

# PME 271 -series X1 X2 Y2

- The highest possible safety regarding active and passive flammability.
- Self-extinguishing UL 94V-0 encapsulation material.
- High dU/dt capability.
- Excellent self-healing properties. Ensures long life even when subject to frequent overvoltages.
- Good resistance to ionisation due to impregnated dielectric.
- Small dimensions.
- Safety approvals for worldwide use.
- The capacitors meet the most stringent IEC humidity class, 56 days.
- The impregnated paper ensures excellent stability giving outstanding reliability properties, especially in applications having continuous operation.

## Typical applications

The capacitors are intended for use as interference suppressors in X1, X2 (across-the-line) and Y2 (line-to-earth) applications.

## Construction

Multi-layer metallized paper. Encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94V-0.

## General data

	X2	X2	X1	Y2
	PME271M	PME271MD	PME271E	PME271Y
Capacitance range $\mu\text{F}$	0.001–0.6	0.1–0.33	0.01–0.22	0.001–0.1
Rated voltage VAC	275	275	300	250
Temperature range $^{\circ}\text{C}$	-40/+100	-40/+110	-40/+100	-40/+100*
Climatic category IEC	40/100/56/B	40/110/56/B	40/100/56/B	40/100/56/B
Capacitance tolerance	$\pm 10\%$ for $C > 0.1 \mu\text{F}$ , code K. $\pm 20\%$ for $C \leq 0.1 \mu\text{F}$ , code M			
Approvals	S, N, D, FI, VDE, SEV, ÖVE, IMQ, UL, CSA			
	*) approvals pending for +110 $^{\circ}\text{C}$ .			

## Electrical characteristics

**Dissipation factor**  
1.3 % at 1 kHz

**Insulation resistance**  
C 0.33  $\mu\text{F}$  12000 M  
C > 0.33  $\mu\text{F}$  4000 F  
Measured at 500 VDC after 60 s, +23 $^{\circ}\text{C}$

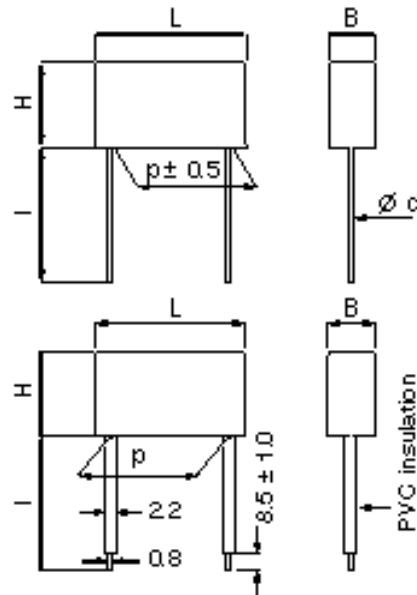
**In DC applications**  
Recommended voltage:  
PME 271 M, E 630 VDC  
PME 271 Y 1000 VDC

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

**Test voltage between terminals**  
The RIFA 100% screening factory test is carried out at: **2150 VDC**: PME271M, PME271MD and PME271E. **2700 VDC**: PME271Y. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test.

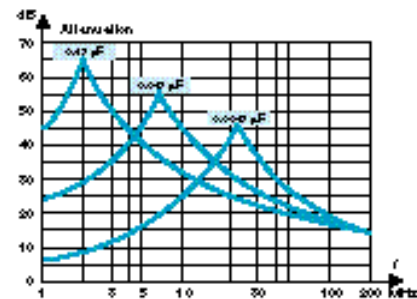
## Environmental test data

<b>Vibration</b>	IEC 68-2-6 Test Fc	3 directions at 2 hour each, 10 – 500 Hz at 0.75 mm or 98 m/s <sup>2</sup>	No visible damage No open or short circuit
<b>Bump</b>	IEC 68-2-29 Test Eb	4000 bumps at 390 m/s <sup>2</sup>	No visible damage No open or short circuit
<b>Solderability</b>	IEC 68-2-20 Test Ta	Solder globule method	Wetting time for $d \leq 0.8$ 1 s for $d > 0.8 < 1.5$ s
<b>Active flammability</b>	EN 132400		
<b>Passive flammability</b>	IEC 384-14 (1993) EN 132400		
<b>Humidity</b>	IEC 68-2-3 Test Ca	+40 $^{\circ}\text{C}$ and 90 – 95% R.H.	56 days



$d = 0.6$  for  $p = 10.2$   
 $0.8$  for  $p = 15.2, 20.3, 22.5$   
 $1.0$  for  $p = 25.4$

$l =$  standard  $30 \pm 0.4$  mm uninsulated (code R30)  
option  $30 \pm 0.4$  mm insulated (code S)  
option shortleads, tolerance  $\pm 0.1$  mm  
(standard 6 mm, code R06)  
Other lead lengths on request



Suppression versus frequency. Typical values.

## Article table PME 271

C <sub>R</sub> μF	Max dimensions in mm				Quantity per package			Weight g	f <sub>o</sub> MHz	Max dU/dt V/μs	Approvals							Article code 1 st block
	B	H	L	p	R30 pcs	R06 pcs	reel taped pcs				0	1	2	3	4	5	6	
<b>Class X2: 275 VAC, +100 °C, PME 271 M</b>																		
0.001	3.9	7.5	13.5	10.2	1000	2000	700	0.7	53.0	1200							PME 271M410M	
0.0015	3.9	7.5	13.5	10.2	1000	2000	700	0.7	44.0	1200							PME 271M415M	
0.0022	3.9	7.5	13.5	10.2	1000	2000	700	0.7	37.0	1200							PME 271M422M	
0.0033	4.1	8.2	13.5	10.2	1000	2000	600	0.9	30.0	1200							PME 271M433M	
0.0047	5.1	10.5	13.5	10.2	800	1600	600	1.2	24.0	1200							PME 271M447M	
0.0068	5.2	10.5	18.5	15.2	500	1000	600	1.7	18.5	1200						↗	PME 271M468M	
0.01	5.2	10.5	18.5	15.2	500	1000	600	1.7	15.5	1200						↗	PME 271M510M	
0.015	5.2	10.5	18.5	15.2	500	1000	600	1.7	13.0	1200						↗	PME 271M515M	
0.022	6.0	12.5	18.5	15.2	400	800	400	3.0	10.0	1200						↗	PME 271M522M	
0.033	6.0	12.5	18.5	15.2	400	800	400	3.0	8.4	1200						↗	PME 271M533M	
0.047	6.0	12.5	18.5	15.2	400	800	400	3.0	7.0	1200						↗	PME 271M547M	
0.068	7.8	13.5	18.5	15.2	400	800	400	3.3	5.6	1200						↗	PME 271M568M	
0.1	7.6	14.0	24.0	20.3	250	1500	250	4.0	4.1	600						↗	PME 271M610M	
0.15	9.0	15.0	24.0	20.3	200	1200	250	5.0	3.4	600						↗	PME 271M615K	
0.22	11.3	16.5	24.0	20.3	150	1000	180	7.0	2.7	600						↗	PME 271M622K	
0.27	10.5	17.3	30.5	25.4	100	1000		8.5	2.4	400							PME 271M627K	
0.33	12.1	19.0	30.5	25.4	100	800		10.0	2.1	400							PME 271M633K	
0.47	15.3	22.0	30.5	25.4	75	600		15.0	1.8	400							PME 271M647K	
0.6	15.3	22.0	30.5	25.4	75	600		15.0	1.6	400							PME 271M660K	
<b>Class X2: 275 VAC, +110 °C, PME 271 MD</b>																		
0.1	8.0	17.0	27.0	22.5	200	1200	250	5.5	3.9	600							PME 271MD6100M	
0.15	8.0	17.0	27.0	22.5	200	1200	250	5.5	3.3	600							PME 271MD6150K	
0.22	10.0	19.0	27.0	22.5	150	1000	250	7.5	2.6	600							PME 271MD6220K	
0.27	12.0	22.0	27.0	22.5	100	800		10.0	2.3	400							PME 271MD6270K	
0.33	12.0	22.0	27.0	22.5	100	800		10.0	2.1	400							PME 271MD6330K	
<b>Class X1: 300 VAC, +100 °C, PME 271 E</b>																		
0.01	5.2	10.5	18.5	15.2	500	1000	600	1.7	15.5	1200						↗	PME 271E510M	
0.015	5.2	10.5	18.5	15.2	500	1000	600	1.7	13.0	1200						↗	PME 271E515M	
0.022	7.3	13.0	19.0	15.2	400	800	400	3.0	9.8	1200						↗	PME 271E522M	
0.033	7.3	13.0	19.0	15.2	400	800	400	3.0	7.0	1200						↗	PME 271E533M	
0.047	8.5	14.3	18.5	15.2	300	600	400	3.8	6.4	1200						↗	PME 271E547M	
0.068	7.6	14.0	24.0	20.3	250	1500	250	4.5	5.2	600						↗	PME 271E568M	
0.068	8.0	17.0	27.0	22.5	200	1200	250	5.5	4.7	600							PME 271ED5680M	
0.1	11.3	16.5	24.0	20.3	150	1000	180	7.0	4.1	600						↗	PME 271E610M	
0.1	8.0	17.0	27.0	22.5	200	1200	250	5.5	4.1	600							PME 271ED6100M	
0.15	10.6	16.1	30.5	25.4	150	1000		8.6	3.3	400							PME 271E615K	
0.15	10.0	19.0	27.0	22.5	150	1000	250	5.5	3.2	600							PME 271ED6150K	
0.22	12.1	19.0	30.5	25.4	100	800		10.0	2.6	400							PME 271E622K	
0.22	12.0	22.0	27.0	22.5	100	800		5.5	2.5	600							PME 271ED6220K	
<b>Class Y2: 250 VAC, +100 °C, PME 271 Y (+110°C pending)</b>																		
0.001	3.9	7.5	13.5	10.2	1000	2000	700	0.7	53.0	2000							PME 271Y410M	
0.0015	3.9	7.5	13.5	10.2	1000	2000	700	0.7	44.0	2000							PME 271Y415M	
0.0022	3.9	7.5	13.5	10.2	1000	2000	700	0.7	37.0	2000							PME 271Y422M	
0.0033	4.1	8.2	13.5	10.2	1000	2000	600	0.9	30.0	2000							PME 271Y433M	
0.0047	5.1	10.5	13.5	10.2	800	1600	600	1.2	24.0	2000							PME 271Y447M	

↗) Also available with insulated leads (code S in ordering information).

## Article table PME 271

C <sub>R</sub> μF	Max dimensions in mm				Quantity per package				Weight g	f <sub>0</sub> MHz	Max dU/dt V/μs	Approvals						Article code 1 st block
	B	H	L	p	R30 pcs	R06 pcs	reel taped pcs	Ø				Z	D	L	VDE	SEV	ÖVE	
<b>Class Y2 250 VAC. + 100 °C PME 271 Y (continued)</b>																		
0.0068	5.2	10.5	18.5	15.2	500	1000	600	1.7	18.5	1400								*) PME 271Y468M
0.01	5.2	10.5	18.5	15.2	500	1000	600	1.7	15.5	1400								*) PME 271Y510M
0.015	5.5	11.1	18.5	15.2	500	1000	500	2.0	13.0	1400								*) PME 271Y515M
0.022	7.3	13.0	19.0	15.2	400	800	400	3.0	9.8	1400								*) PME 271Y522M
0.033	7.6	14.0	24.0	20.3	250	1500	250	4.0	7.0	1000								*) PME 271Y533M
0.033	8.0	17.0	27.0	22.5	200	1200	250	5.5	6.8	600								PME 271YD5330M
0.047	9.0	15.0	24.0	20.3	200	1200	250	5.0	6.0	1000								*) PME 271Y547M
0.047	8.0	17.0	27.0	22.5	200	1200	250	5.5	5.8	600								PME 271YD5470M
0.068	11.3	16.5	24.0	20.3	150	1000	180	7.0	4.6	600								*) PME 271Y568M
0.068	10.0	19.0	27.0	22.5	150	1000	250	7.5	4.8	600								PME 271YD5680M
0.1	12.1	19.0	30.5	25.4	100	800		10.0	3.9	400								PME 271Y610M
0.1	12.0	22.0	27.0	22.5	100	800		10.0	3.8	400								PME 271YD6100M

\*) Also available with insulated leads (code S in ordering info.).

## Approvals/Reference documents

Country	Specification	Approval reference
S = Sweden	EN 132400*	9518142 (X2), 9509089 (X1), 9509092 (Y2)
N = Norway	EN 132400*	P95102355 (X2), P95101254 (X1) P95101244 (Y2)
D = Denmark	EN 132400*	304080 (X2), 303659 (X1), 303656 (Y2)
FI = Finland	EN 132400*	183356-01 (X2), 181587-01 (X1), 181622-01 (Y2)
VDE= Germany	EN 132400*	89756 (X2), 89757 (X1), 89750 (Y2)
SEV= Switzerland	EN 132400*	95.7 70724.01 (X2), 95.7 70723.01(X1) 95.7 70720.01 (Y2)
ÖVE= Austria	ÖVE-F22/1974	0683-000-11 (X2), 0683-032-03 (X1), 0683-041-00 (Y2)
IMQ= Italy	EN 132400*	V 0060 (X2), V 1952 (X1), V 0061 (Y2)
UL = USA	UL 478, UL 1283 (U <sub>R</sub> =250 VAC) UL 1283 UL 1414 (U <sub>R</sub> =250 VAC)	E 100117 (X1) E 100117 (Y2) E 73869 (X2)
CSA= Canada	C 22.2 No. 8-M 1986 C 22.2 No. 1-M 1990 (U <sub>R</sub> =250 VAC)	53108 (Y2) 53108 (X2)

\*Approvals according to EN 132400 (IEC 384-14, 2nd edition, 1993). Old national approvals, replaced by EN 132400, still apply. Detailed information on request.

## Ordering information

### Article code

1st block	2nd block
See article table Pos. 11, capacitance tolerance code: M = ± 20%, K = ± 10%	Options: Short leads: e.g. 6 mm, add R06 in pos. 12–14. Insulated leads: add S in pos. 12. Reel taped: add T0 or T1 in pos. 12–13. (= lead length 19 mm).
<b>P M E 2 7 1 Y 4 6 8 M</b>	<b>R 0 6</b>
1 2 3 4 5 6 7 8 9 10 11	12 13 14 15 16 17 18 19 20

## Marking

- RIFA
- RIFA article code (7 pos.)
- Rated capacitance
- Rated voltage
- X2, X1 or Y2
- SH, for self-healing
- Climatic category according to IEC 68-1, appendix A
- Passive flammability class
- Approval marks
- Manufacturing code (year, month)

## Packing

Capacitors in standard design (lead length 30 mm) and with L < 24 mm and lead length 5 or 6 mm are packed bulk in a box with dimensions 230 × 155 × 72 mm. Quantity/package as per article table.

Capacitors with L = 24 mm and lead length 5 or 6 mm are packed on trays piled in a box with dimensions 295 × 255 × 180 mm. Quantity/package as per article table.

Reels with taped capacitors are packed 10 in a box with dimension 600 × 400 × 400 mm.