PME271M EMI Capacitors Class X2, 275VAC

Construction

Multilayer metallized paper, encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94V-0.

Benefits

- Approvals: ENEC, UL, cUL
- Rated Voltage: 275VAC 50/60Hz
- Capacitance Range: 0.001 - 0.6µF
- Pitch: 10.2 - 25.4 mm
- Capacitance Tolerance: ± 20% standard, ± 10% option, ± 5% on request
- Climatic category 40/110/56, IEC 60068-1
- Tape and reel in accordance with IEC 60286-2
- RoHS compliant and lead-free terminations
- Operating temperature range of -40˚C to +110˚C
- 100% screening factory test at 2150VDC
- The highest possible safety regarding active and passive flammability
- Excellent self-healing properties ensure long life even when subjected to frequent overvoltages
- Good resistance to ionization due to impregnated dielectric
- High dU/dt capability
- The impregnated paper ensures excellent stability and outstanding reliability properties, especially in applications with continuous operation

Applications

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

Ordering Information

PME271	M	(B)	510(0)	M	R30
Series	Rated Voltage	Pitch	Capacitance Code (pF)	Capacitance Tolerance	Packing Option and Leadform
X2, Metallized Polyester	M = 275VAC N = 660VAC	B = 15.0 D = 22.5 F = 27.5 R = 37.5	Digits 2-4(3) indicates the first three digits of the capacitance value. First digit indicates the total number of digits in the capacitance value.	J = ±5% K = ±10% M = ±20%	see Ordering Options Table

Ordering Options Table

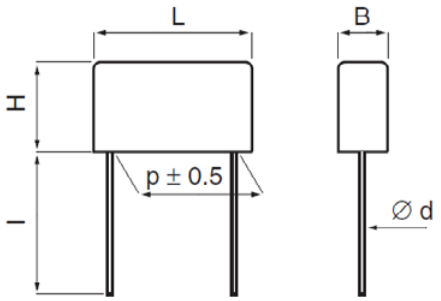
Standard Packaging Style	Lead Length (mm)	Ordering Code
Ammo Pack		R17TA
Tape & Reel 360 mm		R17T0
Tape & Reel 500 mm		R17T1
Loose, Short Leads	$4^{+0/-1}$	R04
Loose, Long Leads	$17^{+0/-1}$	R17
Loose, Long Leads	30^{+5}	R30
Other options available on request		

Dimension Table

Pitch	Outer Dimension		
	B	H	L
10.2	3.9	7.5	13.5
10.2	4.1	8.2	13.5
10.2	5.1	10.5	13.5
15.2	5.2	10.5	18.5
15.2	6	12.5	18.5
15.2	7.3	13	18.5
15.2	7.8	13.5	18.5
15.2	8.5	14.3	18.5
20.3	7.6	14	24
20.3	9	15	24
20.3	11.3	16.5	24
22.5	8	17	27
22.5	10	19	27
22.5	12	22	27
25.4	10.5	17	30.5
25.4	10.5	17.3	30.5
25.4	12.1	19	30.5
25.4	15.3	22	30.5

Leadspacing Table

p	d	std l	max l
10.2 ± 0.4	0.6	30	30
15.2 ± 0.4	0.8	30	30
20.3 ± 0.4	0.8	30	30
22.5 ± 0.4	0.8	30	30
25.4 ± 0.4	1.0	30	30
Tolerance in Lead Length		< 30mm +0 / -1	
		30mm +5 / -0	



Technical Data

Rated Voltage	275VAC 50/60Hz	
Capacitance Range	0.001 - 0.6µF	
Capacitance Tolerance	± 20% standard, ± 10% option, ± 5% on request	
Temperature Range	-40 to +110°C	
Climatic Category	40/110/56	
Approvals	ENEC, UL, cUL	
Dissipation Factor	Maximum Values at +23°C	
	1 kHz	1.3%
Test Voltage Between Terminals	The 100% screening factory test is carried out at 2150VDC. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test. It is not permitted to repeat this test as there is a risk to damage the capacitor. KEMET is not liable in such case for any failures.	
Insulation Resistance	C ≤ 0.33 µF: ≥ 12 000 MΩ	
	C > 0.33 µF : ≥ 4 000 s	
In DC applications	Recommended Voltage ≤ 630 VDC	

Environmental Test Data

Test	IEC Publication	Procedure
Endurance	EN/IEC 60384-14	1.25 x UR VAC 50Hz, once every hour increase to 1000 VAC for 0.1 s, 1000 h at upper rated temperature
Vibration	IEC 60068–2–6 Test Fc	3 directions at 2 hours each 10 - 55 Hz at 0.75 mm or 98m/s^2
Bump	IEC 60068-2-29 Test Eb	1000 bumps at 390 m/s^2
Change of Temperature	IEC 60068-2-14 Test Na	Upper and lower rated temperature 5 cycles
Active Flammability	IEC 60384-14	UR + 20 surge pulses at 2.5 kV (pulse every 5 s)
Passive Flammability	IEC 60384-14	IEC 60384-1, IEC 60695-11-5 Needle Flame Test
Damp Heat Steady State	IEC 60068-2-78 Test Cab	+40°C and 90 - 95% R.H., 56 days

Environmental Compliance

All KEMET EMI capacitors are RoHS compliant and Halogen Free

RoHS Compliant

Halogen Free

Approvals

Mark	Specification	File Number
	EN/IEC 60384-14	SE/0140-16A
	UL 1414 (up to 1µF, 85°C, 250VAC)	E73869
	CSA - C22.2 No. 1 (up to 1µF, 85°C, 250VAC)	E73869
	UL 1283 (310VAC)	E100117

Table 1 – Ratings & Part Number Reference

Lead Space	Cap Value (µF)	B (mm)	H (mm)	L (mm)		dV/dt (V/µsec)	F Article Code	Part Number
10.2	0.001	3.9	7.5	13.5		1200	P276HE102M275A	PME271M410MR30
10.2	0.0015	3.9	7.5	13.5		1200	P276HE152M275A	PME271M415MR30
10.2	0.0022	3.9	7.5	13.5		1200	P276HE222M275A	PME271M422MR30
10.2	0.0033	4.1	8.2	13.5		1200	P276HH332M275A	PME271M433MR30
10.2	0.0047	5.1	10.5	13.5		1200	P276HL472M275A	PME271M447MR30
10.2	0.0068	5.1	10.5	13.5		1200	P276HL682M275A	PME271MA4680MR30
15.2	0.0068	5.2	10.5	18.5		1200	P276QE682M275A	PME271M468MR30
15.2	10	5.2	10.5	18.5		1200	P276QE103M275A	PME271M510MR30
15.2	15	5.2	10.5	18.5		1200	P276QE153M275A	PME271M515MR30
15.2	22	6	12.5	18.5		1200	P276QL223M275A	PME271M522MR30
15.2	33	6	12.5	18.5		1200	P276QL333M275A	PME271M533MR30
15.2	47	6	12.5	18.5		1200	P276QL473M275A	PME271M547MR30
15.2	68	7.8	13.5	18.5		1200	P276QP683M275A	PME271M568MR30
15.2	0.1	8.5	14.3	18.5		1200	P276QS104M275A	PME271MB6100MR30
20.3	0.1	7.6	14	24		600	P276CE104M275A	PME271M610MR30
20.3	0.15	9	15	24		600	P276CJ154K275A	PME271M615KR30
20.3	0.22	11.3	16.5	24		600	P276CP224K275A	PME271M622KR30
22.5	0.1	8	17	27		600	P276SJ104M275A	PME271MD6100MR30
22.5	0.15	8	17	27		600	P276SJ154K275A	PME271MD6150KR30
22.5	0.22	10	19	27		600	P276SP224K275A	PME271MD6220KR30
22.5	0.27	12	22	27		400	P276SU274K275A	PME271MD6270KR30
22.5	0.33	12	22	27		400	P276SU334K275A	PME271MD6330KR30
25.4	0.27	10.5	17.3	30.5		400	P276EG274K275A	PME271M627KR30
25.4	0.33	12.1	19	30.5		400	P276EJ334K275A	PME271M633KR30
25.4	0.47	15.3	22	30.5		400	P276EL474K275A	PME271M647KR30
25.4	0.6	15.3	22	30.5		400	P276EL604K275A	PME271M660KR30
Lead Space	**Cap Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**		**dV/dt (V/µsec)**	**F Article Code**	**Part Number**

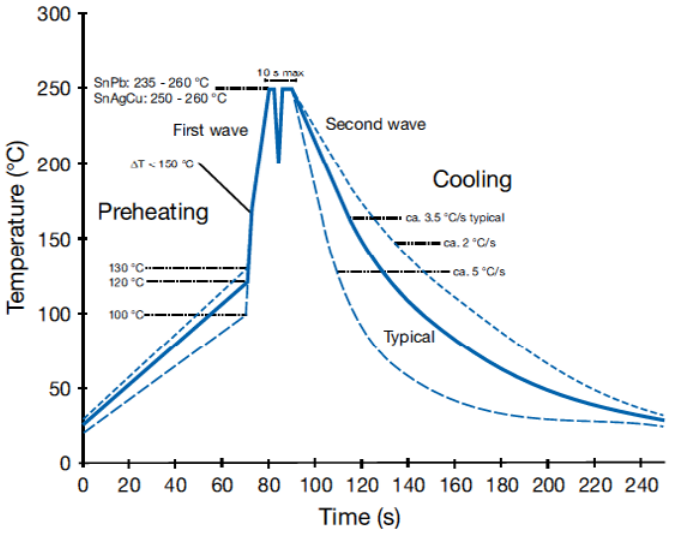
Other part number options:

(1) Where the 14th character equal to, J (±5% tolerance), K (±10% tolerance) and M (±20% tolerance).

(2) Refer to Ordering Options Table for Ordering Code.

Soldering Process

The implementation of RoHS Directive has forced to select SnAuCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183 ºC for SnPb eutectic alloy to 217 – 221 ºC for the new alloys. This means that the heat stress to components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. The Polypropylene Capacitors are especially sensitive to heat (melting point of Polypropylene is 160 – 170 ºC). The wave soldering can be destructive especially for mechanically small Polypropylene Capacitors (lead spacings 5-10 mm), and great care has to be taken when soldering them. The recommended solder profiles from KEMET should be used. In case of doubt, KEMET should be consulted. In general the wave soldering curve from IEC Publication 61760- 1 edition 2 gives a good guideline for successful soldering.



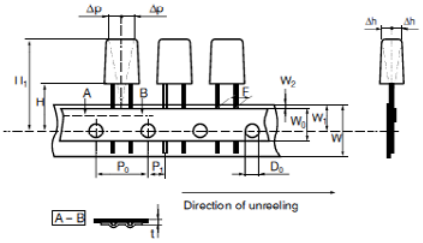
Marking

- Manufacturer's logo
- Article series
- Rated capacitance
- Capacitance tolerance
- Rated voltage
- Capacitor class
- Approval marks
- Manufacturing date code
- IEC climatic category
- Passive flammability class
- Manufacturing date code
- Manufacturing plant

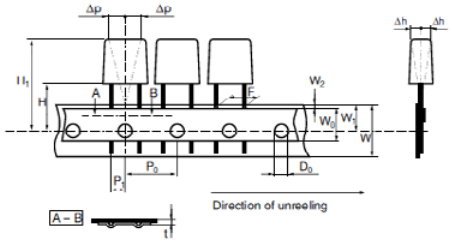
Packaging

The taping is carried out in accordance with IEC 60286-2.

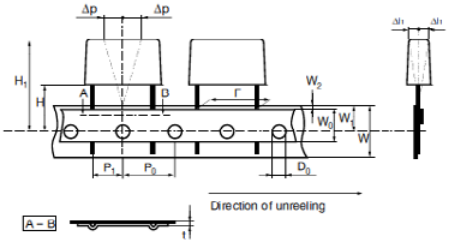
Lead spacing 5 mm



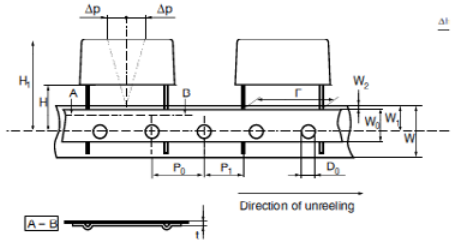
Lead spacing 7.5 mm



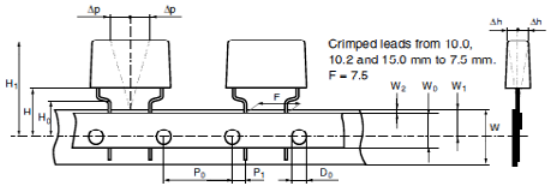
Lead spacing 10 and 15 mm



Lead spacing 22.5 and 27.5 mm



Crimped leads



Taping Specification

Dimensions in mm						Standard IEC 60286-2
Lead spacing, (Tol. +0.6/-0.1)	F	5.0/7.5	7.5 Crimped Leads	10.0/15.0	22.5/27.5	F
Carrier tape width, ±0.5	W	18	18	18	18	18 (+1.0/-0.5)
Hold-down tape width, ±0.3	W_0	9	12	12	12	
Position of sprocket hole, ±0.5	W_1	9	9	9	9	9 (+0.75/-0.5)
Distance between tapes, max.	W_2	3	3	3	3	3
Sprocket hole diameter, ±0.2	D_0	4	4	4	4	4
Feed hole pitch, ±0.3	P_0 [1)]	12.7	15/12.7	12.7	12.7	12.7/15
Distance lead – feed hole, ±0.7	P_1	3.85/3.75	3.75	7.7/5.2	5.3	P_1
Max deviation tape – plane	Δp	1.3	1.3	1.3	1.3	1.3
Max lateral deviation	Δh	2	2	2	2	2
Total thickness, ±0.2	t	0.7	0.7	0.7	0.9 max	0.9 max
Sprocket hole/cap body	H [2)]	18.5 ±0.5 16.5 ±0.5		18.5 ±0.5 16.5 ±0.5	18.5 ±0.5	18.0 (+2/-0)
Sprocket hole/crimped leads	H_0 [2)]		16 ±0.5 18 ±0.5			16 ±0.5
Sprocket hole/top of cap body, max	H_1 [3)]	32/31 max	40 max	43 max	58	58 max

[1)] *Cumulative pitch error*

[2)] *Alternatives for different insertion machines*

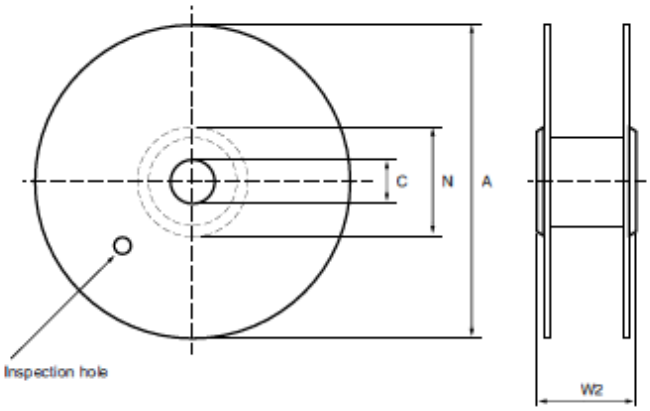
[3)] *Depending on case size*

Note: Crimped leads available on request

Reel Specification

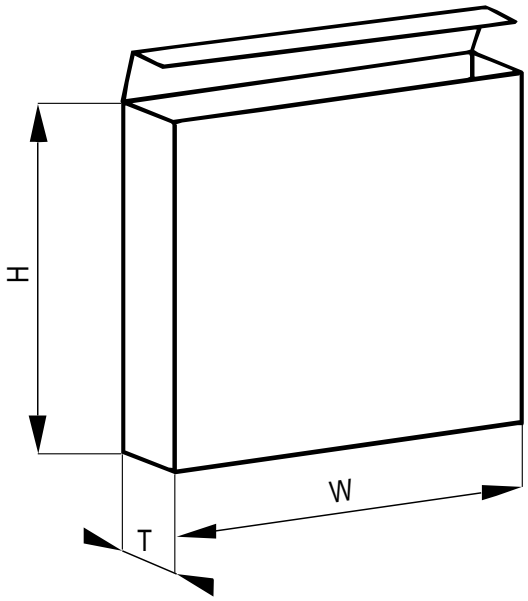
Dimensions in mm			Tolerance
Reel diameter	A	360/500	max
Hub diameter	N	80	min
Arbor hole	C	30	±1
Total reel width measured at hub	W2	58	max

The standard packing for lead space ≤15 mm is 360 mm reel and for lead space >15 mm 500 mm reel.



Ammo Pack Specification

Dimensions in mm		Lead spacing, mm	
		5, 7.5, 10	15, 22.5, 27.5, 37.5
Height	H	330	(135 or 200 for CQ depending on capacitance value)
Width	W	330	(335 for CQ)
Thickness	T	50	



The Manufacturing Date Code Y Z, according to IEC 60062									
where Y = year, Z = month									
Year	Code	Year	Code	Year	Code	Month	Code	Month	Code
1991	B	2001	N	2011	B	Jan	1	July	7
1992	C	2002	P	2012	C	Febr	2	Aug	8
1993	D	2003	R	2013	D	March	3	Sept	9
1994	E	2004	S	2014	E	April	4	Oct	O
1995	F	2005	T	2015	F	May	5	Nov	N
1996	H	2006	U	2016	H	June	6	Dec	D
1997	J	2007	V	2017	J				
1998	K	2008	W	2018	K				
1999	L	2009	X	2019	L				
2000	M	2010	A	2020	M				

Other KEMET Resources

Tools	
Resource	Location
Configure A Part: CapEdge	http://capacitoredge.kemet.com
SPICE & FIT Software	http://www.kemet.com/spice
Search Our FAQs: KnowledgeEdge	http://www.kemet.com/keask

Product Information	
Resource	Location
Products	http://www.kemet.com/products
Technical Resources (Including Soldering Techniques)	http://www.kemet.com/technicalpapers
RoHS Statement	http://www.kemet.com/rohs
Quality Documents	http://www.kemet.com/qualitydocuments

Product Request	
Resource	Location
Sample Request	http://www.kemet.com/sample
Engineering Kit Request	http://www.kemet.com/kits

Contact	
Resource	Location
Website	www.kemet.com
Contact Us	http://www.kemet.com/contact
Investor Relations	http://www.kemet.com/ir
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Although we design and manufacture our products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.

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Tel: 44-1236-434455

Färjestaden, Sweden
Tel: 46-485-563934

Espoo, Finland
Tel: 358-9-5406-5000

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Beijing, China
Tel: 86-10-5829-1711

Shanghai, China
Tel: 86-21-6447-0707

Taipei, Taiwan
Tel: 886-2-27528585

Southeast Asia
Singapore
Tel: 65-6586-1900

Penang, Malaysia
Tel: 60-4-6430200

Bangalore, India
Tel: 91-806-53-76817

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