Power Line Multilayer Ferrite Chip Beads Z-PMS

Overview

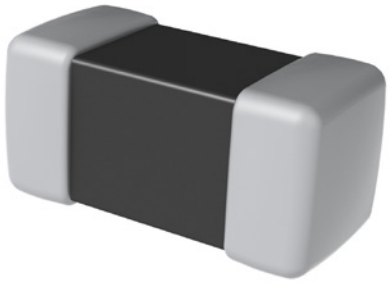
KEMET Z-PMS Power Line Multilayer Ferrite Chip Beads are ideal for high frequency noise countermeasures on the DC power supply line.

The small size of this ferrite bead makes it suitable for mobile equipement that requires tight space both in dimension and in height. The unique green sheet and printing technologies realize low RDC which leads to lower power consumption and longer battery life.
Using three different type of materials enables to further specialize the function and characteristics of the chip bead:

1) Material “A” for broadband noise suppression. Low R-XL frequency cross point and large resistance part work as damping function, suppress unnecessary resonance and keep signal integrity.
2) Material “B” for noise suppression above 20 MHz, with increased attenuation. For general use especially efficient for video signal lines.

Applications

- PC, tablet, peripherals
- Differential transmission line on USB and IEEE1394 interface
- Mobile and portable equipment



Benefits

- Miniature and low profile
- Reduced power dissipation due to low RDC values
- No grounding needed for flexible circuit design
- Prevents interference between circuits in mobile systems
- Impedance value from 10 – 390 Ω
- Rated current range from 0.8 – 4 A
- Operating temperature range from –55°C to +85°C

Part Number System

Z	0402	C	221	A	PMS	T
Ferrite Bead	EIA Case Size (L" x W")	Specification	Impedance Value (Ω) at 100 MHz	Material	Series	Packaging
	0402 (1005 in mm) 0603 (1608 in mm) 0805 (2012 in mm)	C = Commercial	The first two digits represent the impedance value. The third digit inidcates the number of zeros to be added. Examples: 800 = 80 Ω 101 = 100 Ω 221 = 220 Ω	A = for broadband noise suppression B = for noise suppression above 20 MHz, with increased attenuation	PMS = Power Line Multilayer Ferrite Chip Beads	T = Tape & Reel

Dimensions – Millimeters (Inches)

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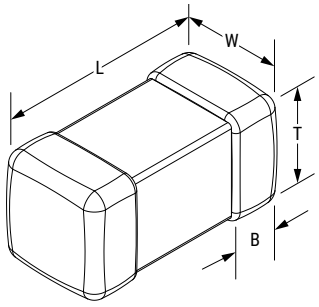
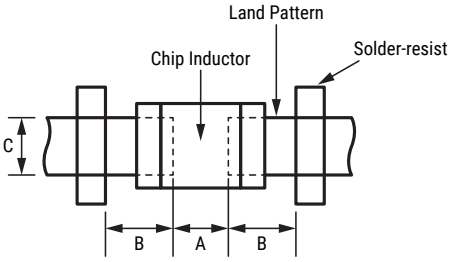


Land Pattern - Millimeters



EIA Size Code	Metric Size Code	L Length	W Width	T Thickness	B Bandwidth	A	B	C
0402	1005	1.00 (0.039) ±0.05 (0.002)	0.50 (0.020) ±0.05 (0.002)	0.50 (0.020) ±0.05 (0.002)	0.25 (0.010) ±0.10 (0.004)	0.45 ~ 0.55	0.40 ~ 0.50	0.45 ~ 0.55
0630	1608	1.60 (0.063) ±0.15 (0.006)	0.80 (0.031) ±0.15 (0.006)	0.80 (0.031) ±0.15 (0.006)	0.30 (0.012) ±0.20 (0.008)	0.80 ~ 1.00	0.60 ~ 0.80	0.60 ~ 0.80
0805	2012	2.00 (0.079) +0.30/−0.10 (+0.012/−0.004)	1.25 (0.049) ±0.20 (0.008)	0.85 (0.033) ±0.2 (0.008)	0.50 (0.020) ±0.30 (0.012)	0.80 ~ 1.20	0.80 ~ 1.20	0.90 ~ 1.60

Performance Characteristics

Item	Performance Characteristics
Impedance Range	10 – 390 Ω, at 100 MHz
Impedance Tolerance	±25%
Rated Current Range	0.8 – 4 A maximum
Rated DC Resistance Range	0.02 – 0.20 Ω maximum
Operating Temperature Range	–55°C to +85°C (includes self temperature rise)

Environmental Compliance

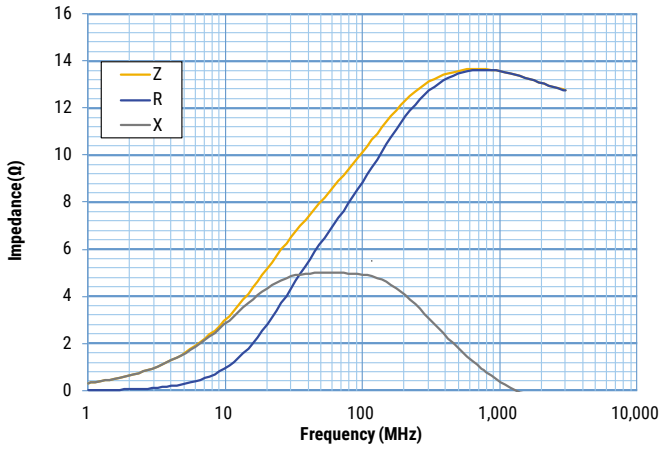
All KEMET Ferrite Beads are RoHS and REACH Compliant.

Table 1 – Ratings & Part Number Reference

Part Number	Impedance (Ω) at 100 MHz	Impedance Tolerance	Rated Current (A) Maximum	DC Resistance (Ω) Maximum
Z0402C100APMST	10	±25%	2.0	0.030
Z0402C330APMST	33	±25%	1.7	0.050
Z0402C680APMST	68	±25%	1.5	0.075
Z0402C121APMST	120	±25%	1.0	0.140
Z0402C221APMST	220	±25%	0.8	0.200
Z0402C121BPMST	120	±25%	1.1	0.120
Z0402C221BPMST	220	±25%	0.9	0.180
Z0603C330APMST	33	±25%	3.0	0.025
Z0603C600APMST	60	±25%	2.5	0.040
Z0603C101APMST	100	±25%	1.7	0.050
Z0603C121APMST	120	±25%	2.7	0.035
Z0603C181APMST	180	±25%	1.5	0.075
Z0603C271APMST	270	±25%	1.2	0.110
Z0603C391APMST	390	±25%	1.0	0.140
Z0805C330APMST	33	±25%	4.0	0.020
Z0805C600APMST	60	±25%	3.0	0.025
Z0805C101APMST	100	±25%	2.5	0.040
Z0805C221APMST	220	±25%	2.0	0.050
Z0805C331APMST	330	±25%	1.5	0.075
Part Number	**Impedance**	**Impedance Tolerance**	**Rated Current**	**DC Resistance**

Frequency Characteristics

Z0402C100APMST



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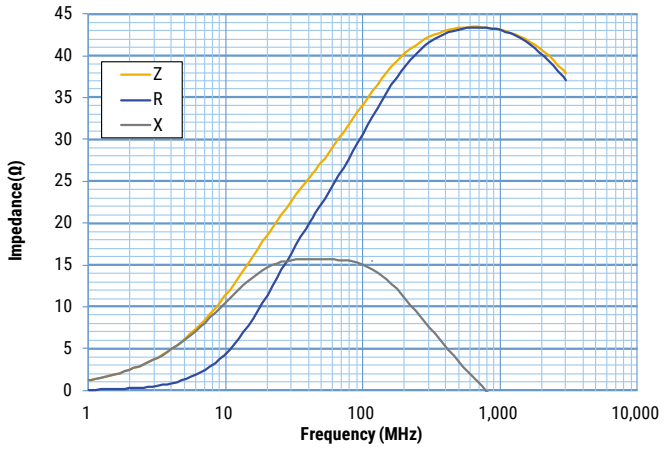

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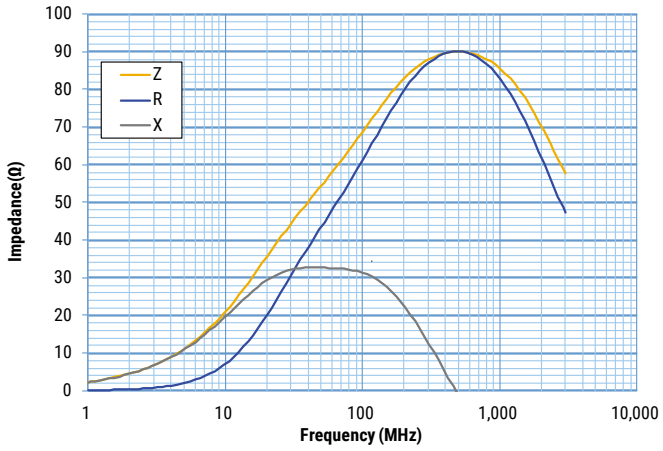

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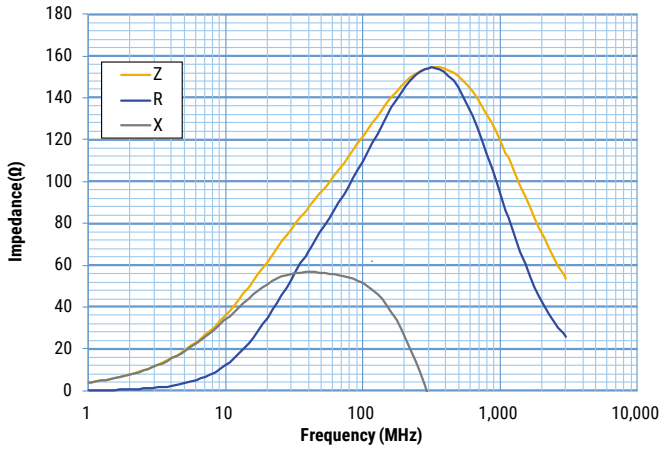

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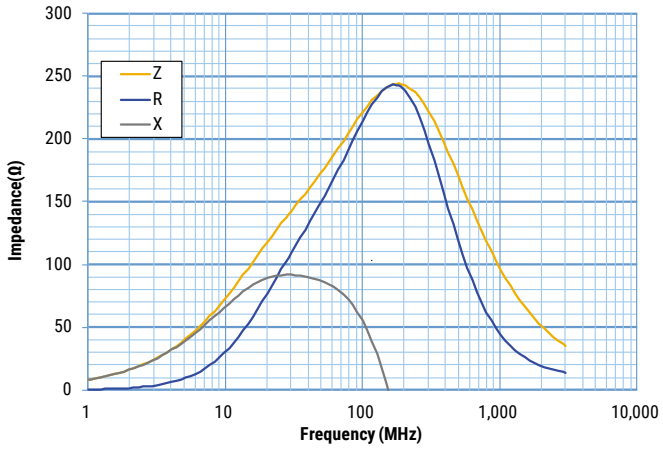

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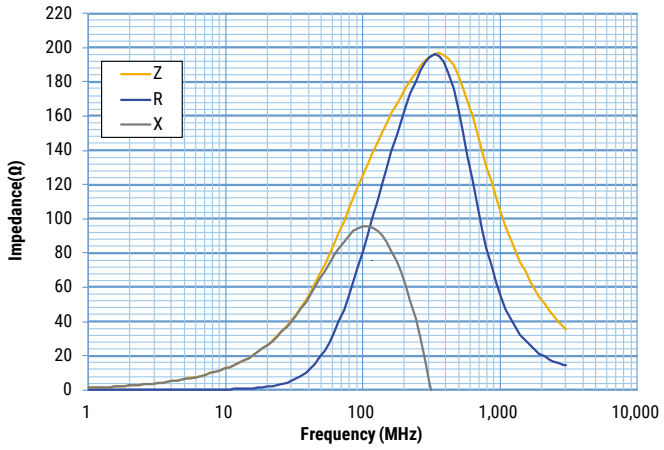

Frequency Characteristics cont.

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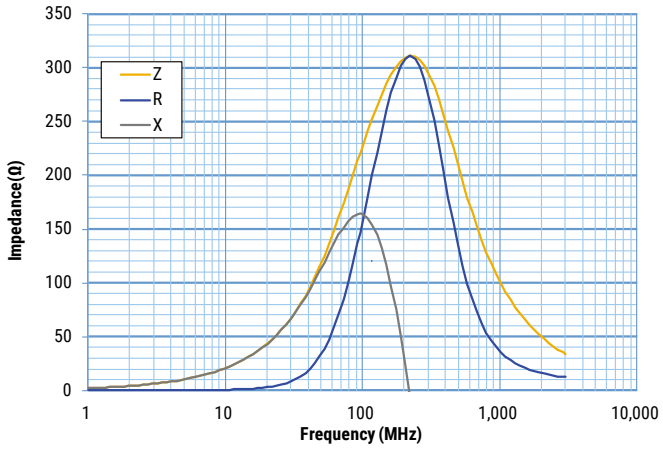

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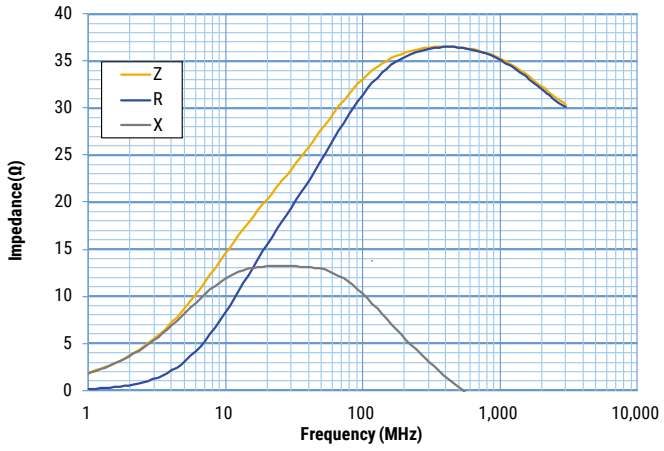

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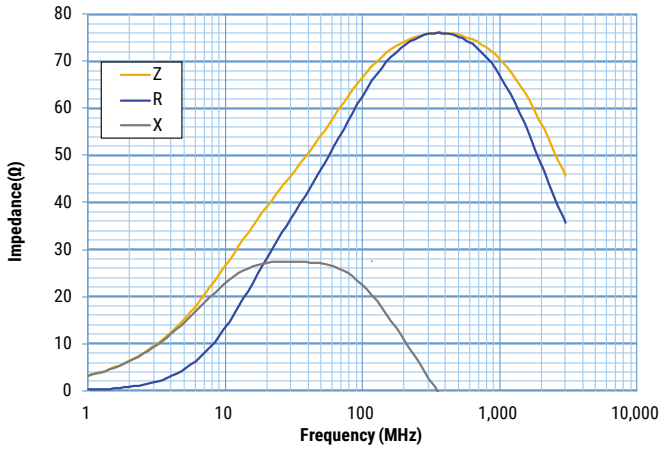

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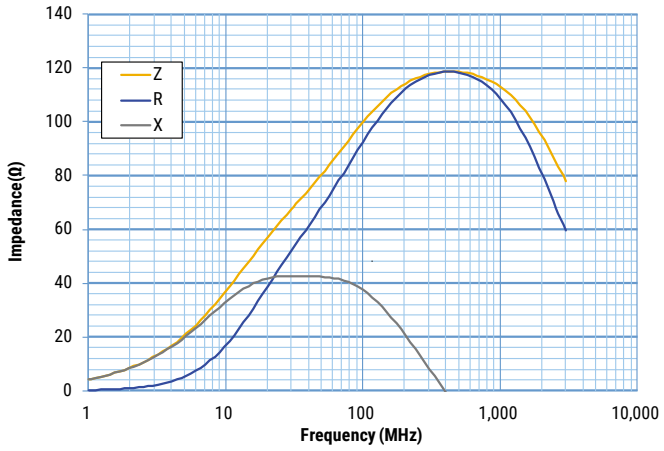

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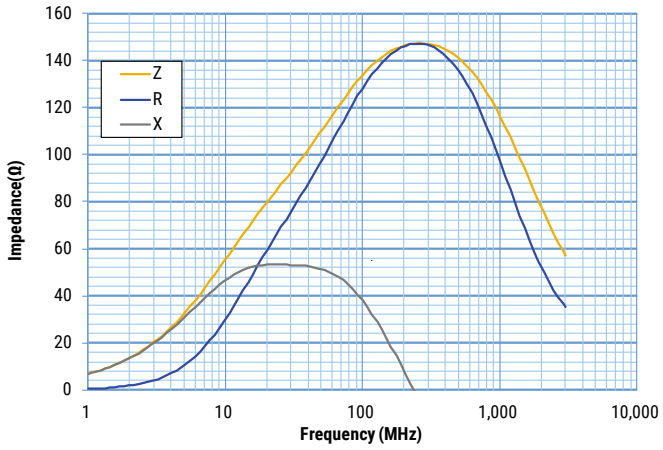

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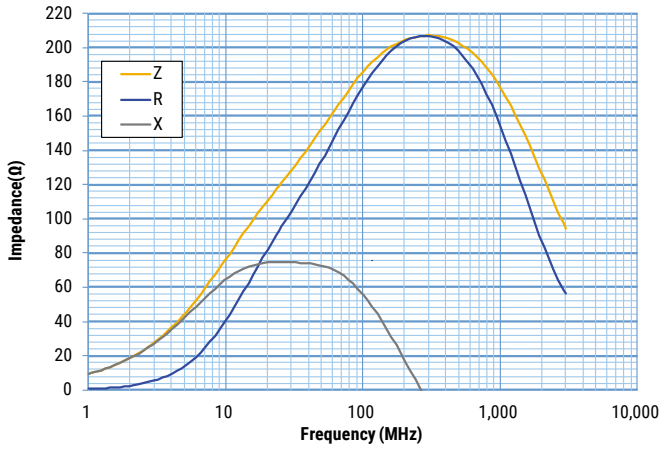

Frequency Characteristics cont.

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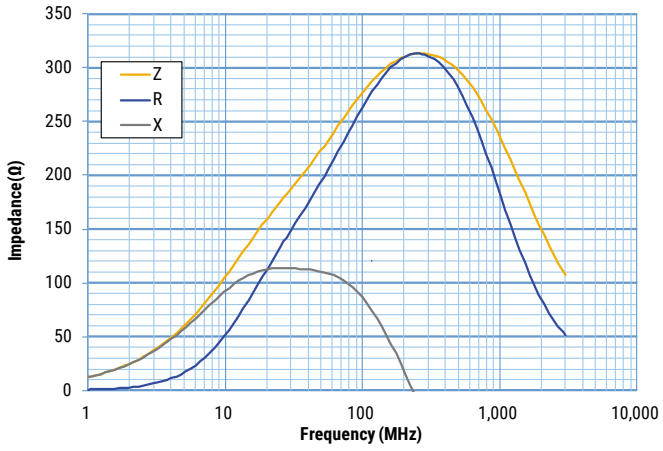

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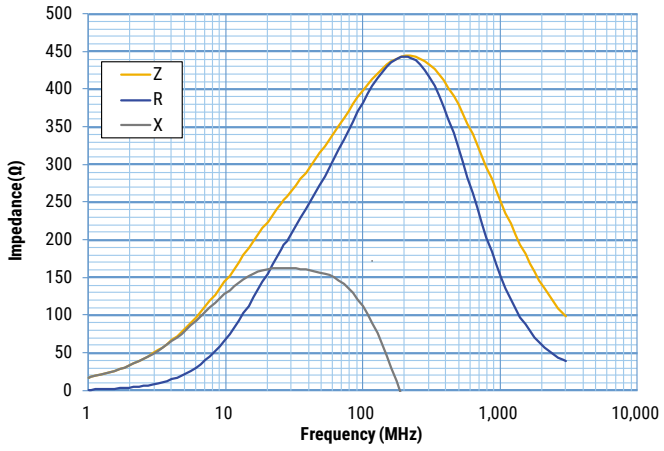

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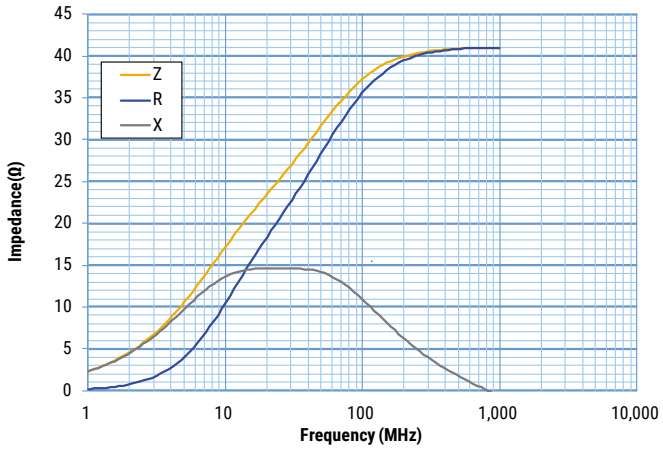

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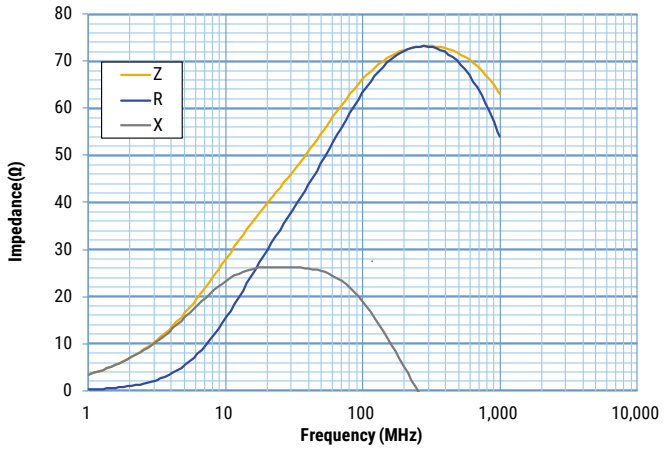

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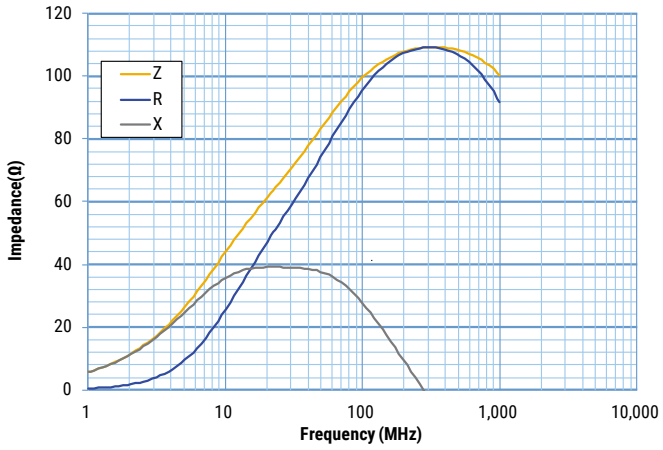

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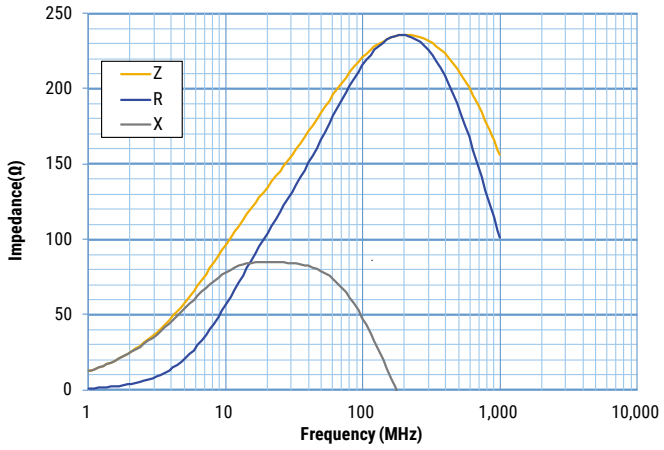
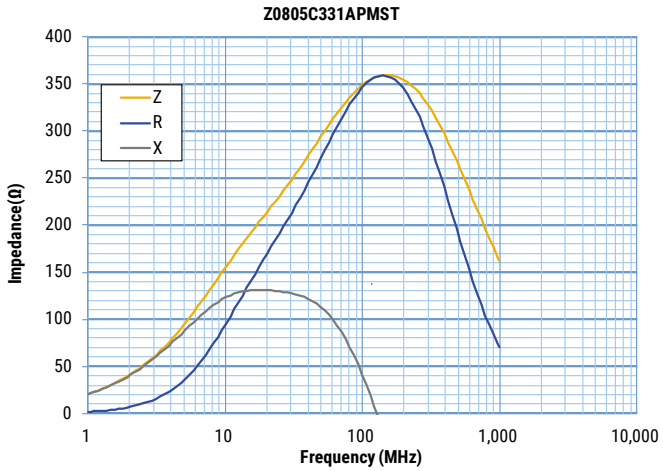
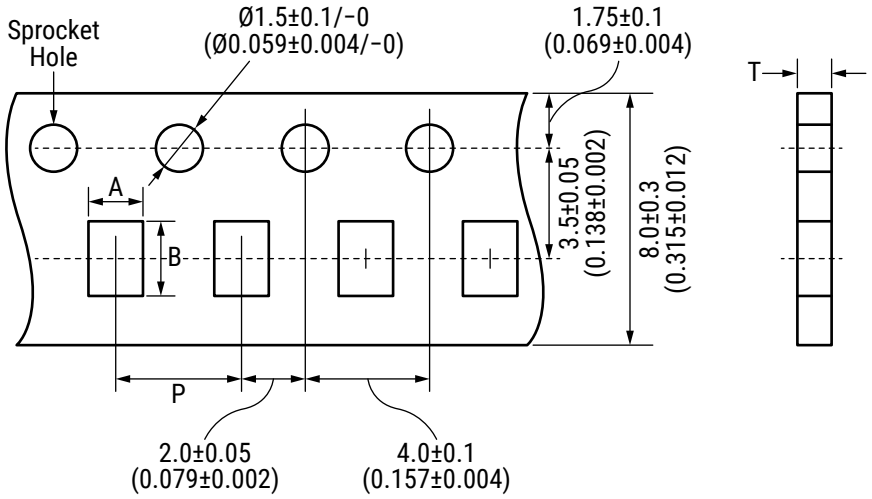


Frequency Characteristics cont.



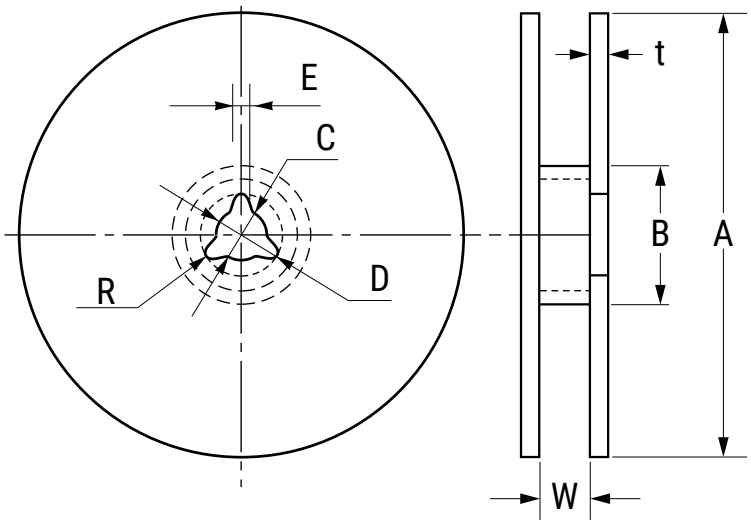
Taping Specifications - Millimeters (Inches)

Paper Tape 8mm Width



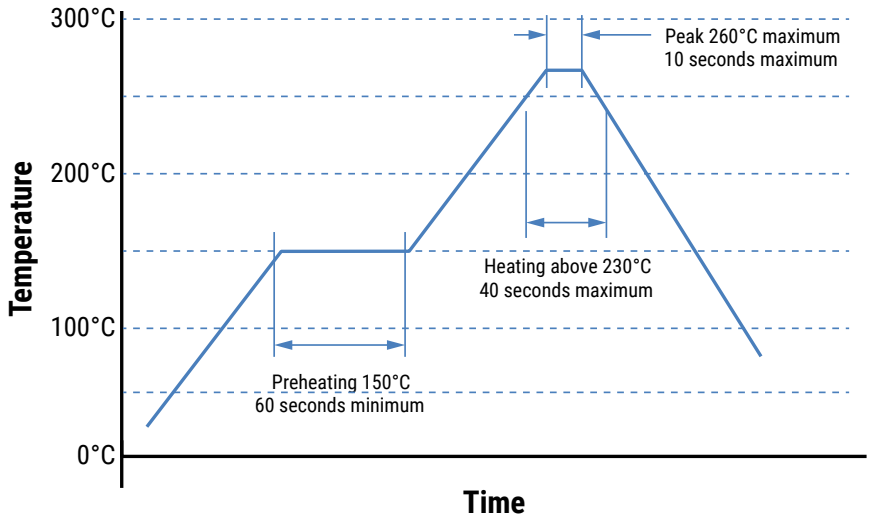
EIA Case Size	Metric Case Size	Height	Reel Quantity		Cavity		Pitch	Thickness
					A	B	P	T
0402	1005	0.50	10,000	Nominal	0.65	1.15	2.0	0.8
				Tolerance	±0.1	±0.1	±0.05	Maximum
0630	1608	0.80	4,000	Nominal	1.0	1.8	4.0	1.1
				Tolerance	±0.2	±0.2	±0.1	Maximum
0805	2012	0.85	4,000	Nominal	1.5	2.3	4.0	1.1
				Tolerance	±0.2	±0.2	±0.1	Maximum

Reel Specifications - Millimeters



EIA Size Code		Dimensions - Millimeters							
		A	B	C	D	E	R	t	W
0402 0630 0805	Nominal	ø178.0	ø60.0	ø13.0	ø21.0	2.0	1.0	2.5	10.0
	Tolerance	±2.0	Minimum	±0.2	±0.8	±0.5		Maximum	±1.5

Recommended Reflow Soldering Profile



Handling Precautions

Ferrite chip beads should be stored in normal working environments. While these beads themselves are quite robust in other environments, exposure to high temperatures, high humidity, corrosive atmospheres, and long-term storage degrades solderability.

KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine-bearing and sulfur-bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts.

For optimized solderability, ferrite chip beads stock should be used promptly, preferably within six months of receipt."

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