

# PHE830

- EMI suppressor, class X2, metallized polyester
- 0.01 – 2.2  $\mu\text{F}$ , 275 VAC, +100°C

## TYPICAL APPLICATIONS

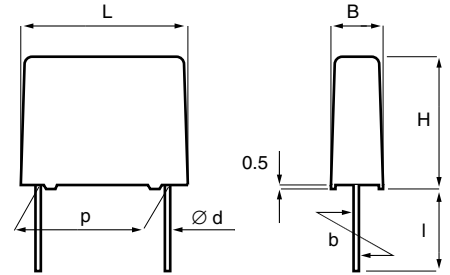
For worldwide use as electromagnetic interference suppressor in all X2 and across-the-line applications.

## CONSTRUCTION

Series winding of metallized polyester, encapsulated in self-extinguishing material meeting the requirements of UL 94 V-0

## TECHNICAL DATA

<b>Rated voltage</b>	275 VAC 50/60 Hz
<b>Capacitance range</b>	0.01 – 2.2 $\mu\text{F}$
<b>Capacitance tolerance</b>	$\pm 20\%$ standard, $\pm 10\%$ option
<b>Temperature range</b>	-40 to +100°C
<b>Climatic category</b>	40/100/56/C
<b>Approvals</b>	S, VDE, UL, CSA
<b>Dissipation factor <math>\tan\delta</math></b>	$\leq 1.0\%$ at 1 kHz
<b>Test voltage between terminals</b>	The 100% screening factory test is carried out at 2150 VDC. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test.
<b>Resonance frequency</b>	Tabulated self-resonance frequencies $f_0$ refer to 5 mm lead length.
<b>Insulation resistance</b>	$C \leq 0.33 \mu\text{F}$ : $\geq 30\,000 \text{ M}\Omega$ $C > 0.33 \mu\text{F}$ : $\geq 10\,000 \text{ s}$



p	d	std l	max l	b
15.0 $\pm$ 0.4	0.8	17	30	$\pm 0.4$
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  
 $< 30 \text{ mm}$   $\begin{matrix} +0 \\ -1 \end{matrix} \text{ mm}$   
 $\geq 30 \text{ mm}$   $\begin{matrix} +5 \\ -0 \end{matrix} \text{ mm}$

## ENVIRONMENTAL TEST DATA

<b>Endurance</b>	IEC 60384-14	1.25 x $U_r$ VAC 50 Hz, once every hour increased to 1000 VAC for 0.1 s, 1000 h at upper rated temp.	
<b>Vibration</b>	IEC 60068-2-6 Test Fc	3 directions at 2 hours each, 10-55 Hz at 0.75 mm or 98 m/s <sup>2</sup>	No visible damage No open or short circuit
<b>Bump</b>	IEC 60068-2-29 Test Eb	1000 bumps at 390 m/s <sup>2</sup>	No visible damage No open or short circuit
<b>Change of temperature</b>	IEC 60068-2-14 Test Na	Upper and lower rated temperature 5 cycles	No visible damage
<b>Active flammability</b>	EN 132400		
<b>Passive flammability</b>	IEC 60384-14 (1993) EN 132400 UL1414	Enclosure material of UL94V-0 flammability class	
<b>Humidity</b>	IEC 60068-2-3 Test Ca	+40°C and 90 – 95% R.H.	56 days

ARTICLE TABLE

Capacitance* µF	Max dimensions in mm				Quantity per package				Weight g	f <sub>o</sub> MHz	Max dU/dt V/µs	Approvals				Article code
	B	H	L	p	Bulk pcs	Tray pcs	reel taped pcs	µ				VDE	UL	CSA		
0.010	5.5	10.5	18.0	15.0	800		600	1.5	13	100	√	√	√	√	PHE830MB5100MR17	
0.015	5.5	10.5	18.0	15.0	800		600	1.5	11	100	√	√	√	√	PHE830MB5150MR17	
0.022	5.5	10.5	18.0	15.0	800		600	1.5	9.0	100	√	√	√	√	PHE830MB5220MR17	
0.033	5.5	10.5	18.0	15.0	800		600	1.5	7.5	100	√	√	√	√	PHE830MB5330MR17	
0.047	5.5	10.5	18.0	15.0	800		600	1.5	6.5	100	√	√	√	√	PHE830MX5470MR17**	
0.047	5.5	12.5	18.0	15.0	800		600	1.7	6.5	100	√	√	√	√	PHE830MB5470MR17	
0.068	5.5	12.5	18.0	15.0	800		600	1.7	5.5	100	√	√	√	√	PHE830MX5680MR17**	
0.068	6.5	12.5	18.0	15.0	600		500	2.0	5.5	100	√	√	√	√	PHE830MB5680MR17	
0.10	6.5	12.5	18.0	15.0	600		500	2.0	4.5	100	√	√	√	√	PHE830MX6100MR17**	
0.10	7.5	14.5	18.0	15.0	400		400	2.7	4.5	100	√	√	√	√	PHE830MB6100MR17	
0.15	8.5	16.0	18.0	15.0	400		400	4.3	3.9	100	√	√	√	√	PHE830MB6150MR17	
0.22	9.5	17.5	18.0	15.0	300		350	4.3	2.7	100	√	√	√	√	PHE830MB6220MR17	
0.10	6.5	14.5	26.0	22.5		234		3.3	4.5	100	√	√	√	√	PHE830MD6100MR06L2	
0.15	6.5	14.5	26.0	22.5		234		3.3	3.9	100	√	√	√	√	PHE830MD6150MR06L2	
0.22	8.0	16.0	26.0	22.5		186		4.5	2.7	100	√	√	√	√	PHE830MD6220MR06L2	
0.33	9.0	18.5	26.0	22.5		168		5.5	2.5	100	√	√	√	√	PHE830MD6330MR06L2	
0.47	11.0	21.5	26.0	22.5		253		8.0	2.0	100	√	√	√	√	PHE830MD6470MR06L2	
0.47	10.5	20.5	31.5	27.5		216		9.0	1.9	100	√	√	√	√	PHE830MF6470MR06L2	
0.68	11.5	22.5	31.5	27.5		198		10.5	1.6	100	√	√	√	√	PHE830MF6680MR06L2	
1.0	14.5	24.5	31.5	27.5		153		14.5	1.3	100	√	√	√	√	PHE830MF7100MR06L2	
1.5	17.5	28.0	31.5	27.5		126		20.0	0.8	100	√	√	√	√	PHE830MF7150MR06L2	
2.2	21.0	30.0	31.5	27.5		108		26.0	0.6	100	√	√	√	√	PHE830MF7220MR06L2	
1.5	15.0	26.0	41.0	37.5		119		21.0	0.7	100	√	√	√	√	PHE830MR7150MR06L2	
2.2	16.5	32.0	41.0	37.5		105		28.0	0.6	100	√	√	√	√	PHE830MR7220MR06L2	

\* The complete serie includes C values according to the E12 series. Details on request. \*\* Only ±20% tolerance

APPROVALS/REFERENCE DOCUMENTS

Certification Body	Specification	Approval reference
S	EN 132400	9707087-01, 9713122-01
VDE	EN 132400	101315, 101316
UL	UL 1283 (U <sub>R</sub> = 250 VAC) UL 1414 (U <sub>R</sub> = 125 VAC)	E 100117 E 73869
CSA	C 22.2 No. 8 (U <sub>R</sub> = 250 VAC)	53108

MARKING

- RIFA
- RIFA article code
- Rated capacitance
- Capacitance tolerance code
- Rated voltage
- X2
- Approval marks
- Manufacturing code (year, month)
- IEC climatic category
- Passive flammability class

ORDERING INFORMATION

The article code for the standard part is given in the article table. For other options, see page 21.

PACKING

The box dimensions for bulk packaging are 245 x 145 x 78 mm. Quantity/package as per article table.

Reels with taped capacitors are packed 10 in a box with dimension 370 x 370 x 560 mm. Quantity/reel according to article table. The standard quantity/reel is for 360 mm reel. If 500 mm reel is required, it must be specified when ordering and the quantity is 2 x the given quantity.