PME271Y A–E Series Metallized Impregnated Paper, Class Y2, 300 VAC

Overview

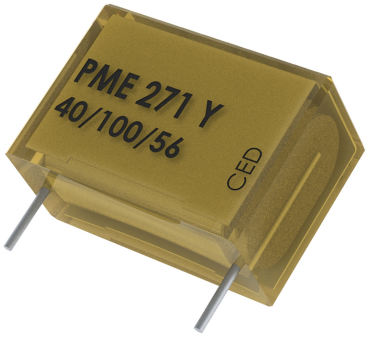
The PME271Y A–E Series is constructed of multilayer metallized paper encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94 V–0.

Applications

Typical applications include worldwide use as electromagnetic interference suppressor in all Y2 applications, line-to-earth.

Benefits

- Approvals: ENEC, UL, CSA, CQC
- Rated voltage: 300 VAC 50/60 Hz
- Capacitance range: 0.001 – 0.15 µF
- Lead spacing: 10.2 – 25.4 mm
- Capacitance tolerance: ±20% for C > 0.1 µF, ±10% for C ≤ 0.1 µF
- Climatic category: 40/115/56/B, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Operating temperature range of -40˚C to +115˚C
- 100% screening factory test at 3,000 VDC
- The highest possible safety regarding active and passive flammability



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Legacy Part Number System

PME271	Y	A	4100	M	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Y2, Metallized Paper	Y = 300	A = 10.2 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.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	See Ordering Options Table

New KEMET Part Number System

P	272	H	E	102	M	300	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code
P = Paper	Y2, Metallized Paper	H = 10.2 Q = 15.2 C = 20.3 D = 22.5 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	M = ±20% (for C ≤ 0.1 µF) K = ±10% (for C > 0.1 µF)	300 = 300	See Ordering Options Table

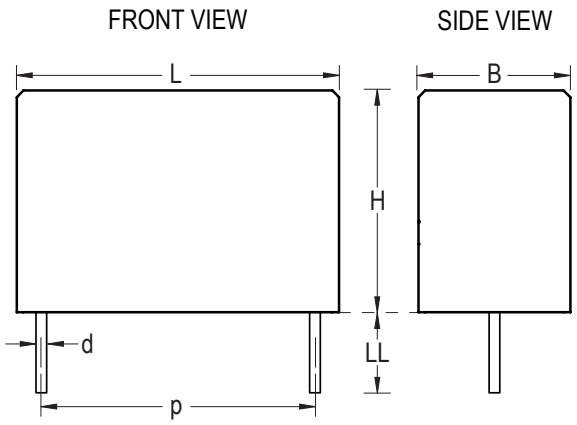
Benefits cont'd

- Excellent self-healing properties ensure long life even when subjected to frequent over-voltages
- Good resistance to ionization due to impregnated dielectric
- High dV/dt capability
- Impregnated paper ensures excellent stability and reliability properties, particularly in applications with continuous operation

Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
10.2	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R19T0
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R19T1
Native 10.2 formed to 7.5	Ammo Pack	H_0= 16.5 +/-0.5	LAF3	R30XA
15.2	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R19T0
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R19T1
20.3	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R19T0
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R19T1
22.5	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R19T0
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R19T1
25.4	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30

Dimensions – Millimeters



p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
10.2	+/-0.4	3.9	Maximum	7.5	Maximum	13.5	Maximum	0.6	+/-0.05
10.2	+/-0.4	4.1	Maximum	8.2	Maximum	13.5	Maximum	0.6	+/-0.05
10.2	+/-0.4	5.1	Maximum	10.5	Maximum	13.5	Maximum	0.6	+/-0.05
15.2	+/-0.4	5.2	Maximum	10.5	Maximum	18.5	Maximum	0.8	+/-0.05
15.2	+/-0.4	5.5	Maximum	11	Maximum	18.5	Maximum	0.8	+/-0.05
15.2	+/-0.4	7.3	Maximum	13	Maximum	18.5	Maximum	0.8	+/-0.05
20.3	+/-0.4	7.6	Maximum	14	Maximum	24	Maximum	0.8	+/-0.05
20.3	+/-0.4	9	Maximum	15	Maximum	24	Maximum	0.8	+/-0.05
20.3	+/-0.4	11.3	Maximum	16.5	Maximum	24	Maximum	0.8	+/-0.05
22.5	+/-0.4	8	Maximum	17	Maximum	27	Maximum	0.8	+/-0.05
22.5	+/-0.4	10	Maximum	19	Maximum	27	Maximum	0.8	+/-0.05
22.5	+/-0.4	12	Maximum	22	Maximum	27	Maximum	0.8	+/-0.05
25.4	+/-0.4	12.1	Maximum	19	Maximum	30.5	Maximum	1	+/-0.05
25.4	+/-0.4	15.3	Maximum	22	Maximum	30.5	Maximum	1	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

Performance Characteristics

Rated Voltage	300 VAC 50/60 Hz	
Capacitance Range	0.001 – 0.15 µF	
Capacitance Tolerance	± 20% for C ≤ 0.1µF, ± 10% for C > 0.1µF	
Temperature Range	-40°C to +115°C	
Climatic Category	40/115/56/B	
Approvals	ENEC, UL, CSA, CQC	
Dissipation Factor	Maximum Values at +23°C	
	1 kHz	1.3%
Test Voltage Between Terminals	The 100% screening factory test is carried out at 3,000 VDC. 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	Minimum Value Between Terminals	
	≥ 12,000 MΩ	
In DC Applications	Recommended voltage ≤ 1,000 VDC	

Environmental Test Data

Test	IEC Publication	Procedure
Vibration	IEC 60068–2–6 Test Fc	3 directions at 2 hours each 10 – 500 Hz at 0.75 mm or 98 m/s^2
Bump	IEC 60068–2–29 Test Eb	4,000 bumps at 390 m/s^2
Solderability	IEC 60068–2–20 Test Ta	Solder globule method
Active Flammability	IEC 60384–14	
Passive Flammability	IEC 60384–14	Needle-flame test
Humidity	IEC 60068–2–3 Test Ca	+40°C and 90 – 95% RH

Approvals

Mark	Specification	File Number
	EN/IEC 60384–14	SE/0140–27C
	UL 1283 (250 VAC)	E100117
	CSA – C22.2 No. 8 (250 VAC)	E100117
	CQC	10001043354

Environmental Compliance

All KEMET EMI capacitors are RoHS Compliant.

RoHS Compliant

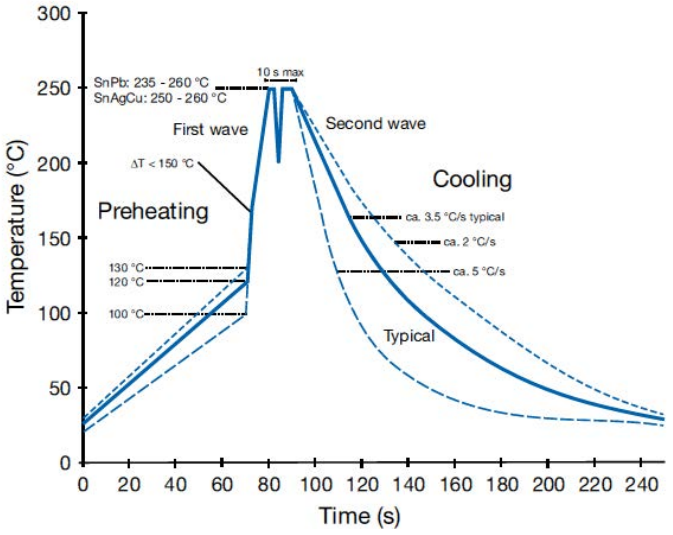
Table 1 – Ratings & Part Number Reference

Capacitance Value (µF)	Maximum Dimensions in mm			Lead Spacing (p)	f_o (MHz)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
	B	H	L					
0.0010	3.9	7.5	13.5	10.2	53.0	2000	P272HE102M300(1)	PME271YA4100M(1)
0.0015	3.9	7.5	13.5	10.2	44.0	2000	P272HE152M300(1)	PME271YA4150M(1)
0.0022	3.9	7.5	13.5	10.2	37	2000	P272HE222M300(1)	PME271YA4220M(1)
0.0025	4.1	8.2	13.5	10.2	35	2000	P272HH252M300(1)	PME271YA4250M(1)
0.0033	4.1	8.2	13.5	10.2	30	2000	P272HH332M300(1)	PME271YA4330M(1)
0.0047	5.1	10.5	13.5	10.2	24	2000	P272HL472M300(1)	PME271YA4470M(1)
0.0068	5.2	10.5	18.5	15.2	19	1400	P272QE682M300(1)	PME271YB4680M(1)
0.0100	5.2	10.5	18.5	15.2	16	1400	P272QE103M300(1)	PME271YB5100M(1)
0.0150	5.5	11	18.5	15.2	13	1400	P272QH153M300(1)	PME271YB5150M(1)
0.0220	7.3	13	18.5	15.2	9.8	1400	P272QM223M300(1)	PME271YB5220M(1)
0.0330	7.6	14	24	20.3	7	1000	P272CE333M300(1)	PME271YC5330M(1)
0.0470	9	15	24	20.3	6	1000	P272CJ473M300(1)	PME271YC5470M(1)
0.0680	11.3	16.5	24	20.3	4.6	1000	P272CP683M300(1)	PME271YC5680M(1)
0.0330	8	17	27	22.5	6.8	600	P272SJ333M300(1)	PME271YD5330M(1)
0.0470	8	17	27	22.5	5.8	600	P272SJ473M300(1)	PME271YD5470M(1)
0.0680	10	19	27	22.5	4.8	600	P272SP683M300(1)	PME271YD5680M(1)
0.1000	12	22	27	22.5	3.8	600	P272SU104M300(1)	PME271YD6100M(1)
0.1000	12.1	19	30.5	25.4	3.9	400	P272EJ104M300(1)	PME271YE6100M(1)
0.1500	15.3	22	30.5	25.4	3.1	400	P272EL154K300(1)	PME271YE6150K(1)
Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	f_o (MHz)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number

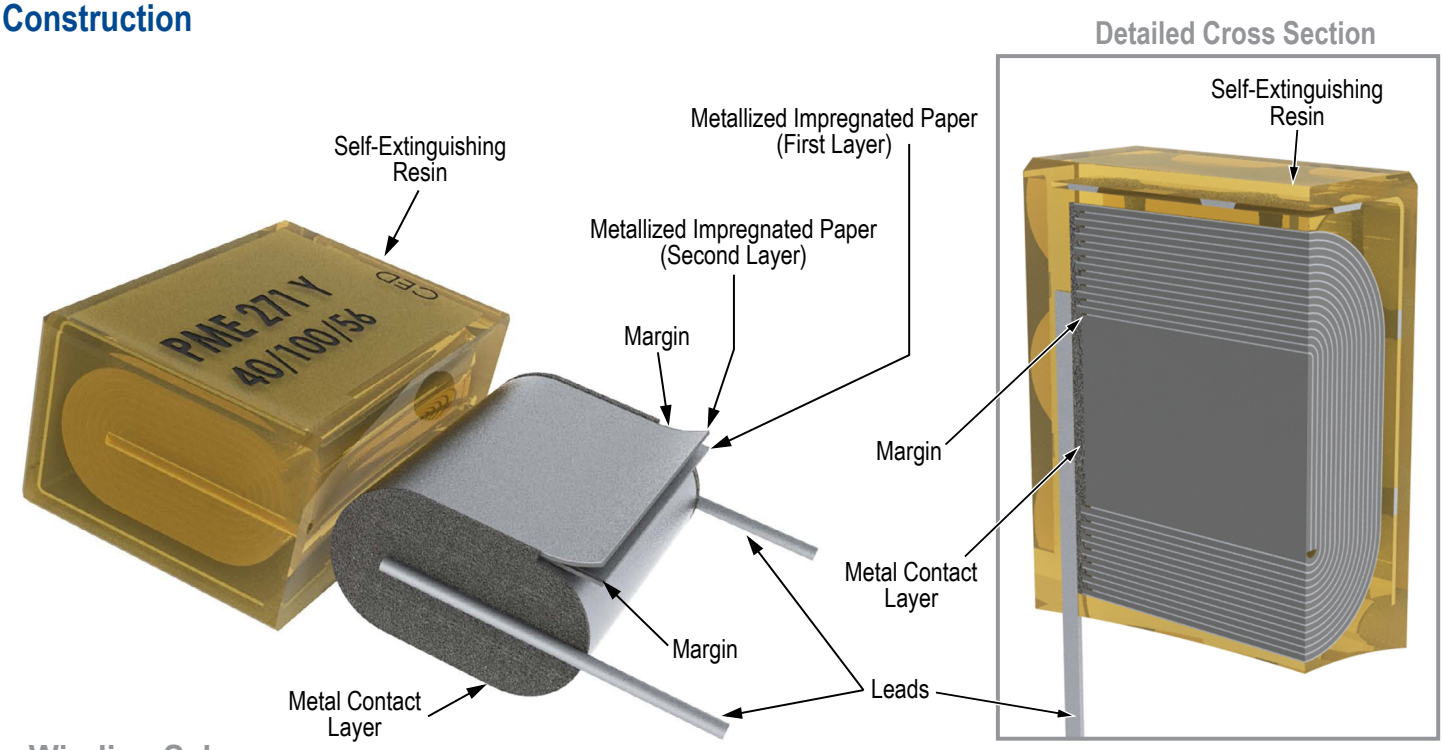
(1) Insert ordering code for lead type and packaging. See Ordering Options Table for available options.

Soldering Process

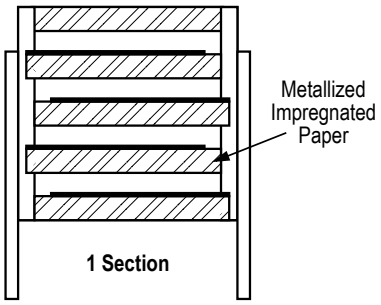
The implementation of the RoHS Directive has required the use of SnAgCu (SAC) or SnCu alloys as primary solder. These alloys require a higher liquidus temperature (217ºC – 221ºC) as compared to SnPb eutectic alloy (183ºC). Due to the higher pre-heat and wave temperatures, the heat stress to components has increased considerably. Polypropylene capacitors are especially sensitive to soldering temperature due to the relatively low melting point of polypropylene material (160ºC – 170ºC). As a result, wave soldering can be destructive, especially to mechanically small polypropylene capacitors with lead spacings of 5 –10 mm. For more information, please refer to KEMET's Recommended Soldering Profiles or contact a KEMET representative. IEC Publication 61760–1 Edition 2 may also be consulted for general guidelines.



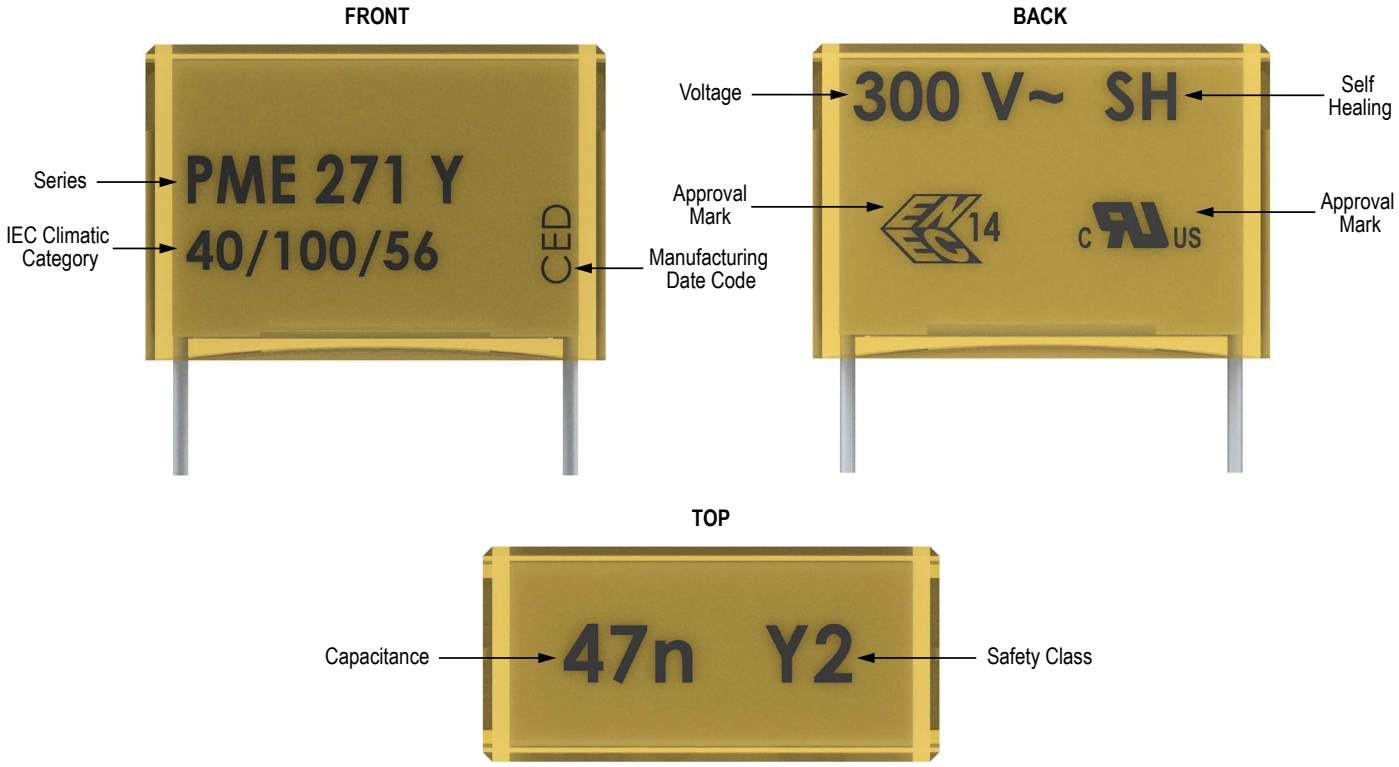
Construction



Winding Scheme



Marking

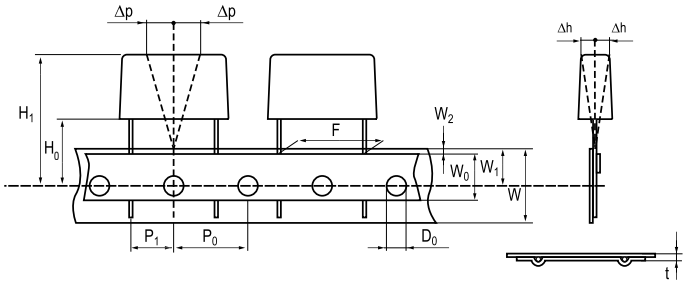

FRONT
BACK
TOP
Series
PME 271 Y
IEC Climatic Category
40/100/56
CED
Manufacturing Date Code
Voltage
300 V~ SH
Self Healing
Approval Mark
14
c US
Approval Mark
Capacitance
47n Y2
Safety Class

Packaging Quantities

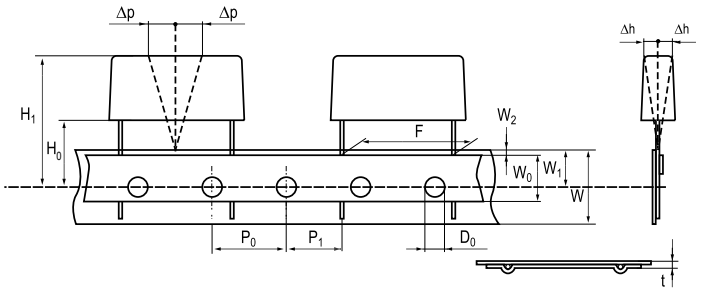
Lead Spacing (mm)	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Ammo Formed
10.2	3.9	7.5	13.5	2000	1000	700	1400	800
	4.1	8.2	13.5	2000	1000	600		780
	5.1	10.5	13.5	1600	800	600	1200	630
15.2	5.5	12.5	18	1000	500	600		
	6.5	12.5	18	600	400	400		
	7.5	14.5	18	600	400	400		
	8.5	16	18	400	250	400		
	5.2	10.5	18.5	1000	500	600		
	5.5	11	18.5	1000	500	500		
	6	12.5	18.5	600	400	400		
	7.3	13	18.5	600	400	400	800	
	7.8	13.5	18.5	600	400	400		
	8.5	14.3	18.5	500	300	350		
20.3	7.6	14	24	1500	250	250	500	
	8.4	14	24	1200	200	250	500	
	9	15	24	1500	200	250		
	11.3	16.5	24	1000	150	180	400	
22.5	8	17	27	1200	200			
	10	19	27	1000	150	200		
	12	22	27	800	100	180	350	
25.4	10.6	16.1	30.5	1000	150			
	10.5	17.3	30.5	1000	100			
	12.1	19	30.5	800	100			
	15.3	22	30.5	600	75			

Lead Taping & Packaging (IEC 60286–2)

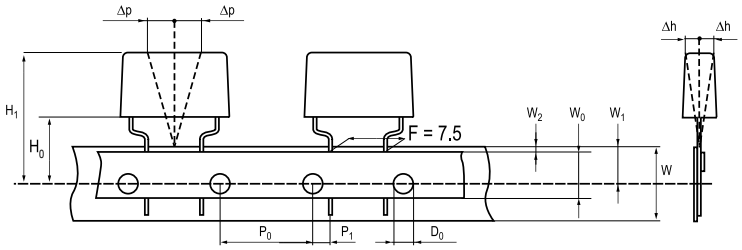
Lead Spacing 10.2 – 15.2 mm



Lead Spacing 20.3 – 22.5 mm



Formed Leads from 10.2 to 7.5 mm



Taping Specification

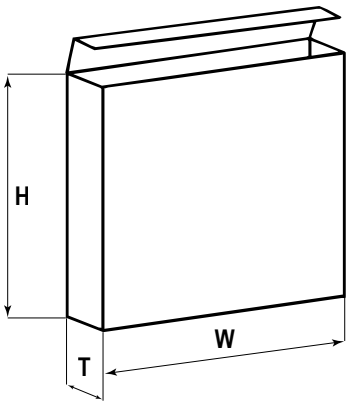
Dimensions in mm								Standard IEC 60286–2
Lead spacing	+6/-0.1	F	Formed 7.5	10.2	15.2	20.3	22.5	F
Carrier tape width	+/-0.5	W	18	18	18	18	18	$18^{+1/-0.5}$
Hold-down tape width	+/-0.3	W_0	9	12	12	12	12	
Position of sprocket hole	+/-0.5	W_1	9	9	9	9	9	$9^{+0.75/-0.5}$
Distance between tapes	Maximum	W_2	3	3	3	3	3	3
Sprocket hole diameter	+/-0.2	D_0	4	4	4	4	4	4
Feed hole lead spacing	+/-0.3	P_0 (1)	12.7(4)	12.7	12.7	12.7	12.7	12.7
Distance lead – feed hole	+/-0.7	P_1	3.75	7.6	5.1	8.9	5.3	P1
Deviation tape – plane	Maximum	Δp	1.3	1.3	1.3	1.3	1.3	1.3
Lateral deviation	Maximum	Δh	2	2	2	2	2	2
Total thickness	+/-0.2	t	0.7	0.7	0.7	0.7	0.9^{MAX}	0.9^{MAX}
Sprocket hole/cap body	Nominal	H_0 (2)	$18^{+2/-0}$	$18^{+2/-0}$	$18^{+2/-0}$	$18^{+2/-0}$	$18.5^{+/-0.5}$	$18^{+2/-0}$
Sprocket hole/top of cap body	Maximum	H_1 (3)	35	35	35	35	58	58^{MAX}

(1) Maximum cumulative feed hole error, 1 mm per 20 parts.
(2) 16.5 mm available on request.
(3) Depending on case size.
(4) 15 mm available on request.

Lead Taping & Packaging (IEC 60286–2) cont'd

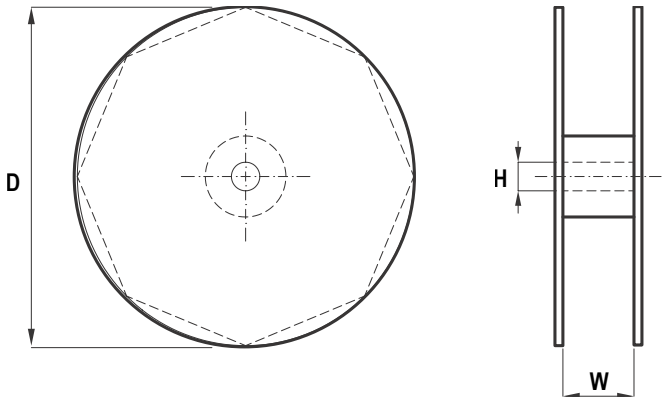
Ammo Specifications

Series	Dimensions (mm)		
	H	W	T
R4x, R4x+R, R7x, RSB	360	340	59
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx	330	330	50



Reel Specifications

Series	Dimensions (mm)		
	D	H	W
R4x, R4x+R, R7x, RSB	355 500	30 25	55 (Max)
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx	360 500	30	46 (Max)



Manufacturing Date Code (IEC–60062)

Y = Year, Z = Month			
Year	Code	Month	Code
2000	M	January	1
2001	N	February	2
2002	P	March	3
2003	R	April	4
2004	S	May	5
2005	T	June	6
2006	U	July	7
2007	V	August	8
2008	W	September	9
2009	X	October	O
2010	A	November	N
2011	B	December	D
2012	C		
2013	D		
2014	E		
2015	F		
2016	H		
2017	J		
2018	K		
2019	L		
2020	M		

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Beijing, China
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Shanghai, China
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Taipei, Taiwan
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