

# PMZ2035 Series Metallized Impregnated Paper, Class X1, 440 VAC/1,000 VDC

## Overview

The PMZ2035 Series is constructed of multilayer metallized paper encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94 V-0.

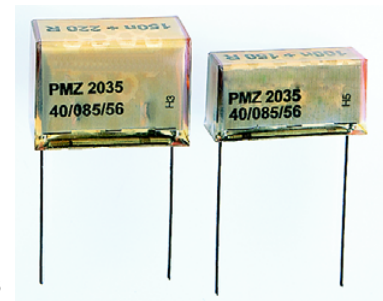
## Applications

Typical applications include worldwide use in contact protection, contact interference suppression and transient suppression.

## Benefits

- Approvals: ENEC
- Rated voltage: 440 VDC 50/60 Hz
- Capacitance: 0.1  $\mu$ F
- Capacitance tolerance:  $\pm 10\%$ , other tolerances on request
- Resistance: 150  $\Omega$
- Resistance tolerance:  $\pm 30\%$
- Lead spacing: 25.4 mm
- Climatic category: 40/085/56/B, IEC 60068-1
- RoHS Compliant and lead-free terminations
- Operating temperature range of -40°C to +85°C
- 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 dV/dt capability
- Impregnated paper ensures excellent stability and reliability properties, particularly in applications with continuous operation



## Legacy Part Number System

PMZ2035	R	E	6100	K	150	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Resistance ( $\Omega$ )	Lead and Packaging Code
RC Snubber, Metallized Paper	R = 440	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 = $\pm 10\%$ M = $\pm 20\%$	Resistance Value in $\Omega$	See Ordering Options Table

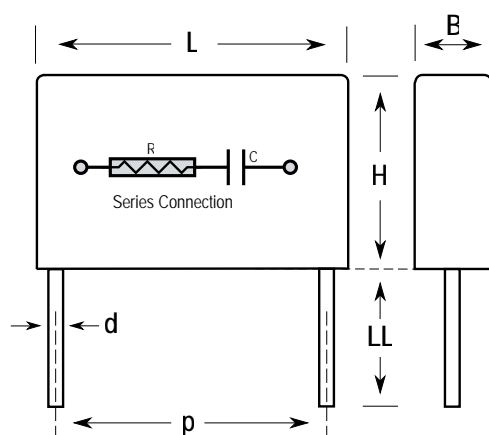
## New KEMET Part Number System

P	435	E	J	104	K	440	A	H151
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	Resistance ( $\Omega$ )
P = Metallized Paper	RC Snubber	E = 25.4	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	K = $\pm 10\%$ M = $\pm 20\%$	440 = 440	See Ordering Options Table	H + first two digits representing significant figures. Third digit specifies number of zeros.

## 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
25.4	<b>Standard Lead and Packaging Options</b>			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Tray) – Max Length Leads	30 +5/-0	A	R30

## Dimensions – Millimeters



Size Code	p		B		H		L		d	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
EJ	25.4	+/-0.4	12.1	Maximum	19	Maximum	30.5	Maximum	1	+/-0.05
Note: See Ordering Options Table for lead length (LL) options.										


## Performance Characteristics

Rated Voltage	440 VAC 50/60 Hz
Capacitance Range	0.1 $\mu$ F
Capacitance Tolerance	$\pm 10\%$ , other tolerances on request
Resistance Range	150 $\Omega$
Resistance Tolerance	$\pm 30\%$
Temperature Range	-40°C to +85°C
Climatic Category	40/085/56/B
Approvals	ENEC
Peak Pulse Voltage	1,000 V
Series Resistance	The series resistance is defined at 100 kHz
Insulation Resistance	Minimum Value Between Terminals
	$\geq 6,000 \text{ M}\Omega$
Pulse Current	Maximum 12 A repetitive. Maximum 20 A peak for occasional transients.
Test Voltage Between Terminals	The 100% screening factory test is carried out at 1,800 VDC. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test.
In DC Applications	Recommended voltage $\leq 1,000 \text{ VDC}$
Power Ratings	The average losses may reach 0.5 W provided the surface temperature does not exceed +85°C. For maximum permitted power dissipation vs. temperature, see Derating Curves.
Derating Curves	<p>Maximum Allowable Power Dissipation vs. Ambient Temperature and Case Sizes.</p> <p>The graph shows a blue line representing the derating curve. The y-axis is labeled <math>P_{max}</math> W with a tick at 0.5. The x-axis is labeled <math>T_{amb}</math> °C with ticks at 40, 50, 60, 70, 80, and 85. The curve starts at (40, 0.5), remains horizontal until 75°C, and then slopes down linearly to (85, 0).</p>

## 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 <sup>2</sup>
Bump	IEC 60068–2–29 Test Eb	4,000 bumps at 390 m/s <sup>2</sup>
Solderability	IEC 60068–2–20 Test Ta	Wetting time for d > 0.8 < 1.5 seconds
Damp Heat Steady State	IEC 60068–2–78 Test Cab	+40°C and 93% RH, 56 days
Active Flammability	IEC 60384–14	V <sub>R</sub> + 20 surge pulses at 2.5 kV (pulse every 5 seconds)
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% RH, 56 days

## Approvals

Certification Body	Specification	File Number
	EN/IEC 60384–14	SE/0140–29A

## Environmental Compliance

All KEMET EMI capacitors are RoHS Compliant.



RoHS Compliant

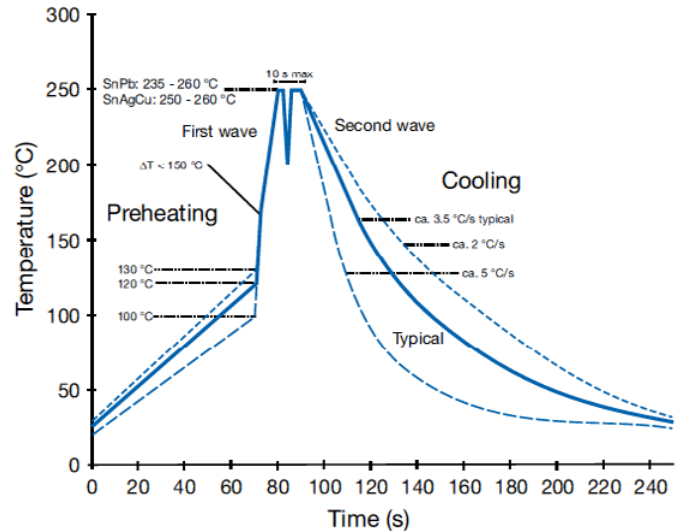
## Table 1 – Ratings & Part Number Reference

Lead Space	Capacitance Value (μF)	Resistance Ω	Maximum Dimensions (mm)			Quantity per Package		F Article Code	Part Number
			B	H	L	R06	R30		
25.4	0.1	150	12.1	19	30.5	100	800	P435EJ104K440(1)H151	PMZ2035RE6100K150(1)

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

## Soldering Process

The implementation of the RoHS Directive has required the use of SnAuCu (SAC) or SnCu alloys as primary solder. These alloys require a higher liquidus temperature (217°C – 221°C) as compared to SnPb eutectic alloy (183°C). 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 (160°C – 170°C). 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.



## Marking

- Manufacturer's logo
- Article series
- RC unit
- Rated capacitance
- Rated resistance
- Rated voltage
- Manufacturing date code
- IEC climatic category
- Circuit diagram
- Passive flammability class
- Manufacturing date code

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Taipei, Taiwan  
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## Other KEMET Resources

Tools	
Resource	Location
Configure A Part: CapEdge	<a href="http://capacitoredge.kemet.com">http://capacitoredge.kemet.com</a>
SPICE & FIT Software	<a href="http://www.kemet.com/spice">http://www.kemet.com/spice</a>
Search Our FAQs: KnowledgeEdge	<a href="http://www.kemet.com/keask">http://www.kemet.com/keask</a>
Electrolytic LifeCalculator	<a href="http://www.kemet.com:8080/elc">http://www.kemet.com:8080/elc</a>

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

Product Request	
Resource	Location
Sample Request	<a href="http://www.kemet.com/sample">http://www.kemet.com/sample</a>
Engineering Kit Request	<a href="http://www.kemet.com/kits">http://www.kemet.com/kits</a>

Contact	
Resource	Location
Website	<a href="http://www.kemet.com">www.kemet.com</a>
Contact Us	<a href="http://www.kemet.com/contact">http://www.kemet.com/contact</a>
Investor Relations	<a href="http://www.kemet.com/ir">http://www.kemet.com/ir</a>
Call Us	1-877-MyKEMET
Twitter	<a href="http://twitter.com/kemetcapacitors">http://twitter.com/kemetcapacitors</a>

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Although KEMET designs and manufactures its 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.

