

# PHE845

RoHS  
Compliant

- EMI suppressor, class X1, metallized polypropylene
- 0.01 – 1.0  $\mu\text{F}$ , 760 VAC/600 VAC, +105°C

## TYPICAL APPLICATIONS

For worldwide use as electromagnetic interference suppressor in all X1 and across-the-line applications.  
Not for use in series with the mains.  
See [www.kemet.com](http://www.kemet.com) for more information.

## CONSTRUCTION

Triple winding of metallized polypropylene.  
Encapsulated in self-extinguishing material meeting the requirements of UL 94 V-0.

## TECHNICAL DATA

**Rated voltage** 760 VAC 50/60 Hz (ENEC)  
600 VAC 50/60 Hz (UL, CSA)

**Capacitance range** 0.01 – 1.0  $\mu\text{F}$

**Capacitance tolerance**  $\pm 20\%$  standard,  $\pm 10\%$  option

**Temperature range** –40 to +105°C

**Climatic category** 40/105/56/B

**Approvals** ENEC, UL, cUL

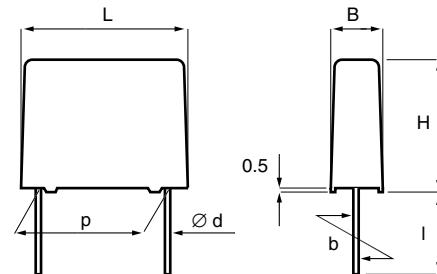
| <b>Dissipation factor</b> | Maximum values at +23°C  |  |  |
|---------------------------|--------------------------|--|--|
|                           | $C \leq 0.1 \mu\text{F}$ | $0.1 \mu\text{F} < C \leq 1 \mu\text{F}$ |  |
| 1 kHz                     | 0.1%                     | 0.1%                                     |  |
| 10 kHz                    | 0.2%                     | 0.4%                                     |  |
| 100 kHz                   | 0.6%                     | –  |  |

**Test voltage between terminals** The 100% screening factory test is carried out at 4250 VDC. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test.

**Resonance frequency** Tabulated self-resonance frequencies  $f_0$  refer to 5 mm lead length.

**Insulation resistance**  $C \leq 0.33 \mu\text{F}$ :  $\geq 30\,000 \text{ M}\Omega$   
 $C > 0.33 \mu\text{F}$ :  $\geq 10\,000 \text{ s}$

**In DC application** Recommended voltage:  $\leq 1500 \text{ VDC}$



| p              | d   | std I | max I | b         |
|----------------|-----|-------|-------|-----------|
| $22.5 \pm 0.4$ | 0.8 | 6     | 30    | $\pm 0.4$ |
| $27.5 \pm 0.4$ | 0.8 | 6     | 30    | $\pm 0.4$ |
| $37.5 \pm 0.5$ | 1.0 | 6     | 30    | $\pm 0.7$ |

Tolerance in lead length  
 $< 30 \text{ mm}$   $^{+0}_{-1} \text{ mm}$

30 mm  $^{+5}_{-0} \text{ mm}$

## ENVIRONMENTAL TEST DATA

**Endurance** EN/IEC 60384-14:2005  $1.25 \times U_R$  VAC 50 Hz, once every hour increased to 1000 VAC for 0.1 s, 1000 h at upper rated temperature

**Vibration** IEC 60068-2-6 Test Fc 3 directions at 2 hours each, 10–55 Hz at 0.75 mm or  $98 \text{ m/s}^2$  No visible damage  
No open or short circuit

**Bump** IEC 60068-2-29 Test Eb 1000 bumps at  $390 \text{ m/s}^2$  No visible damage  
No open or short circuit

**Change of temperature** IEC 60068-2-14 Test Na Upper and lower rated temperature 5 cycles No visible damage

**Active flammability** EN/IEC 60384-14:2005

**Passive flammability** EN/IEC 60384-14:2005 UL1414 Enclosure material of UL94V-0 flammability class

**Humidity** IEC 60068-2-3 Test Ca +40°C and 90 – 95% R.H. 56 days

| ARTICLE TABLE          |                      |      |      |      |                              |       |                     | APPROVALS          |   |  |  |
|------------------------|----------------------|------|------|------|------------------------------|-------|---------------------|--------------------|---|--|--|
| Capaci-<br>tance<br>µF | Box<br>code<br>in mm | B    | H    | L    | Max<br>f <sub>o</sub><br>MHz | dU/dt | Article code        | Certification Body | Specification                             |  |  |
| LEAD SPACING 22.5 MM   |                      |      |      |      |                              |       |                     | UL                 | UL 1283<br>(U <sub>R</sub> =600 VAC)      |  |  |
| 0.010                  | D13                  | 6.5  | 14.5 | 26.0 | 11                           | 100   | PHE845VD5100MR06L2  | cUL recognition    | C 22.2 No. 8<br>(U <sub>R</sub> =600 VAC) |  |  |
| 0.015                  | D13                  | 6.5  | 14.5 | 26.0 | 9.2                          | 100   | PHE845VD5150MR06L2  |                    |   |  |  |
| 0.022                  | D13                  | 6.5  | 14.5 | 26.0 | 7.6                          | 100   | PHE845VD5220MR06L2  |                    |   |  |  |
| 0.033                  | D17                  | 7.0  | 16.5 | 26.0 | 6.4                          | 100   | PHE845VD5330MR06L2  |                    |   |  |  |
| 0.047                  | D15                  | 9.0  | 18.5 | 26.0 | 5.3                          | 100   | PHE845VD5470MR06L2  |                    |   |  |  |
| 0.068                  | D18                  | 10.5 | 19.0 | 26.0 | 4.4                          | 100   | PHE845VD5680MR06L2  |                    |   |  |  |
| 0.10                   | D16                  | 11.0 | 21.5 | 26.0 | 3.5                          | 100   | PHE845VD6100MR06L2  |                    |   |  |  |
| 0.15                   | D20                  | 13.5 | 23.0 | 26.0 | 3.1                          | 100   | PHE845VD6150MR06L2  |                    |   |  |  |
| 0.22                   | D19                  | 15.5 | 24.5 | 26.0 | 2.7                          | 100   | PHE845VY6220MR06L2* |                    |   |  |  |

## LEAD SPACING 27.5 MM

|      |     |      |      |      |     |     |                     |
|------|-----|------|------|------|-----|-----|---------------------|
| 0.10 | F11 | 10.5 | 20.5 | 31.5 | 3.4 | 100 | PHE845VF6100MR06L2  |
| 0.15 | F12 | 11.5 | 22.5 | 31.5 | 3.0 | 100 | PHE845VF6150MR06L2  |
| 0.22 | F03 | 13.5 | 23.0 | 31.5 | 2.4 | 100 | PHE845VF6220MR06L2  |
| 0.33 | F15 | 19.0 | 29.0 | 31.5 | 2.0 | 100 | PHE845VF6330MR06L2  |
| 0.47 | F16 | 21.0 | 30.0 | 31.5 | 1.6 | 100 | PHE845VZ6470MR06L2* |

## LEAD SPACING 37.5 MM

|      |     |      |      |      |     |     |                     |
|------|-----|------|------|------|-----|-----|---------------------|
| 0.47 | R04 | 15.0 | 26.0 | 41.0 | 1.6 | 100 | PHE845VW6470MR06L2* |
| 0.47 | R02 | 16.5 | 32.0 | 41.0 | 1.6 | 100 | PHE845VR6470MR06L2  |
| 0.68 | R03 | 19.0 | 36.0 | 41.0 | 1.2 | 100 | PHE845VR6680MR06L2  |
| 1.0  | R06 | 21.0 | 38.0 | 41.0 | 1.0 | 100 | PHE845VW7100MR06L2* |

\* Only ±20%

## ORDERING INFORMATION

The article code for the standard part is given in the article table. For other options, see page 11.

## MARKING

- RIFA
- RIFA article code
- Rated capacitance
- Capacitance tolerance code
- Rated voltage
- X1
- Approval marks
- Manufacturing date code
- IEC climatic category
- Passive flammability class

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