

PHZ9004 Series Metallized Polypropylene Film, 300 VAC 3x X2 with Separate Terminals for Three-Phase Filtering

Overview

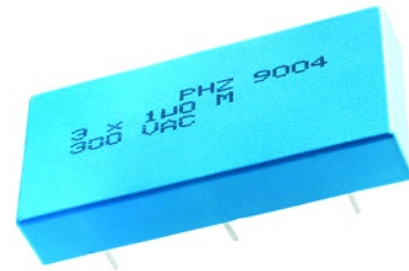
The PHZ9004 Series is constructed of metallized polypropylene film encapsulated with self-extinguishing resin in a box of material meeting the requirements of UL 94 V-0.

Applications

Typical applications include worldwide use as an electromagnetic interference suppressor in X2 and across-the-line applications for three phases.

Benefits

- Rated voltage: 300 VAC 50/60 Hz
- Capacitance range: 3 x 1.0 μ F
- Lead spacing: 27.5 mm
- Capacitance tolerance: \pm 20%, other tolerances on request
- Climatic category: 55/105/56, IEC 60068-1
- Tape and reel in accordance with IEC 60286-2
- RoHS Compliant and lead-free terminations
- Operating temperature range of -55°C to +105°C
- 100% screening factory test at 2,200 VDC



Legacy Part Number System

PHZ9004	E	F	7100	M	R06L2
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Lead and Packaging Code
Triple Capacitor X2, Metallized Polypropylene	E = 300	F = 27.5	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.	M = \pm 20%	See Ordering Options Table

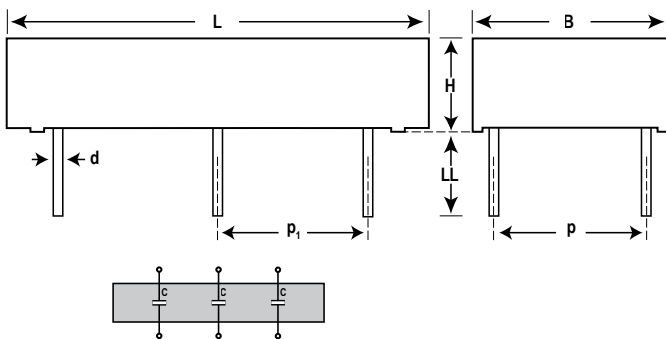
New KEMET Part Number System

9004	AA	105	M	300	C	DECT	V680
Capacitor Class	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Lead and Packaging Code	C-Spec	V-Spec
Triple Capacitor X2, Metallized Polypropylene	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 = \pm 20%	300 = 300	See Ordering Options Table	Optional additional characters at KEMET's option	Part Number specific version code

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
27.5	Standard Lead and Packaging Options			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06L2

Dimensions – Millimeters



p		p ₁		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
27.5	+/-0.5	21	+/-0.5	30	Maximum	11.5	Maximum	64	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	3 x 1.0 μ F	
Capacitance Tolerance	\pm 20%, other tolerances on request	
Temperature Range	-55 to +105°C	
Climatic Category	55/105/56	
Dissipation Factor	Maximum Values at +23°C	
	1 kHz	0.10%
	10 kHz	0.50%
Test Voltage Between Terminals	The 100% screening factory test is carried out at 2,200 VDC. The voltage level is selected to meet the requirements in applicable equipment standards. All electrical characteristics are checked after the test. This test may not be repeated due to potential capacitor damage. KEMET is not liable in such case for any failures.	
Insulation Resistance	Minimum Value Between Terminals	
	$\geq 10,000 \text{ M}\Omega \cdot \mu\text{F}$	
	Minimum Value Between Terminals and Case	
	$\geq 100,000 \text{ M}\Omega$	

Environmental Test Data

Test	IEC Publication	Procedure
Endurance	IEC 60384-14	$1.25 \times V_R$ VAC 50 Hz, once every hour increase to 1,000 VAC for 0.1 second, 1,000 hours 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 98 m/s ²
Bump	IEC 60068-2-29 Test Eb	1,000 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	$V_R + 20$ 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
Humidity	IEC 60068-2-3 Test Ca	+40°C and 90 – 95% RH, 56 days

Environmental Compliance

All KEMET EMI capacitors are RoHS Compliant.



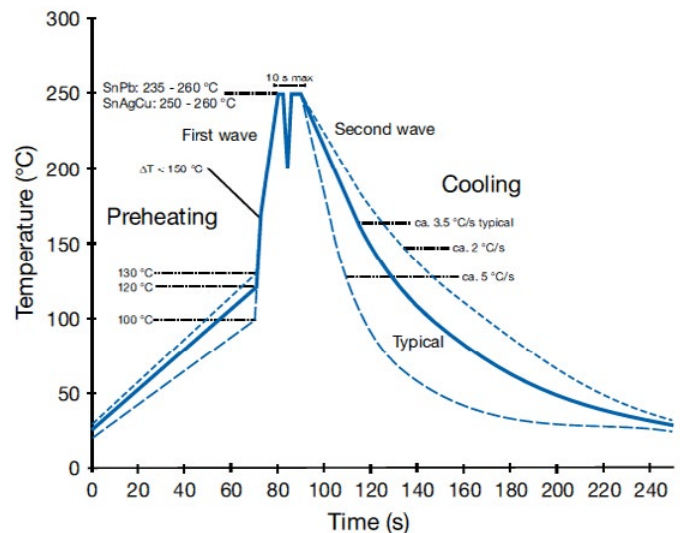
RoHS Compliant

Table 1 – Ratings & Part Number Reference

VAC	Cap Value (µF)	Max Dimensions in mm			Lead Spacing (p)	Package Quantity C (R06I2)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
		B	H	L					
300	3 x 1.0	30.0	11.5	64.0	27.5	72	100	9004AA105M300CDECTV680	PHZ9004EF7100MR06L2

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

- KEMET's logo
- Series
- Capacitance
- Rated voltage
- Capacitance tolerance code
- Manufacturing date code

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