# PME271

## • EMI suppressor, classes X1, X2 and Y2, metallized paper

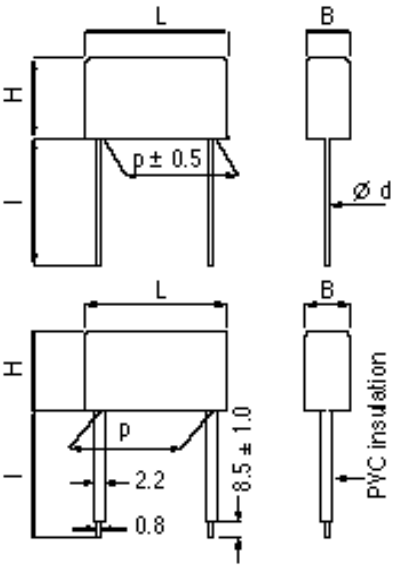
- The highest possible safety regarding active and passive flammability.
- Self-extinguishing UL 94V-0 encapsulation material.
- Excellent self-healing properties. Ensures long life even when subjected to frequent overvoltages.
- Good resistance to ionisation due to impregnated dielectric.
- High dU/dt capability.
- 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.

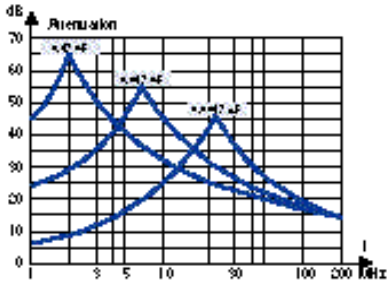
### CONSTRUCTION

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




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 +5/-0 mm uninsulated (code R30)
option 30 +1/-0 mm insulated (code S)
option short leads, tolerance +0/-1 mm
(standard 6 mm, code R06)
Other lead lengths on request




Suppression versus frequency. Typical values.

### TECHNICAL DATA

| | X2<br>PME271M | X1<br>PME271E | Y2<br>PME271Y | Y2<br>PME271YA-E |
|---|---|---|---|---|
| **Rated voltage VAC, 50/60Hz** | 275 | 300 | 250 | 300 |
| **Capacitance range µF** | 0.001–0.6 | 0.01–0.22 | 0.001–0.1 | 0.001–0.15 |
| **Temperature range °C** | –40/+110 | –40/+110 | –40/+100 | –40/+115 |
| **Climatic category IEC** | 40/110/56/B | 40/110/56/B | 40/100/56/B | 40/115/56/B |

**Capacitance tolerance** ± 10% for C > 0.1 µF, code K. ± 20% for C ≤ 0.1 µF, code M

**Approvals** S, N, D, FI, VDE, SEV, IMQ, UL, CSA

**Dissipation factor** ≤ 1.3 % at 1 kHz

**Insulation resistance** C ≤ 0.33 µF ≥ 12000 MΩ
C > 0.33 µF ≥ 4000 s
Measured at 500 VDC after 60 s, +23°C

**In DC applications** Recommended voltage:
PME271 M, E ≤ 630 VDC
PME271 Y ≤ 1000 VDC

**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:
2150 VDC: PME271M 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

| | | | | |
|---|---|---|---|---|
| **Vibration** | IEC 68-2-6, Test Fc | 3 directions at 2 hour each,<br>10 – 500 Hz at 0.75 mm or 98 m/s² | No visible damage, No open or short circuit | |
| **Bump** | IEC 68-2-29, Test Eb | 4000 bumps at 390 m/s² | No visible damage, No open or short circuit | |
| **Solderability** | IEC 68-2-20, Test Ta | Solder globule method | Wetting time | for d ≤ 0.8 < 1 s<br>for d > 0.8 < 1.5 s |
| **Active flammability** | EN 132400 | | | |
| **Passive flammability** | IEC 384-14 (1993), EN 132400 | | | |
| **Humidity** | IEC 68-2-3, Test Ca | +40°C and 90 – 95% R.H. | 56 days | |

## ARTICLE TABLE

| Capacitance µF | Max dimensions in mm B | H | L | p | Quantity per package R30 pcs | R06 pcs | reel taped pcs | Weight g | $f_o$ MHz | Max dU/dt V/µs | Approvals S | N | D | FI | VDE | SEV | IMQ | UL | CSA | | Article code 1 st block |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CLASS X2 275 VAC +110 °C PME271 M** | | | | | | | | | | | | | | | | | | | | | |
| 0.0010 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 53.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | | PME271M410M |
| 0.0015 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 44.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | | PME271M415M |
| 0.0022 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 37.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | | PME271M422M |
| 0.0033 | 4.1 | 8.2 | 13.5 | 10.2 | 1000 | 2000 | 600 | 0.9 | 30.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | | PME271M433M |
| 0.0047 | 5.1 | 10.5 | 13.5 | 10.2 | 800 | 1600 | 600 | 1.2 | 24.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | | PME271M447M |
| 0.0068 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 18.5 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271M468M |
| 0.010 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 15.5 | 1200 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M510M |
| 0.015 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 13.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M515M |
| 0.022 | 6.0 | 12.5 | 18.5 | 15.2 | 400 | 800 | 400 | 3.0 | 10.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M522M |
| 0.033 | 6.0 | 12.5 | 18.5 | 15.2 | 400 | 800 | 400 | 3.0 | 8.4 | 1200 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M533M |
| 0.047 | 6.0 | 12.5 | 18.5 | 15.2 | 400 | 800 | 400 | 3.0 | 7.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M547M |
| 0.068 | 7.8 | 13.5 | 18.5 | 15.2 | 400 | 800 | 400 | 3.3 | 5.6 | 1200 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M568M |
| 0.10 | 8.5 | 14.1 | 18.5 | 15.2 | 300 | 600 | 360 | 3.8 | 4.3 | 1200 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271MB6100M |
| 0.10 | 7.6 | 14.0 | 24.0 | 20.3 | 250 | 1500 | 250 | 4.0 | 4.1 | 600 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M610M |
| 0.15 | 9.0 | 15.0 | 24.0 | 20.3 | 200 | 1200 | 250 | 5.0 | 3.4 | 600 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M615K |
| 0.22 | 11.3 | 16.5 | 24.0 | 20.3 | 150 | 1000 | 180 | 7.0 | 2.7 | 600 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271M622K |
| 0.10 | 8.0 | 17.0 | 27.0 | 22.5 | 200 | 1200 | 250 | 5.5 | 3.9 | 600 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271MD6100M |
| 0.15 | 8.0 | 17.0 | 27.0 | 22.5 | 200 | 1200 | 250 | 5.5 | 3.3 | 600 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271MD6150K |
| 0.22 | 10.0 | 19.0 | 27.0 | 22.5 | 150 | 1000 | 250 | 7.5 | 2.6 | 600 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271MD6220K |
| 0.27 | 12.0 | 22.0 | 27.0 | 22.5 | 100 | 800 | | 10.0 | 2.3 | 400 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271MD6270K |
| 0.33 | 12.0 | 22.0 | 27.0 | 22.5 | 100 | 800 | | 10.0 | 2.1 | 400 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271MD6330K |
| 0.27 | 10.5 | 17.3 | 30.5 | 25.4 | 100 | 1000 | | 8.5 | 2.4 | 400 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271M627K |
| 0.33 | 12.1 | 19.0 | 30.5 | 25.4 | 100 | 800 | | 10.0 | 2.1 | 400 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271M633K |
| 0.47 | 15.3 | 22.0 | 30.5 | 25.4 | 75 | 600 | | 15.0 | 1.8 | 400 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271M647K |
| 0.60 | 15.3 | 22.0 | 30.5 | 25.4 | 75 | 600 | | 15.0 | 1.6 | 400 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271M660K |
| **CLASS X1 300 VAC +110 °C PME271 E** | | | | | | | | | | | | | | | | | | | | | |
| 0.010 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 15.5 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271E510M |
| 0.015 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 13.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271E515M |
| 0.022 | 7.3 | 13.0 | 19.0 | 15.2 | 400 | 800 | 400 | 3.0 | 9.8 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271E522M |
| 0.033 | 7.3 | 13.0 | 19.0 | 15.2 | 400 | 800 | 400 | 3.0 | 7.0 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271E533M |
| 0.047 | 8.5 | 14.3 | 18.5 | 15.2 | 300 | 600 | 400 | 3.8 | 6.4 | 1200 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271E547M |
| 0.068 | 7.6 | 14.0 | 24.0 | 20.3 | 250 | 1500 | 250 | 4.5 | 5.2 | 600 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271E568M |
| 0.10 | 11.3 | 16.5 | 24.0 | 20.3 | 150 | 1000 | 180 | 7.0 | 4.1 | 600 | √ | √ | √ | √ | √ | √ | √ | | | *) | PME271E610M |
| 0.068 | 8.0 | 17.0 | 27.0 | 22.5 | 200 | 1200 | 250 | 5.5 | 4.7 | 600 | √ | √ | √ | √ | √ | √ | √ | | | | PME271ED5680M |
| 0.10 | 8.0 | 17.0 | 27.0 | 22.5 | 200 | 1200 | 250 | 5.5 | 4.1 | 600 | √ | √ | √ | √ | √ | √ | √ | | | | PME271ED6100M |
| 0.15 | 10.0 | 19.0 | 27.0 | 22.5 | 150 | 1000 | 250 | 5.5 | 3.2 | 600 | √ | √ | √ | √ | √ | √ | √ | | | | PME271ED6150K |
| 0.22 | 12.0 | 22.0 | 27.0 | 22.5 | 100 | 800 | | 5.5 | 2.5 | 600 | √ | √ | √ | √ | √ | √ | √ | | | | PME271ED6220K |
| 0.15 | 10.6 | 16.1 | 30.5 | 25.4 | 150 | 1000 | | 8.6 | 3.3 | 400 | √ | √ | √ | √ | √ | √ | √ | | | | PME271E615K |
| 0.22 | 12.1 | 19.0 | 30.5 | 25.4 | 100 | 800 | | 10.0 | 2.6 | 400 | √ | √ | √ | √ | √ | √ | √ | | | | PME271E622K |

## ARTICLE TABLE

| Capacitance µF | Max dimensions in mm B | H | L | p | Quantity per package R30 pcs | R06 pcs | reel taped pcs | Weight g | $f_o$ MHz | Max dU/dt V/µs | Approvals S | N | D | FI | VDE | SEV | IMQ | UL | CSA | | Article code 1 st block |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CLASS Y2 250 VAC +100 °C PME271 Y** | | | | | | | | | | | | | | | | | | | | | |
| 0.0010 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 53.0 | 2000 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271Y410M |
| 0.0015 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 44.0 | 2000 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271Y415M |
| 0.0022 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 37.0 | 2000 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271Y422M |
| 0.0033 | 4.1 | 8.2 | 13.5 | 10.2 | 1000 | 2000 | 600 | 0.9 | 30.0 | 2000 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271Y433M |
| 0.0047 | 5.1 | 10.5 | 13.5 | 10.2 | 800 | 1600 | 600 | 1.2 | 24.0 | 2000 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271Y447M |
| 0.0068 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 18.5 | 1400 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271Y468M |
| 0.010 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 15.5 | 1400 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271Y510M |
| 0.015 | 5.5 | 11.1 | 18.5 | 15.2 | 500 | 1000 | 500 | 2.0 | 13.0 | 1400 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271Y515M |
| 0.022 | 7.3 | 13.0 | 19.0 | 15.2 | 400 | 800 | 400 | 3.0 | 9.8 | 1400 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271Y522M |
| 0.033 | 7.6 | 14.0 | 24.0 | 20.3 | 250 | 1500 | 250 | 4.0 | 7.0 | 1000 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271Y533M |
| 0.047 | 9.0 | 15.0 | 24.0 | 20.3 | 200 | 1200 | 250 | 5.0 | 6.0 | 1000 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271Y547M |
| 0.068 | 11.3 | 16.5 | 24.0 | 20.3 | 150 | 1000 | 180 | 7.0 | 4.6 | 600 | √ | √ | √ | √ | √ | √ | √ | √ | | *) | PME271Y568M |
| 0.10 | 12.1 | 19.0 | 30.5 | 25.4 | 100 | 800 | | 10.0 | 3.9 | 400 | √ | √ | √ | √ | √ | √ | √ | √ | | | PME271Y610M |
| **CLASS Y2 300 VAC + 115 °C PME271 Y** | | | | | | | | | | | | | | | | | | | | | |
| 0.0010 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 53.0 | 2000 | √ | | | P | | | P | P | | | PME271YA4100M |
| 0.0015 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 44.0 | 2000 | √ | | | P | | | P | P | | | PME271YA4150M |
| 0.0022 | 3.9 | 7.5 | 13.5 | 10.2 | 1000 | 2000 | 700 | 0.7 | 37.0 | 2000 | √ | | | P | | | P | P | | | PME271YA4220M |
| 0.0025 | 4.1 | 8.2 | 13.5 | 10.2 | 1000 | 2000 | 600 | 0.9 | 35.0 | 2000 | √ | | | P | | | P | P | | | PME271YA4250M |
| 0.0033 | 4.1 | 8.2 | 13.5 | 10.2 | 1000 | 2000 | 600 | 0.9 | 30.0 | 2000 | √ | | | P | | | P | P | | | PME271YA4330M |
| 0.0047 | 5.1 | 10.5 | 13.5 | 10.2 | 800 | 1600 | 600 | 1.2 | 24.0 | 2000 | √ | | | P | | | P | P | | | PME271YA4470M |
| 0.0068 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 18.5 | 1400 | √ | | | P | | | P | P | | *) | PME271YB4680M |
| 0.010 | 5.2 | 10.5 | 18.5 | 15.2 | 500 | 1000 | 600 | 1.7 | 15.5 | 1400 | √ | | | P | | | P | P | | *) | PME271YB5100M |
| 0.015 | 5.5 | 11.0 | 18.5 | 15.2 | 500 | 1000 | 500 | 2.0 | 13.0 | 1400 | √ | | | P | | | P | P | | *) | PME271YB5150M |
| 0.022 | 7.3 | 13.0 | 18.5 | 15.2 | 400 | 800 | 400 | 3.0 | 9.8 | 1400 | √ | | | P | | | P | P | | *) | PME271YB5220M |
| 0.033 | 7.6 | 14.0 | 24.0 | 20.3 | 250 | 1500 | 250 | 4.0 | 7.0 | 1000 | √ | | | P | | | P | P | | *) | PME271YC5330M |
| 0.047 | 9.0 | 15.0 | 24.0 | 20.3 | 200 | 1200 | 250 | 5.0 | 6.0 | 1000 | √ | | | P | | | P | P | | *) | PME271YC5470M |
| 0.068 | 11.3 | 16.5 | 24.0 | 20.3 | 150 | 1000 | 180 | 7.0 | 4.6 | 1000 | √ | | | P | | | P | P | | *) | PME271YC5680M |
| 0.033 | 8.0 | 17.0 | 27.0 | 22.5 | 200 | 1200 | 250 | 5.5 | 6.8 | 600 | √ | | | P | | | P | P | | | PME271YD5330M |
| 0.047 | 8.0 | 17.0 | 27.0 | 22.5 | 200 | 1200 | 250 | 5.5 | 5.8 | 600 | √ | | | P | | | P | P | | | PME271YD5470M |
| 0.068 | 10.0 | 19.0 | 27.0 | 22.5 | 150 | 1000 | 250 | 7.5 | 4.8 | 600 | √ | | | P | | | P | P | | | PME271YD5680M |
| 0.10 | 12.0 | 22.0 | 27.0 | 22.5 | 100 | 800 | | 10.0 | 3.8 | 600 | √ | | | P | | | P | P | | | PME271YD6100M |
| 0.10 | 12.1 | 19.0 | 30.5 | 25.4 | 100 | 800 | | 10.0 | 3.9 | 400 | √ | | | P | | | P | P | | | PME271YE6100M |
| 0.15 | 15.3 | 22.0 | 30.5 | 25.4 | 75 | 600 | | 15.0 | 3.1 | 400 | √ | | | P | | | P | P | | | PME271YE6150K |

*) Also available with insulated leads (code S in ordering info.)
P = Approvals pending

## APPROVALS/REFERENCE DOCUMENTS

| Country | Specification | Approval reference |
|---|---|---|
| S = Sweden | EN 132400 | 9834227-01 (X2), 9821105-01 (X1), 9509092 (Y2, 250 VAC), 9834228-01 (Y2, 300 VAC) |
| N* = Norway | EN 132400 | P95102355 (X2), P95101254 (X1) P95101244 (Y2, 250 VAC) |
| D = Denmark | EN 132400 | 308048 (X2), 307886 (X1), 303656 (Y2, 250 VAC), Approval for Y2, 300 VAC pending |
| FI* = Finland | EN 132400 | 183356-01 (X2), 181587-01 (X1), 181622-01 (Y2, 250 VAC) |
| VDE*= Germany | EN 132400 | 89756 (X2), 89757 (X1), 89750 (Y2, 250 VAC) |
| SEV*= Switzerland | EN 132400 | 95.7 70724.01 (X2), 95.7 70723.01(X1) 95.7 70720.01 (Y2, 250 VAC) |
| IMQ*= Italy | EN 132400 | V 0060 (X2), V 1952 (X1), V 0061 (Y2, 250 VAC) |
| UL* = USA | UL 1283 ($U_R$=250 VAC)<br>UL 1414 ($U_R$=250 VAC) | E 100117 (X1 and Y2, 250 VAC)<br>E 73869 (X2) |
| CSA*= Canada | C 22.2 No. 8-M 1986<br>C 22.2 No. 1-M 1990<br>($U_R$=250 VAC) | 53108 (Y2, 250 VAC)<br>53108 (X2) |

* Approval references apply to +100 °C for X1, X2 and 250 VAC +100 °C for Y2. Approvals for +110 °C for X1, X2 and 300 VAC +115 °C for Y2 are pending.

## ORDERING INFORMATION

See article table and page 21.
Options: Short leads: e.g. 6 mm, add R06. Insulated leads: add S.
Reel taped: add T0 or T1. (= lead length 19 mm).
Examples:
PME271Y468MR06
PME271MD6100MR06

## MARKING

- RIFA
- RIFA article code
- 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 245 x 145 x 80 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 300 x 260 x 195 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. 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.