NOT FOR NEW DESIGN

PHE850

RoHS Compliant

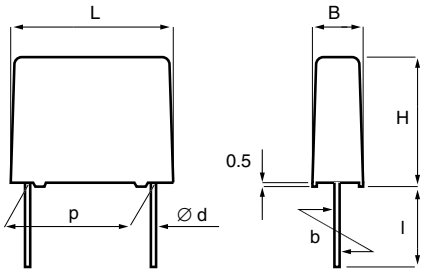
- **EMI suppressor, class Y2, metallized polypropylene**
- **0.001 – 1.0 µF, 300 VAC, +110 °C**
- **New, small dimensions including low profile capacitors**

TYPICAL APPLICATIONS

The capacitors are intended for use as interference suppressors in Y2 (line-to-earth) applications.
Not for use in series with the mains.
See www.kemet.com for more information.

CONSTRUCTION

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



p	d	std l	max l	b
10.0 ± 0.4	0.6	17	30	±0.4
15.0 ± 0.4	0.6/0.8*	17	30	±0.4
22.5 ± 0.4	0.8	6	30	±0.4
27.5 ± 0.4	0.8	6	30	±0.4
37.5 ± 0.5	1.0	6	30	±0.7

* Size 7.5 x 14.5 x 18.0 and bigger, d = 0.8 mm.

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

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

TECHNICAL DATA

Rated voltage
300 VAC, 50/60 Hz (ENEC,UL,cUL)

Capacitance range µF
0.001–1.0

Temperature range °C
–55/+110

Climatic category IEC
55/110/56/B

Capacitance tolerance
± 20% standard, other tolerances on request

Approvals
ENEC, UL, cUL

Dissipation factor tanδ
Maximum values at +23 °C

	C ≤ 0.1 µF	0.1 µF < C ≤ 1 µF
1 kHz	0.2%	0.15%
10 kHz	0.3%	0.4%
100 kHz	0.6%	–

Insulation resistance
C ≤ 0.33 µF: ≥ 30 000 MΩ
C > 0.33 µF: ≥ 10 000 s

Resonance frequency
Tabulated self-resonance frequencies f_0 refer to 5 mm lead lengths.

Test voltage between terminals
The 100% screening factory test is carried out at 5000 VDC and 2500 VAC. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test.

In DC applications
Recommended voltage: ≤ 1250 VDC

ENVIRONMENTAL TEST DATA

Endurance	EN/IEC 60384-14:2005	1.7 x 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 hour each, 10 – 55 Hz at 0.75 mm or 98 m/s²	No visible damage, No open or short circuit
Bump	IEC 60068-2-29, Test Eb	1000 bumps at 390 m/s²	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		
Humidity	IEC 60068-2-3, Test Ca	+40°C and 90 – 95% R.H.	56 days

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ARTICLE TABLE

LEAD SPACING 10 MM

Capacitance µF	Box code	Max dimensions in mm B	H	L	f_o MHz	Max dU/dt V/µs	Article code
0.0010	A06	4.0	8.0	13.0	50	100	PHE850EA4100MA06R17
0.0012	A06	4.0	8.0	13.0	45	100	PHE850EA4120MA06R17
0.0015	A01	4.0	9.0	13.0	43	100	PHE850EA4150MA01R17
0.0018	A01	4.0	9.0	13.0	40	100	PHE850EA4180MA01R17
0.0022	A01	4.0	9.0	13.0	36	100	PHE850EA4220MA01R17
0.0027	A02	4.5	10.5	13.0	34	100	PHE850EA4270MA02R17
0.0033	A02	4.5	10.5	13.0	31	100	PHE850EA4330MA02R17
0.0039	A03	5.0	11.0	13.0	29	100	PHE850EA4390MA03R17
0.0047	A03	5.0	11.0	13.0	26	100	PHE850EA4470MA03R17
0.0056	A04	6.0	12.0	13.0	23	100	PHE850EA4560MA04R17
0.0068	A04	6.0	12.0	13.0	20	100	PHE850EA4680MA04R17
0.0068	A05	9.5	7.5	13.0	21	100	PHE850EP4680MA05R17

LEAD SPACING 15 MM

Capacitance µF	Box code	Max dimensions in mm B	H	L	f_o MHz	Max dU/dt V/µs	Article code
0.0068	B04	5.5	10.5	18.0	14	100	PHE850EB4680MB04R17
0.0082	B04	5.5	10.5	18.0	14	100	PHE850EB4820MB04R17
0.010	B04	5.5	10.5	18.0	13	100	PHE850EB5100MB04R17
0.012	B05	5.5	12.5	18.0	12	100	PHE850EB5120MB05R17
0.015	B15	6.0	12.0	18.0	11	100	PHE850EB5150MB15R17
0.018	B10	6.5	12.5	18.0	10	100	PHE850EB5180MB10R17
0.022	B06	7.5	14.5	18.0	9.5	100	PHE850EB5220MB06R17
0.027	B06	7.5	14.5	18.0	8.6	100	PHE850EB5270MB06R17
0.033	B12	8.0	15.0	18.0	7.8	100	PHE850EB5330MB12R17
0.039	B11	8.5	16.0	18.0	7.0	100	PHE850EB5390MB11R17
0.047	B14	9.5	17.5	18.0	6.3	100	PHE850EB5470MB14R17
0.047	B17	13.0	12.5	18.0	6.3	100	PHE850EH5470MB17R17
0.056	B16	11.0	19.0	18.0	5.5	100	PHE850EB5560MB16R17
0.068	B16	11.0	19.0	18.0	4.7	100	PHE850EB5680MB16R17

LEAD SPACING 22.5 MM

Capacitance µF	Box code	Max dimensions in mm B	H	L	f_o MHz	Max dU/dt V/µs	Article code
0.033	D13	6.5	14.5	26.0	5.7	100	PHE850ED5330MD13R06L2
0.039	D13	6.5	14.5	26.0	5.4	100	PHE850ED5390MD13R06L2
0.047	D13	6.5	14.5	26.0	5.0	100	PHE850ED5470MD13R06L2
0.056	D17	7.0	16.5	26.0	4.7	100	PHE850ED5560MD17R06L2
0.068	D17	7.0	16.5	26.0	4.3	100	PHE850ED5680MD17R06L2
0.082	D15	9.0	18.5	26.0	4.0	100	PHE850ED5820MD15R06L2
0.10	D18	10.5	19.0	26.0	3.6	100	PHE850ED6100MD18R06L2
0.12	D18	10.5	19.0	26.0	3.3	100	PHE850ED6120MD18R06L2
0.15	D16	11.0	21.5	26.0	2.8	100	PHE850ED6150MD16R06L2
0.18	D20	13.5	23.0	26.0	2.5	100	PHE850ED6180MD20R06L2
0.22	D20	13.5	23.0	26.0	2.3	100	PHE850ED6220MD20R06L2

LEAD SPACING 27.5 MM

Capacitance µF	Box code	Max dimensions in mm B	H	L	f_o MHz	Max dU/dt V/µs	Article code
0.15	F11	10.5	20.5	31.5	2.4	100	PHE850EF6150MF11R06L2
0.15	F17	21.0	12.5	31.5	2.4	100	PHE850ET6150MF17R06L2
0.18	F11	10.5	20.5	31.5	2.2	100	PHE850EF6180MF11R06L2
0.22	F12	11.5	22.5	31.5	2.1	100	PHE850EF6220MF12R06L2
0.27	F03	13.5	23.0	31.5	1.9	100	PHE850EF6270MF03R06L2
0.33	F13	14.5	24.5	31.5	1.7	100	PHE850EF6330MF13R06L2
0.39	F14	17.5	28.0	31.5	1.6	100	PHE850EF6390MF14R06L2
0.47	F14	17.5	28.0	31.5	1.4	100	PHE850EF6470MF14R06L2
0.47	F19	27.5	16.0	31.5	1.5	100	PHE850ET6470MF19R06L2
0.56	F16	21.0	30.0	31.5	1.3	100	PHE850EF6560MF16R06L2
0.68	F16	21.0	30.0	31.5	1.2	100	PHE850EZ6680MF16R06L2 *

LEAD SPACING 37.5 MM

Capacitance µF	Box code	Max dimensions in mm B	H	L	f_o MHz	Max dU/dt V/µs	Article code
0.33	R05	13.0	24.0	41.0	1.2	100	PHE850ER6330MR05R06L2
0.39	R05	13.0	24.0	41.0	1.1	100	PHE850ER6390MR05R06L2
0.47	R05	13.0	24.0	41.0	1.1	100	PHE850ER6470MR05R06L2
0.56	R04	15.0	26.0	41.0	1.0	100	PHE850ER6560MR04R06L2
0.68	R02	16.5	32.0	41.0	0.94	100	PHE850ER6680MR02R06L2
0.82	R02	16.5	32.0	41.0	0.88	100	PHE850ER6820MR02R06L2
1.0	R03	19.0	36.0	41.0	0.81	100	PHE850ER7100MR03R06L2

* Only ± 20% tolerance

APPROVALS

Certification Body	Specification
ENEC	EN/IEC 60384-14:2013
UL	UL 60384-14
	CAN/CSA-E60384-14:09

MARKING

- RIFA
- RIFA article code
- Rated capacitance
- Capacitance tolerance code
- Rated voltage
- Y2
- Approval marks
- IEC Climatic category
- Passive flammability class
- Manufacturing date code

ORDERING INFORMATION

The article code for the standard part is given in the article table.

Statements of suitability for certain applications are based on our knowledge of typical operating conditions for such applications, but are not intended to constitute – and we specifically disclaim – any warranty concerning suitability for a specific customer application or use. This Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by us with reference to the use of our products is given gratis, and we assume no obligation or liability for the advice given or results obtained.