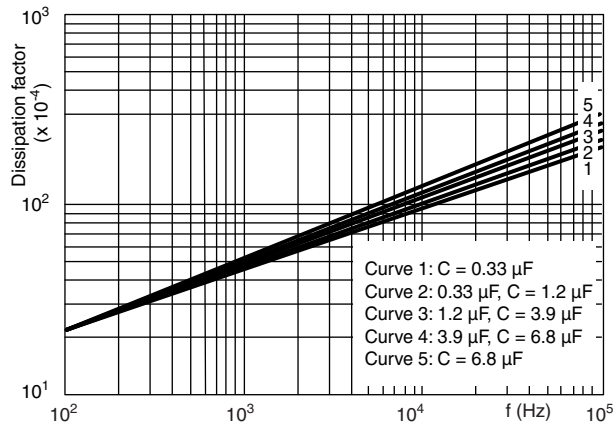
Max. RMS voltage as a function of frequency



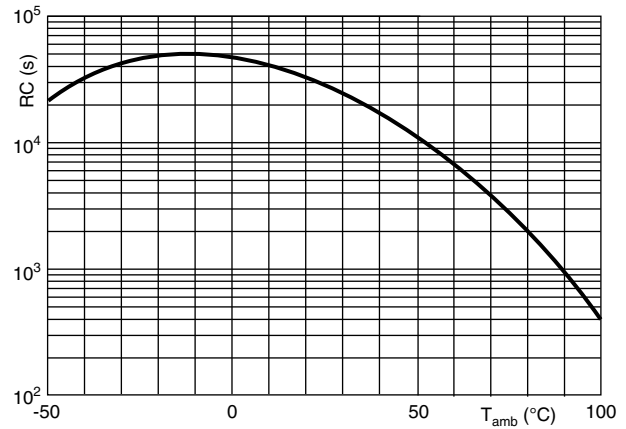
**MAXIMUM RMS CURRENT (SINEWAVE) AS A FUNCTION OF FREQUENCY**

The maximum RMS current is defined by  $I_{AC} = \omega \times C \times U_{AC}$

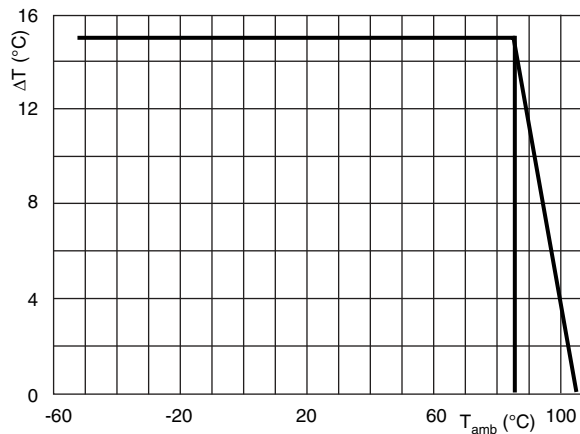
$U_{AC}$  is the maximum AC voltage depending on the ambient temperature in the curves “Max. RMS voltage and AC current as a function of frequency”.



Tangent of loss angle as a function of frequency



Insulation resistance as a function of the ambient temperature (typical curve)



Maximum allowed component temperature rise ( $\Delta T$ ) as a function of the ambient temperature ( $T_{amb}$ )

**HEAT CONDUCTIVITY (G) AS A FUNCTION OF (ORIGINAL) PITCH AND CAPACITOR BODY THICKNESS IN mW/°C**

| $W_{MAX.}$<br>(mm) | HEAT CONDUCTIVITY<br>(mW/°C) |
|--------------------|------------------------------|
| 3.5                | 3.0                          |
| 4.0                | 3.5                          |
| 4.5                | 3.5                          |
| 5.0                | 4.0                          |
| 5.5                | 4.0                          |
| 6.0                | 4.5                          |
| 6.5                | 5.0                          |

### POWER DISSIPATION AND MAXIMUM COMPONENT TEMPERATURE RISE

The power dissipation must be limited in order not to exceed the maximum allowed component temperature rise as a function of the free ambient temperature.

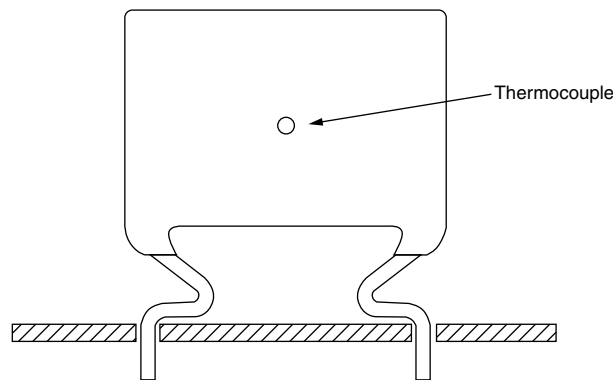
The power dissipation can be calculated according type detail specification “HQN-384-01/101: Technical Information Film Capacitors”.

The component temperature rise ( $\Delta T$ ) can be measured (see section “Measuring the Component Temperature” for more details) or calculated by  $\Delta T = P/G$ :

- $\Delta T$  = component temperature rise ( $^{\circ}\text{C}$ )
- $P$  = power dissipation of the component (mW)
- $G$  = heat conductivity of the component (mW/ $^{\circ}\text{C}$ )

### MEASURING THE COMPONENT TEMPERATURE

A thermocouple must be attached to the capacitor body as in:



The temperature is measured in unloaded ( $T_{\text{amb}}$ ) and maximum loaded condition ( $T_{\text{C}}$ ).

The temperature rise is given by  $\Delta T = T_{\text{C}} - T_{\text{amb}}$ .

To avoid radiation or convection, the capacitor should be tested in a wind-free box.

### APPLICATION NOTE AND LIMITING CONDITIONS

These capacitors are not suitable for mains applications as across-the-line capacitors without additional protection, as described hereunder. These mains applications are strictly regulated in safety standards and therefore electromagnetic interference suppression capacitors conforming the standards must be used.

To select the capacitor for a certain application, the following conditions must be checked:

1. For capacitors connected in parallel, normally the proof voltage and possibly the rated voltage must be reduced. For information depending of the capacitance value and the number of parallel connections contact: [dc-film@vishay.com](mailto:dc-film@vishay.com)
2. The peak voltage ( $U_{\text{P}}$ ) shall not be greater than the rated DC voltage ( $U_{\text{RDC}}$ )
3. The peak-to-peak voltage ( $U_{\text{P-P}}$ ) shall not be greater than  $2\sqrt{2} \times U_{\text{RAC}}$  to avoid the ionization inception level
4. The voltage pulse slope ( $dU/dt$ ) shall not exceed the rated voltage pulse slope in an RC-circuit at rated voltage and without ringing. If the pulse voltage is lower than the rated DC voltage, the rated voltage pulse slope may be multiplied by  $U_{\text{RDC}}$  and divided by the applied voltage.

For all other pulses following equation must be fulfilled:

$$2 \times \int_0^T \left( \frac{dU}{dt} \right)^2 \times dt < U_{\text{RDC}} \times \left( \frac{dU}{dt} \right)_{\text{rated}}$$

$T$  is the pulse duration.

The rated voltage pulse slope is valid for ambient temperatures up to  $85^{\circ}\text{C}$ . For higher temperatures a derating factor of 3 % per K shall be applied.

5. The maximum component surface temperature rise must be lower than the limits (see graph “Max. allowed component temperature rise”).
6. Since in circuits used at voltages over 280 V peak-to-peak the risk for an intrinsically active flammability after a capacitor breakdown (short circuit) increases, it is recommended that the power to the component is limited to 100 times the values mentioned in the table: “Heat Conductivity”
7. When using these capacitors as across-the-line capacitor in the input filter for mains applications or as series connected with an impedance to the mains the applicant must guarantee that the following conditions are fulfilled in any case (spikes and surge voltages from the mains included).

**VOLTAGE CONDITIONS FOR 6 ABOVE**

| ALLOWED VOLTAGES                             | $T_{amb} \leq 85\text{ }^{\circ}\text{C}$ | $85\text{ }^{\circ}\text{C} < T_{amb} \leq 105\text{ }^{\circ}\text{C}$ |
|--|---|---|
| Maximum continuous RMS voltage               | $U_{RAC}$                                 | $0.8 \times U_{RAC}$  |
| Maximum temperature RMS-overvoltage (< 24 h) | $1.25 \times U_{RAC}$                     | $U_{RAC}$   |
| Maximum peak voltage ( $V_{O-P}$ ) (< 2 s)   | $1.6 \times U_{RDC}$                      | $1.3 \times U_{RDC}$  |

**Example**

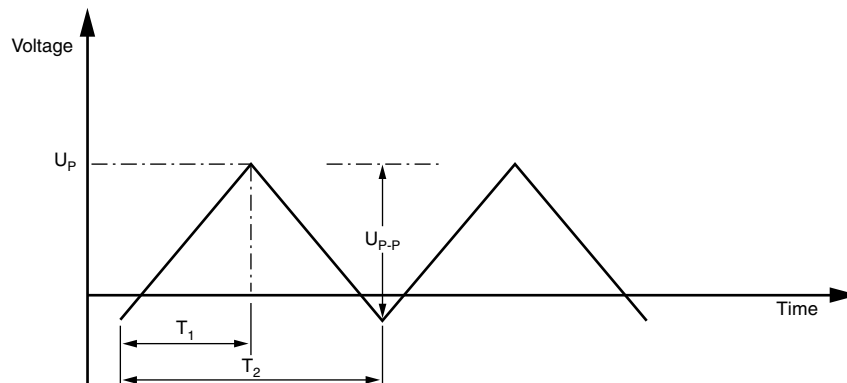
$C = 330\text{ nF} - 63\text{ V}$  used for the voltage signal shown in next drawing.

$U_{P-P} = 40\text{ V}$ ;  $U_P = 35\text{ V}$ ;  $T_1 = 100\text{ }\mu\text{s}$ ;  $T_2 = 200\text{ }\mu\text{s}$

The ambient temperature is  $35\text{ }^{\circ}\text{C}$

Checking conditions:

1. The peak voltage  $U_P = 35\text{ V}$  is lower than  $63\text{ V}_{DC}$
2. The peak-to-peak voltage  $40\text{ V}$  is lower than  $2\sqrt{2} \times 40\text{ V}_{AC} = 113\text{ V}_{P-P}$
3. The voltage pulse slope ( $dU/dt$ ) =  $40\text{ V}/100\text{ }\mu\text{s} = 0.4\text{ V}/\mu\text{s}$   
This is lower than  $110\text{ V}/\mu\text{s}$  (see specific reference data for each version)
4. The dissipated power is  $16.2\text{ mW}$  as calculated with fourier terms  
The temperature rise for  $W_{max.} = 4.5\text{ mm}$  and pitch =  $5\text{ mm}$  will be  $16.2\text{ mW}/2.5\text{ mW}/^{\circ}\text{C} = 6.5\text{ }^{\circ}\text{C}$   
This is lower than  $15\text{ }^{\circ}\text{C}$  temperature rise at  $35\text{ }^{\circ}\text{C}$ , according figure “Max. allowed component temperature rise”
5. Not applicable
6. Not applicable

**Voltage Signal**






INSPECTION REQUIREMENTS

General Notes

Sub-clause numbers of tests and performance requirements refer to the "Sectional Specification, Publication IEC 60384-2 and Specific Reference Data".

Group C Inspection Requirements

Table with 3 columns: SUB-CLAUSE NUMBER AND TEST, CONDITIONS, PERFORMANCE REQUIREMENTS. It details inspection requirements for sub-groups C1A and C1B, including tests for dimensions, capacitance, loss angle, robustness, soldering heat, solvent resistance, and vibration.



| SUB-CLAUSE NUMBER AND TEST   | CONDITIONS   | PERFORMANCE REQUIREMENTS   |
|--|--|--|
| 4.9 Shock  | Mounting:<br>See section "Mounting" of this specification<br>Pulse shape: half sine<br>Acceleration: 490 m/s <sup>2</sup><br>Duration of pulse: 11 ms  |  |
| 4.9.3 Final measurements   | Visual examination<br><br>Capacitance<br><br>Tangent of loss angle<br><br><br><br>Insulation resistance  | No visible damage<br><br>$ \Delta C/C  \leq 3\%$ of the value measured in 4.6.1<br><br>Increase of $\tan \delta$<br>$\leq 0.005$ for: $C \leq 100$ nF or<br>$\leq 0.010$ for: $100$ nF < $C \leq 220$ nF or<br>$\leq 0.015$ for: $220$ nF < $C \leq 470$ nF and<br>$\leq 0.003$ for: $C > 470$ nF<br>Compared to values measured in 4.6.1<br><br>As specified in section "Insulation Resistance" of this specification   |
| <b>SUB-GROUP C1 COMBINED SAMPLE OF SPECIMENS OF SUB-GROUPS C1A AND C1B</b> |  |  |
| 4.10 Climatic sequence   |  |  |
| 4.10.2 Dry heat  | Temperature: +105 °C<br>Duration: 16 h   |  |
| 4.10.3 Damp heat cyclic<br>Test Db, first cycle                            |  |  |
| 4.10.4 Cold  | Temperature: -55 °C<br>Duration: 2 h   |  |
| 4.10.6 Damp heat cyclic<br>Test Db, remaining cycles                       |  |  |
| 4.10.6.2 Final measurements  | Voltage proof = $U_{RDC}$ for 1 min within 15 min after removal from test chamber<br><br>Visual examination<br><br>Capacitance<br><br>Tangent of loss angle<br><br><br>Insulation resistance | No breakdown of flash-over<br><br>No visible damage<br>Legible marking<br><br>$ \Delta C/C  \leq 5\%$ of the value measured in 4.4.2 or 4.9.3<br><br>Increase of $\tan \delta$<br>$\leq 0.007$ for: $C \leq 100$ nF or<br>$\leq 0.010$ for: $100$ nF < $C \leq 220$ nF or<br>$\leq 0.015$ for: $220$ nF < $C \leq 470$ nF and<br>$\leq 0.005$ for: $C > 470$ nF<br>Compared to values measured in 4.3.1 or 4.6.1<br><br>$\geq 50\%$ of values specified in section "Insulation Resistance" of this specification |



| SUB-CLAUSE NUMBER AND TEST  | CONDITIONS   | PERFORMANCE REQUIREMENTS   |
|-----------------------------|--|--|
| <b>SUB-GROUP C2</b>         |  |  |
| 4.11 Damp heat steady state | 56 days, 40 °C, 90 % to 95 % RH  |  |
| 4.11.1 Initial measurements | Capacitance<br>Tangent of loss angle at 1 kHz  |  |
| 4.11.3 Final measurements   | Voltage proof = $U_{RDC}$ for 1 min within 15 min after removal from test chamber<br><br>Visual examination<br><br>Capacitance<br><br>Tangent of loss angle<br><br>Insulation resistance | No breakdown of flash-over<br><br>No visible damage<br>Legible marking<br><br>$ \Delta C/C  \leq 5\%$ of the value measured in 4.11.1.<br><br>Increase of $\tan \delta \leq 0.005$<br>Compared to values measured in 4.11.1<br><br>$\geq 50\%$ of values specified in section "Insulation Resistance" of this specification  |
| <b>SUB-GROUP C3</b>         |  |  |
| 4.12 Endurance              | Duration: 2000 h<br>1.25 x $U_{RDC}$ at 85 °C<br>1.0 x $U_{RDC}$ at 105 °C   |  |
| 4.12.1 Initial measurements | Capacitance<br>Tangent of loss angle:<br>for $C \leq 470$ nF at 100 kHz or<br>for $C > 470$ nF at 10 kHz   |  |
| 4.12.5 Final measurements   | Visual examination<br><br>Capacitance<br><br>Tangent of loss angle<br><br>Insulation resistance  | No visible damage<br>Legible marking<br><br>$ \Delta C/C  \leq 5\%$ compared to values measured in 4.12.1<br><br>Increase of $\tan \delta$<br>$\leq 0.005$ for: $C \leq 100$ nF or<br>$\leq 0.010$ for: $100$ nF < $C \leq 220$ nF or<br>$\leq 0.015$ for: $220$ nF < $C \leq 470$ nF and<br>$\leq 0.003$ for: $C > 470$ nF<br>Compared to values measured in 4.12.1<br><br>$\geq 50\%$ of values specified in section "Insulation Resistance" of this specification |
| <b>SUB-GROUP C4</b>         |  |  |
| 4.13 Charge and discharge   | 10 000 cycles<br>Charged to $U_R V_{DC}$<br>Discharge resistance:<br>$R = \frac{U_R}{C \times 2.5 \times (dU/dt)_R}$   |  |
| 4.13.1 Initial measurements | Capacitance<br>Tangent of loss angle:<br>for $C \leq 470$ nF at 100 kHz or<br>for $C > 470$ nF at 10 kHz   |  |
| 4.13.3 Final measurements   | Capacitance<br><br>Tangent of loss angle<br><br>Insulation resistance  | $ \Delta C/C  \leq 3\%$ compared to values measured in 4.13.1<br><br>Increase of $\tan \delta$<br>$\leq 0.005$ for: $C \leq 100$ nF or<br>$\leq 0.010$ for: $100$ nF < $C \leq 220$ nF or<br>$\leq 0.015$ for: $220$ nF < $C \leq 470$ nF and<br>$\leq 0.003$ for: $C > 470$ nF<br>Compared to values measured in 4.13.1<br><br>$\geq 50\%$ of values specified in section "Insulation Resistance" of this specification   |



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