

## Polycarbonate Film Capacitor Related Document: IEC 60 384-12

### MAIN APPLICATIONS:

Oscillator, timing and LC/RC filter circuits, high frequency coupling and decoupling of fast digital and analog IC's.

### MARKING:

Manufacturer's logo/type/C-value/rated voltage/tolerance/date of manufacture

### DIELECTRIC:

Polycarbonate film

### ELECTRODES:

Metal foil

### COATING:

Flame retardant plastic case (UL-class 94 V-0), red, epoxy resin sealed

### CONSTRUCTION:

Extended foil (refer to general information)

### LEADS:

Tinned wire

### IEC TEST CLASSIFICATION:

55/100/56, according to IEC 60068

### OPERATING TEMPERATURE RANGE:

- 55°C to + 100°C

### CAPACITANCE RANGE:

220pF to 10,000pF

### CAPACITANCE TOLERANCES:

± 20% (M), ± 10% (K), ± 5% (J)

### RATED VOLTAGES ( $U_R$ ):

63 VDC, 100 VDC, 160 VDC

### PERMISSIBLE AC VOLTAGES (RMS) UP TO 60Hz:

40 VAC, 63 VAC, 100 VAC

### TEST VOLTAGE (ELECTRODE/ELECTRODE):

$2 \times U_R$  for 2 s

### PULSE RISE TIME:

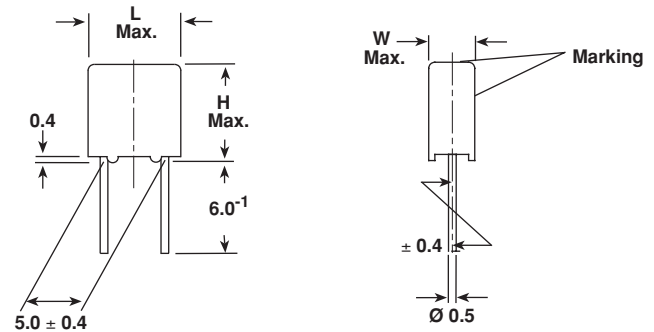
$d_v/d_t = 1000 \text{ V}/\mu\text{s}$

### DISSIPATION FACTOR TAN $\delta$

| MEASURED AT | $C \leq 0.1 \mu\text{F}$ |
|-------------|--------------------------|
| 1kHz        | $2 \times 10^{-3}$       |
| 10kHz       | $4 \times 10^{-3}$       |
| 100kHz      | $8 \times 10^{-3}$       |
|             | Maximum values           |

\*Please note: these capacitors are not recommended for new designs.

Dimensions in millimeters



### INSULATION RESISTANCE:

Measured at 100 VDC (63 VDC series measured at 50 VDC) after one minute  
500,000 M $\Omega$  minimum value (1000 G $\Omega$  typical value)

### CAPACITANCE DRIFT:

Up to + 40°C, ± 0.5% for a period of two years

### DERATING FOR DC AND AC. CATEGORY VOLTAGE $U_C$ :

At + 85°C:  $U_C = 1.0 U_R$

At + 100°C:  $U_C = 0.8 U_R$

### SELF INDUCTANCE:

~ 6 nH measured with 2mm long leads

### PULL TEST ON LEADS:

≥ 30 N in direction of leads according to IEC 60068-2-21

### RELIABILITY:

Operational life > 300,000 h

Failure rate < 1 FIT (40°C and  $0.5 \times U_R$ )

For further details, please refer to the general information provided in this catalog.

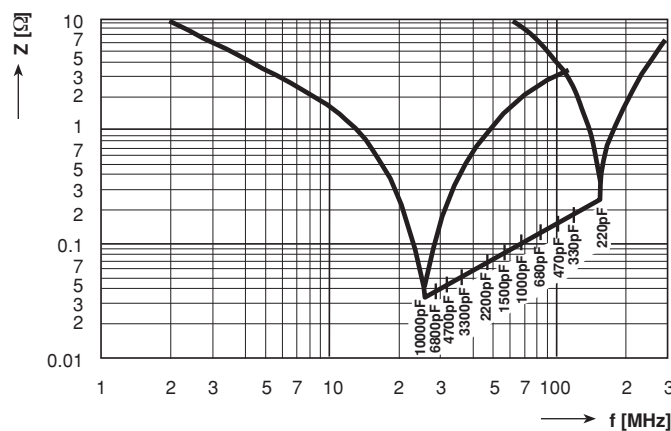
| CAPACITANCE  | CAPACITANCE CODE | VOLTAGE CODE 06<br>63 VDC/<br>40 VAC |     |     | VOLTAGE CODE 01<br>100 VDC/<br>63 VAC |     |     | VOLTAGE CODE 16<br>160 VDC/<br>100 VAC |     |     |
|--------------|------------------|--------------------------------------|-----|-----|---------------------------------------|-----|-----|--|-----|-----|
|              |                  | W                                    | H   | L   | W                                     | H   | L   | W                                      | H   | L   |
| 220 pF       | - 122            | —                                    | —   | —   | —                                     | —   | —   | 2.5                                    | 6.5 | 7.2 |
| 330 pF       | - 133            | —                                    | —   | —   | —                                     | —   | —   | 2.5                                    | 6.5 | 7.2 |
| 470 pF       | - 147            | —                                    | —   | —   | —                                     | —   | —   | 2.5                                    | 6.5 | 7.2 |
| 680 pF       | - 168            | —                                    | —   | —   | —                                     | —   | —   | 2.5                                    | 6.5 | 7.2 |
| 1000 pF      | - 210            | —                                    | —   | —   | —                                     | —   | —   | 2.5                                    | 6.5 | 7.2 |
| 1500 pF      | - 215            | —                                    | —   | —   | 2.5                                   | 6.5 | 7.2 | 3.5                                    | 8.5 | 7.2 |
| 2200 pF      | - 222            | —                                    | —   | —   | 2.5                                   | 6.5 | 7.2 | 3.5                                    | 8.5 | 7.2 |
| 3300 pF      | - 233            | 2.5                                  | 6.5 | 7.2 | —                                     | —   | —   | —                                      | —   | —   |
| 4700 pF      | - 247            | 2.5                                  | 6.5 | 7.2 | —                                     | —   | —   | —                                      | —   | —   |
| 6800 pF      | - 268            | 3.0                                  | 7.5 | 7.2 | —                                     | —   | —   | —                                      | —   | —   |
| 0.01 $\mu$ F | - 310            | 3.5                                  | 8.5 | 7.2 | —                                     | —   | —   | —                                      | —   | —   |

Further C-values upon request.

## RECOMMENDED PACKAGING

| LETTER CODE | TYPE OF PACKAGING | HEIGHT (H) (mm) | REEL DIAMETER (mm) | ORDERING CODE EXAMPLE | PCM 5 |
|-------------|-------------------|-----------------|--------------------|-----------------------|-------|
| D           | AMMO              | 16.5            | S*                 | KC 1850-210/165-D     | X     |
| G           | AMMO              | 18.5            | S*                 | KC 1850-210/165-G     | X     |
| F           | REEL              | 16.5            | 350                | KC 1850-210/165-F     | X     |
| W           | REEL              | 18.5            | 350                | KC 1850-210/165-W     | X     |
| —           | BULK              | —               | —                  | KC 1850-210/165       | X     |

\*S = box size 55 x 210 x 340mm (W x H x L)



Impedance versus Frequency  $Z = f(f)$  (Lead length 2.0mm)

\*Please note: these capacitors are not recommended for new designs.



## Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.