PME271E EMI Capacitors Class X1, 300VAC

Construction

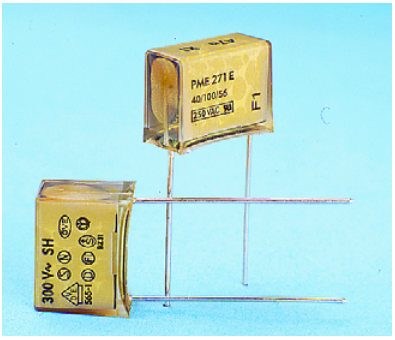
Multilayer metallized paper, encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94V-0.

Benefits

- Approvals: ENEC, UL
- Rated voltage: 300VAC 50/60Hz
- Capacitance range: 0.01µF-0.22µF
- Pitch: 10.2 mm-25.4 mm
- Capacitance tolerance: ± 20% for C > 0.1µF, ± 10% for C ≤ 0.1µF
- Climatic category: 40/110/56/B, IEC 60068-1
- Tape and reel packaging in accordance with IEC 60286-2
- RoHS compliance and lead-free terminations
- Operating temperature range of -40˚C to +110˚C
- 100% screening factory test at 2150VDC
- Highest possible safety regarding active and passive flammability
- Excellent self-healing properties which ensure long life even when subjected to frequent over-voltages
- Good resistance to ionization due to impregnated paper dielectric
- High dU/dt capability
- Impregnated paper ensures excellent stability and reliability properties, particularly in applications with continuous operation

Applications

For worldwide use as an electromagnetic interference suppressor in all X1 and across-the-line applications



Ordering Information

PME271	E	(D)	510(0)	M	R30
Series	Rated Voltage	Pitch	Capacitance Code (pF)	Capacitance Tolerance	Packing Option and Leadform
X1, Metallized Paper	E = 300VAC	B = 15.2 C = 20.3 D = 22.5 E = 25.4	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.	K = ±10% M = ±20%	see Ordering Options Table

Ordering Options Table

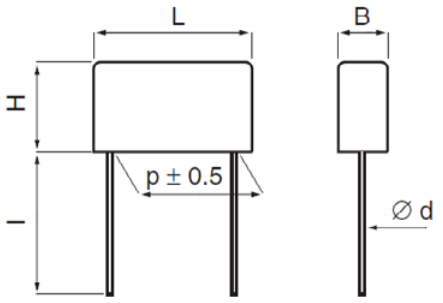
Standard Packaging Style	Lead Length (mm)	Ordering Code
Ammo Pack		R19TA
Reel 360 mm		R19T0
Reel Ø500mm		R19T1
Loose, short leads	$4^{+0/-1}$	R04
Loose, long leads	$17^{+0/-1}$	R17
Loose, long leads	30^{+5}	R30
Other options available on request		

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	300VAC 50/60Hz	
Capacitance Range	0.01µF-0.22µF	
Capacitance Tolerance	± 20% for C > 0.1µF, ± 10% for C ≤ 0.1µF	
Temperature Range	-40 to +110°C	
Climatic Category	40/110/56/B	
Approvals	ENEC, UL	
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	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 93% R.H., 56 days

Environmental Compliance

All KEMET EMI capacitors are RoHS compliant

RoHS Compliant

Approvals

Mark	Specification	File Number
	EN/IEC 60384-14	SE/0140-16A
	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
15.2	10	5.2	10.5	18.5		1200	P277QE103M300A	PME271E510MR30
15.2	15	5.2	10.5	18.5		1200	P277QE153M300A	PME271E515MR30
15.2	22	7.3	13	19		1200	P277QN223M300A	PME271E522MR30
15.2	33	7.3	13	19		1200	P277QN333M300A	PME271E533MR30
15.2	47	8.5	14.3	18.5		1200	P277QS473M300A	PME271E547MR30
20.3	68	7.6	14	24		600	P277CE683M300A	PME271E568MR30
20.3	0.1	11.3	16.5	24		600	P277CP104M300A	PME271E610MR30
22.5	68	8	17	27		600	P277SJ683M300A	PME271ED5680MR30
22.5	0.1	8	17	27		600	P277SJ104M300A	PME271ED6100MR30
22.5	0.15	10	19	27		600	P277SP154K300A	PME271ED6150KR30
22.5	0.22	12	22	27		600	P277SU224K300A	PME271ED6220KR30
25.4	0.15	10.6	16.1	30.5		400	P277EE154K300A	PME271E615KR30
25.4	0.22	12.1	19	30.5		400	P277EJ224K300A	PME271E622KR30
Lead Space	**Cap Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**		**dV/dt (V/µsec)**	**F Article Code**	**Part Number**

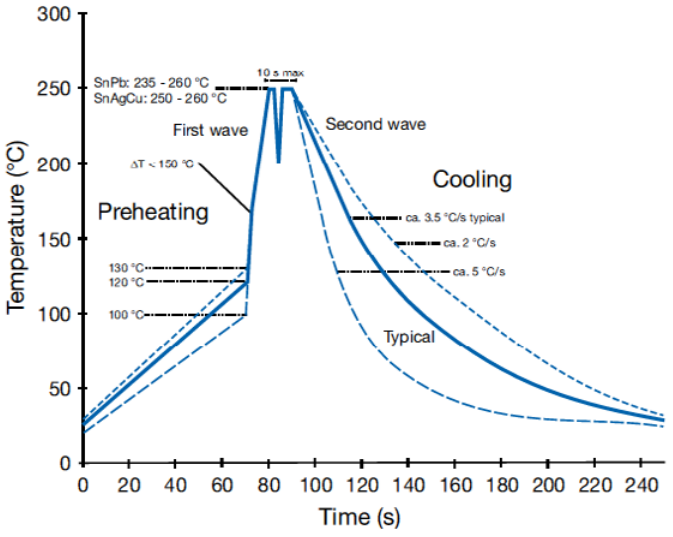
Other part number options:

(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.



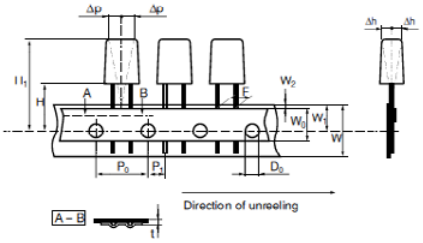
Marking

- 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

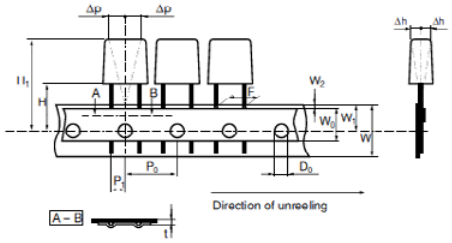
Packaging

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

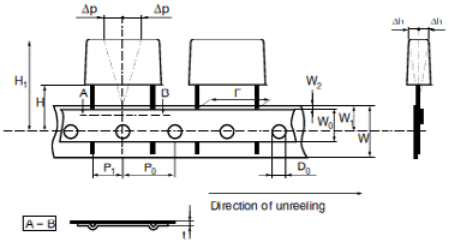
Lead spacing 5 mm



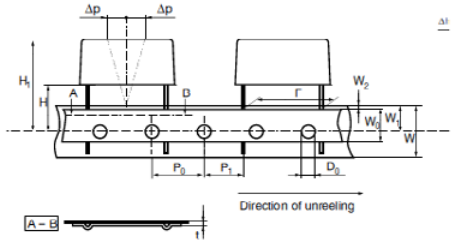
Lead spacing 7.5 mm



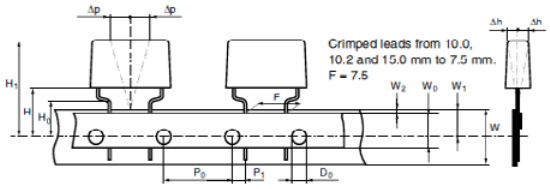
Lead spacing 10 and 15 mm



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*

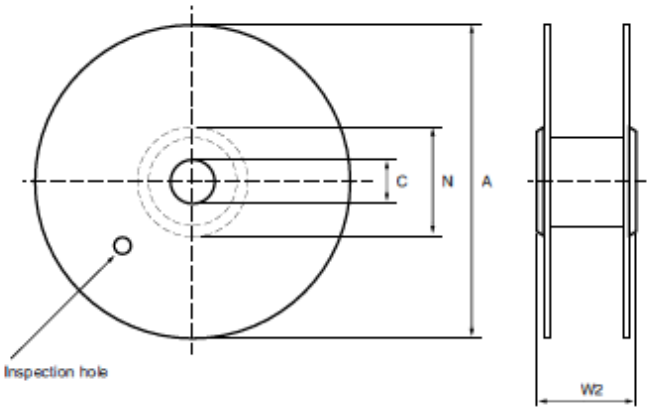
[3)] *Depending on case size*

Note: Crimped leads available on request

Reel Specification

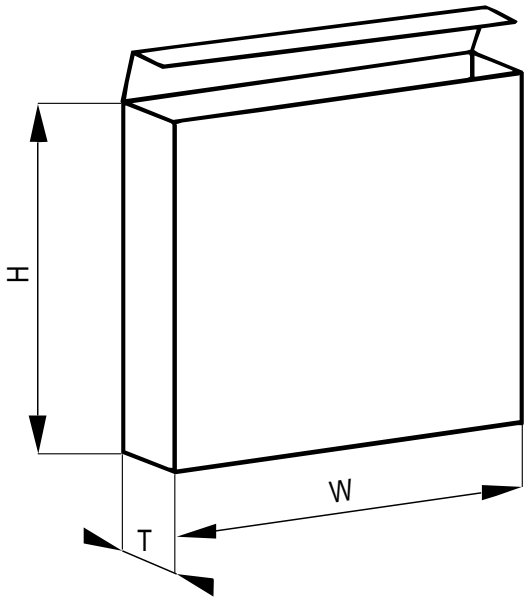
Dimensions in mm			Tolerance
Reel diameter	A	360/500	max
Hub diameter	N	80	min
Arbor hole	C	30	±1
Total reel width measured at hub	W2	58	max

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
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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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