

PHE820

- EMI suppressor, class X2, metallized polyester
- 0.01 – 2.2 μF , 275/300 VAC, +100°C

TYPICAL APPLICATIONS

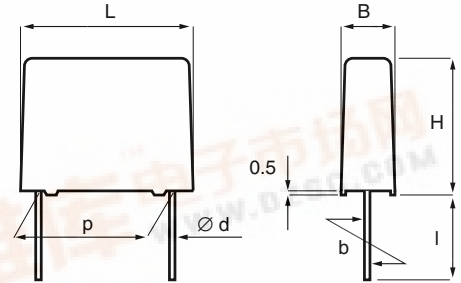
The capacitors are intended for use as Interference suppressor in X2 and across-the-line applications.

CONSTRUCTION

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

TECHNICAL DATA

	PHE820 M	PHE820 E
Rated voltage	275 VAC 50/60 Hz	300 VAC 50/60 Hz
Capacitance range	0.01 – 2.2 μF	0.01 – 2.2 μF
Capacitance tolerance	$\pm 20\%$ standard, $\pm 10\%$ option	
Temperature range	-40 to +100°C	
Climatic category	40/100/56/C	
Approvals	S, N, D, FI, VDE, SEV, IMQ, UL, CSA	
Dissipation factor $\tan\delta$	$\leq 1.0\%$ at 1 kHz	
Insulation resistance	$C \leq 0.33 \mu\text{F} \geq 30\,000 \text{ M}\Omega$ $C > 0.33 \mu\text{F} \geq 10\,000 \text{ s}$	
Resonance frequency	Tabulated self-resonance frequencies f_0 refer to 5 mm lead length.	
Test voltage between terminals	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.	



p	d	std l	max l	b
15.0 $\pm$ 0.4	0.8	17	30	± 0.4
22.5 $\pm$ 0.4	0.8	6	30	± 0.4
27.5 $\pm$ 0.4	0.8	6	30	± 0.4
37.5 $\pm$ 0.5	1.0	6	30	± 0.7

Tolerance in lead length
 $< 30 \text{ mm}$ $\begin{smallmatrix} +0 \\ -1 \end{smallmatrix} \text{ mm}$
 $\geq 30 \text{ mm}$ $\begin{smallmatrix} +5 \\ -0 \end{smallmatrix} \text{ mm}$

ENVIRONMENTAL TEST DATA

Endurance	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.	
Vibration	IEC 60068-2-6 Test Fc	3 directions at 2 hours each, 10 – 55 Hz at 0.75 mm or 98 m/s ²	No visible damage No open or short circuit
Bump	IEC 60068-2-29 Test Eb	1000 bumps at 390 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 132400		
Passive flammability	IEC 60384-14 (1993) EN 132400		
Humidity	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 _o MHz	Max dU/dt V/μs	Approvals							Article code		
	B	H	L	p	Bulk pcs	Tray pcs	reel taped pcs				S	Z	D	EL	VDE	SEV	IMQ		UL	CSA
275 VAC, PHE820M																				
0.010	5.5	10.5	18.0	15.0	800		600	1.5	13	100	√	√	√	√	√	√	√	√	√	PHE820MB5100MR17
0.015	5.5	10.5	18.0	15.0	800		600	1.5	11	100	√	√	√	√	√	√	√	√	√	PHE820MB5150MR17
0.022	5.5	10.5	18.0	15.0	800		600	1.5	9.0	100	√	√	√	√	√	√	√	√	√	PHE820MB5220MR17
0.033	5.5	12.5	18.0	15.0	800		600	2.0	7.5	100	√	√	√	√	√	√	√	√	√	PHE820MB5330MR17
0.047	6.5	12.5	18.0	15.0	600		500	2.5	6.5	100	√	√	√	√	√	√	√	√	√	PHE820MB5470MR17
0.068	7.5	14.5	18.0	15.0	400		400	3.0	5.5	100	√	√	√	√	√	√	√	√	√	PHE820MB5680MR17
0.10	8.5	16.0	18.0	15.0	400		400	3.5	4.5	100	√	√	√	√	√	√	√	√	√	PHE820MB6100MR17
0.10	6.5	14.5	26.0	22.5		234		3.5	4.5	100	√	√	√	√	√	√	√	√	√	PHE820MD6100MR06L2
0.15	8.0	16.0	26.0	22.5		186		4.5	3.9	100	√	√	√	√	√	√	√	√	√	PHE820MD6150MR06L2
0.22	9.0	18.5	26.0	22.5		168		6.0	2.7	100	√	√	√	√	√	√	√	√	√	PHE820MD6220MR06L2
0.33	11.0	21.5	26.0	22.5		253		8.0	2.5	100	√	√	√	√	√	√	√	√	√	PHE820MD6330MR06L2
0.47	11.5	22.5	31.5	27.5		198		10.5	1.9	100	√	√	√	√	√	√	√	√	√	PHE820MF6470MR06L2
0.68	14.5	24.5	31.5	27.5		153		15.0	1.6	100	√	√	√	√	√	√	√	√	√	PHE820MF6680MR06L2
1.0	17.5	28.0	31.5	27.5		126		20.0	1.3	100	√	√	√	√	√	√	√	√	√	PHE820MF7100MR06L2
1.5	16.5	32.0	41.0	37.5		105		27.0	0.75	100	√	√	√	√	√	√	√	√	√	PHE820MR7150MR06L2
2.2	19.0	36.0	41.0	37.5		91		37.0	0.65	100	√	√	√	√	√	√	√	√	√	PHE820MR7220MR06L2
300 VAC, PHE820E																				
0.010	5.5	10.5	18.0	15.0	800		600	1.5	13	100	√							√	√	PHE820EB5100MR17
0.015	5.5	10.5	18.0	15.0	800		600	1.5	11	100	√							√	√	PHE820EB5150MR17
0.022	5.5	10.5	18.0	15.0	800		600	1.5	9.0	100	√							√	√	PHE820EB5220MR17
0.033	5.5	12.5	18.0	15.0	800		600	2.0	7.5	100	√							√	√	PHE820EB5330MR17
0.047	6.5	12.5	18.0	15.0	600		500	2.5	6.5	100	√							√	√	PHE820EB5470MR17
0.068	7.5	14.5	18.0	15.0	400		400	3.0	5.5	100	√							√	√	PHE820EB5680MR17
0.10	8.5	16.0	18.0	15.0	400		400	3.5	4.5	100	√							√	√	PHE820EB6100MR17
0.10	6.5	14.5	26.0	22.5		234		3.5	4.5	100	√							√	√	PHE820ED6100MR06L2
0.15	8.0	16.0	26.0	22.5		186		4.5	3.9	100	√							√	√	PHE820ED6150MR06L2
0.22	9.0	18.5	26.0	22.5		168		6.0	2.7	100	√							√	√	PHE820ED6220MR06L2
0.33	11.0	21.5	26.0	22.5		253		8.0	2.5	100	√							√	√	PHE820ED6330MR06L2
0.33	10.5	20.5	31.5	27.5		216		9.0	2.4	100	√							√	√	PHE820EF6330MR06L2
0.47	11.5	22.5	31.5	27.5		198		10.5	1.9	100	√							√	√	PHE820EF6470MR06L2
0.68	14.5	24.5	31.5	27.5		153		15.0	1.6	100	√							√	√	PHE820EF6680MR06L2
1.0	17.5	28.0	31.5	27.5		126		20.0	1.3	100	√							√	√	PHE820EF7100MR06L2
1.5	16.5	32.0	41.0	37.5		105		27.0	0.75	100	√							√	√	PHE820ER7150MR06L2
2.2	19.0	36.0	41.0	37.5		91		37.0	0.65	100	√							√	√	PHE820ER7220MR06L2

*The complete serie includes C values according to the E12 series. Details on request.

APPROVALS/REFERENCE DOCUMENTS

Certification Body	Specification	Approval reference	
		PHE820M	PHE820E
S	EN 132400	9510033, 9719009-01	9510034
N	EN 132400	P97101751	
D	EN 132400	306839	
FI	EN 132400	196591-01	
VDE	EN 132400	89758, 101314	
SEV	EN 132400	95.7 70721.01	
IMQ	EN 132400	V 2884	
UL	UL 1283 ($U_R = 250$ VAC)	E 100117	
	UL 1414 ($U_R = 250$ VAC)	E 73869	E 73869
CSA	C 22.2 No.8	53108	53108
	C 22.2 No.1 ($U_R = 125$ VAC) ($\leq 0.47 \mu\text{F}$)	53108	

MARKING

- RIFA
- RIFA article code
- Rated capacitance
- Capacitance tolerance code
- Rated voltage
- X2
- Approval marks
- Manufacturing code (year, month)
- Climatic category according to IEC 60068-1, appendix A
- 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 80 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/package as per 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.