OBSOLETE

Ferrite Beads

Power Line Ferrite Chip Beads Z-PWS

Overview

KEMET Z-PWS Power Line Ferrite Chip Beads are ideal for use in filtering and EMI Suppression for radiant and conductive noise on power lines.

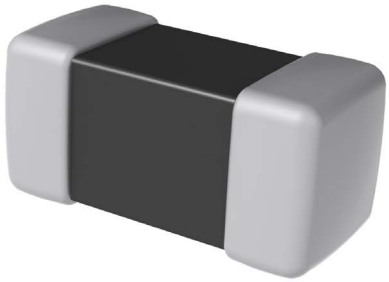
The chip size of this ferrite beads provide waveform correction of digital signals and high frequency noise suppression in various types of digital mobile equipments that require low power consumption.

Applications

- PC, tablet, peripherals
- Differential transmission line on USB
- Optical storage, HDD
- RF circuits
- Digital still camera
- Network security
- Switching regulators

Benefits

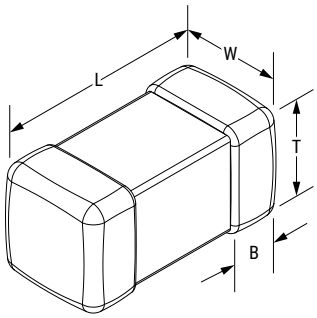
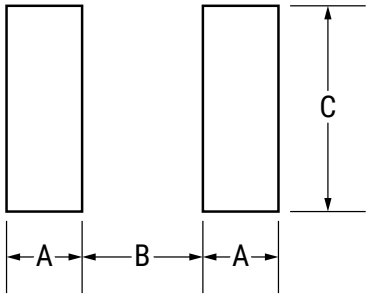
- Large withstand current
- High reliability and resistance to high energy
- Low stray capacitance due to wire wound structure
- Several material variations available to suit application requirements
- Impedance value from 8 – 110 Ω
- Rated current range from 4 – 6 A
- Operating temperature range from −40°C to +125°C



Part Number System

Z	1206	C	800	A	PWS	T
Ferrite Bead	EIA Case Size (L" x W")	Specification	Impedance Value (Ω) at 100 MHz	Material	Series	Packaging
	0603 (1608 in mm) 0805 (2012 in mm) 1206 (3216 in mm) 1806 (4516 in mm)	C = Commercial	R = decimal point Examples: 8R0 = 8.0 Ω The first two digits represent the impedance value. The third digit inidcates the number of zeros to be added. Examples: 800 = 80 Ω 111 = 110 Ω	A = Broadband applications B = MHz range applications G = GHz range applications	PWS = Power Line Ferrite Chip Beads	T = Tape & Reel

Dimensions – Millimeters (Inches)

Dimensions - Millimeters (Inches)						Land Pattern - Millimeters		
								
EIA Size Code	**Metric Size Code**	**L Length**	**W Width**	**T Thickness**	**B Bandwidth**	**A**	**B**	**C**
0603	1608	1.60 (0.063) ±0.2 (0.008)	0.80 (0.031) ±0.2 (0.008)	0.80 (0.031) ±0.2 (0.008)	0.30 (0.012) ±0.20 (0.008)	1.0	1.0	1.0
0805	2012	2.00 (0.079) ±0.20 (0.008)	1.25 (0.049) ±0.20 (0.008)	0.85 (0.033) ±0.2 (0.008)	0.50 (0.020) ±0.30 (0.012)	1.4	1.2	1.7
1206	3216	3.20 (0.126) ±0.30 (0.012)	1.60 (0.063) ±0.20 (0.008)	1.10 (0.043) ±0.2 (0.008)	0.50 (0.020) ±0.30 (0.012)	1.4	2.2	2.0
1806	4516	4.50 (0.177) ±0.30 (0.012)	1.60 (0.063) ±0.20 (0.008)	1.10 (0.043) ±0.2 (0.008)	0.50 (0.020) ±0.30 (0.012)	1.75	3.5	2.0

Performance Characteristics

Item	Performance Characteristics
Impedance Range	8 – 110 Ω, at 100 MHz
Impedance Tolerance	±25% and ±30%
Rated Current Range	4 – 6 A maximum
Rated DC Resistance Range	0.004 – 0.014 Ω maximum
Operating Temperature Range	-40°C to +125°C (includes self temperature rise)

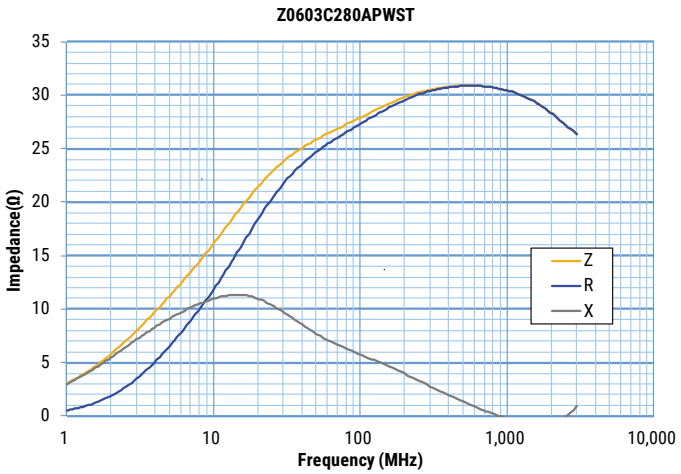
Environmental Compliance

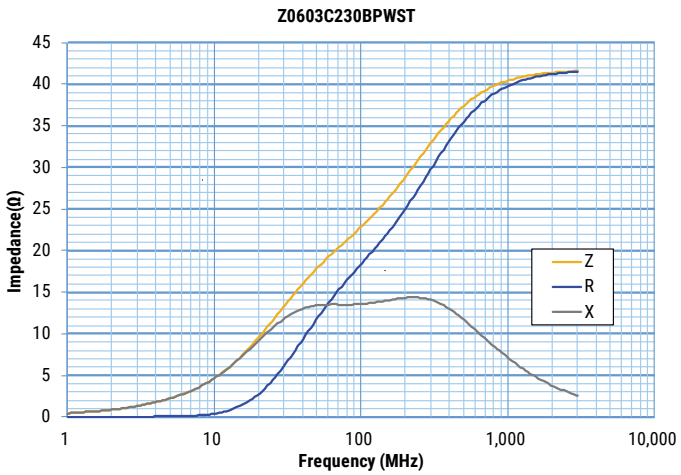
All KEMET Ferrite Beads are RoHS and REACH Compliant.

Table 1 – Ratings & Part Number Reference

Part Number	Impedance (Ω) at 100 MHz	Impedance Tolerance	Rated Current (A) Maximum	DC Resistance (Ω) Maximum
Z0603C280APWST	28	± 30 %	4	0.007
Z0603C230BPWST	23	± 30 %	4	0.007
Z0805C250APWST	25	± 30 %	6	0.004
Z0805C420APWST	42	± 25 %	4	0.008
Z0805C210BPWST	21	± 30 %	6	0.004
Z0805C330BPWST	33	± 25 %	4	0.008
Z0805C8R0GPWST	8	± 30 %	4	0.008
Z1206C480APWST	48	± 30 %	6	0.005
Z1206C800APWST	80	± 25 %	4	0.010
Z1206C380BPWST	38	± 30 %	6	0.005
Z1206C600BPWST	60	± 25 %	4	0.010
Z1806C720APWST	72	± 30 %	6	0.007
Z1806C111APWST	110	± 25 %	4	0.014
Z1806C560BPWST	56	± 30 %	6	0.007
Z1806C900BPWST	90	± 25 %	4	0.014
Part Number	**Impedance**	**Impedance Tolerance**	**Rated Current**	**DC Resistance**

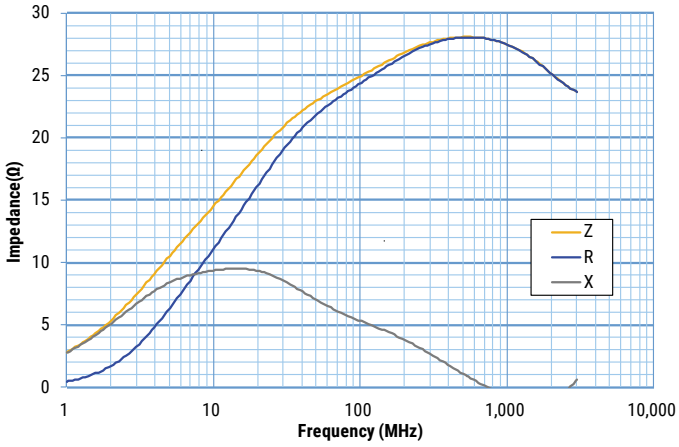
Frequency Characteristics



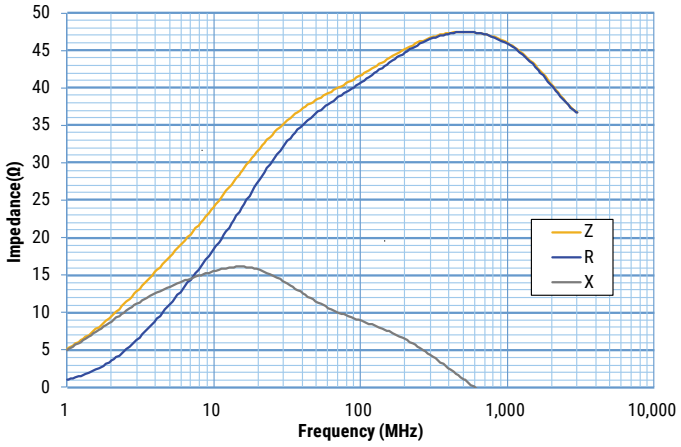


Frequency Characteristics cont.

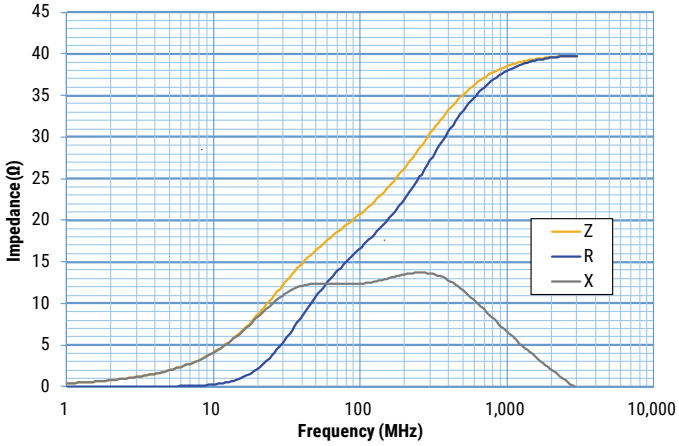
Z0805C250APWST



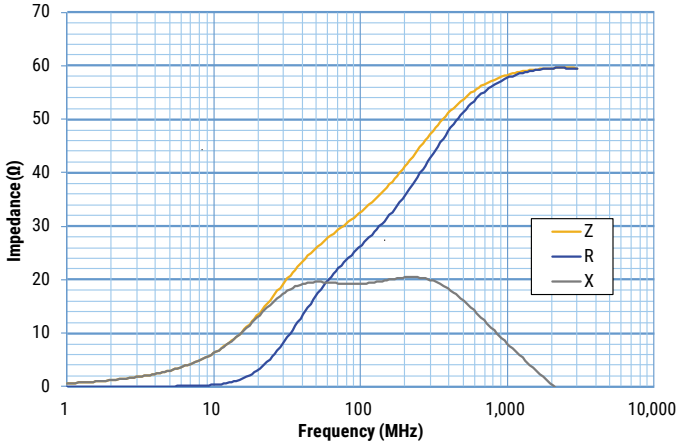
Z0805C420APWST



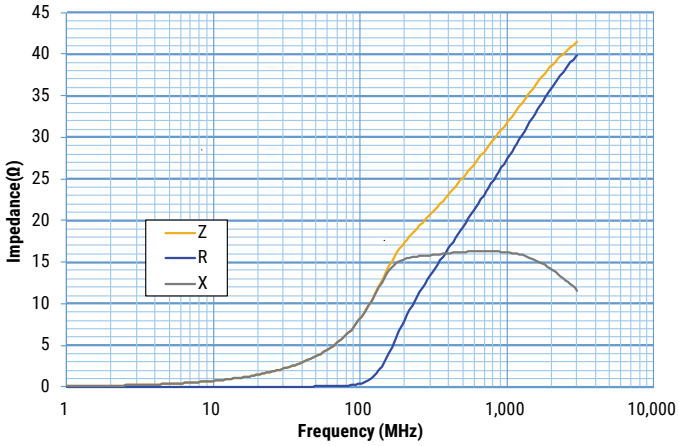
Z0805C210BPWST



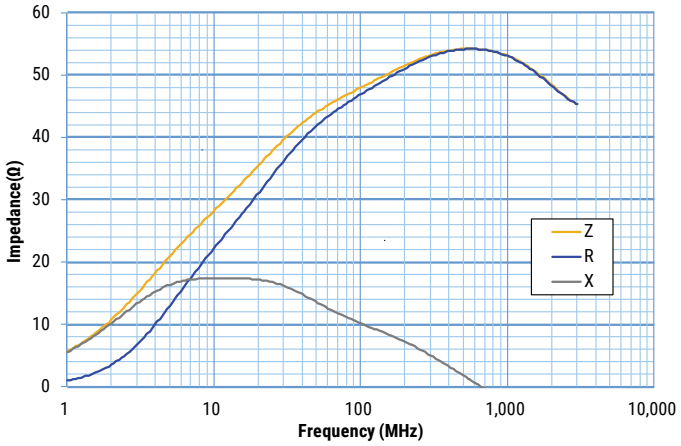
Z0805C330BPWST



Z0805C8R0GPWST

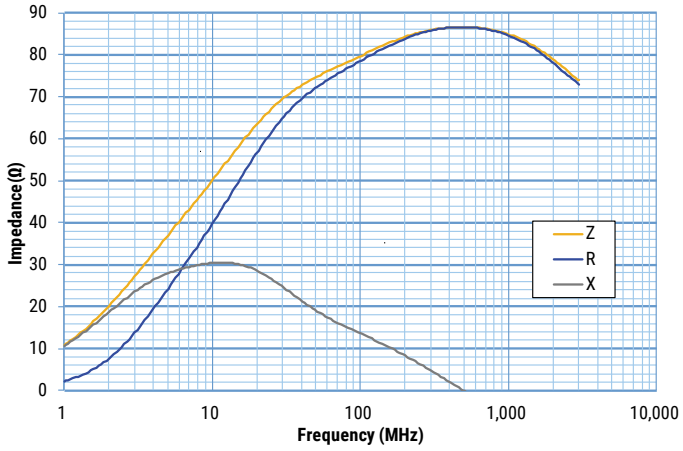


Z1206C480APWST

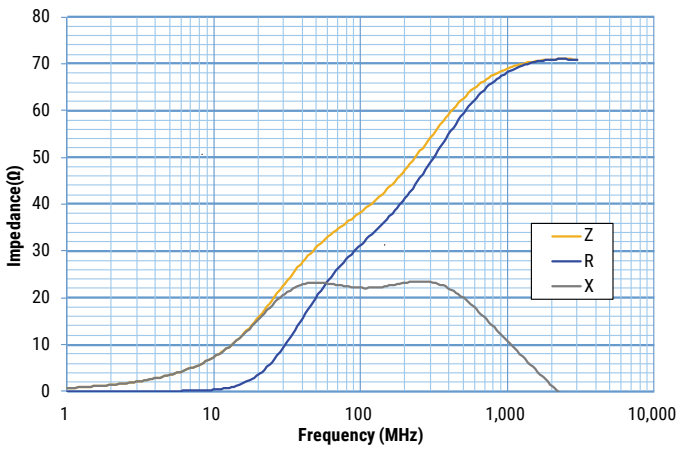


Frequency Characteristics cont.

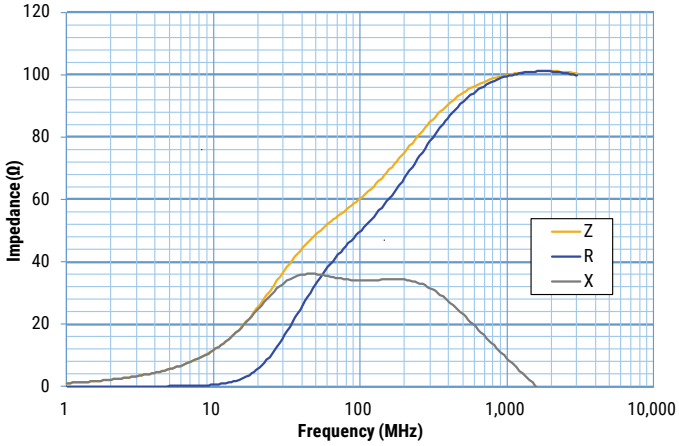
Z1206C800APWST



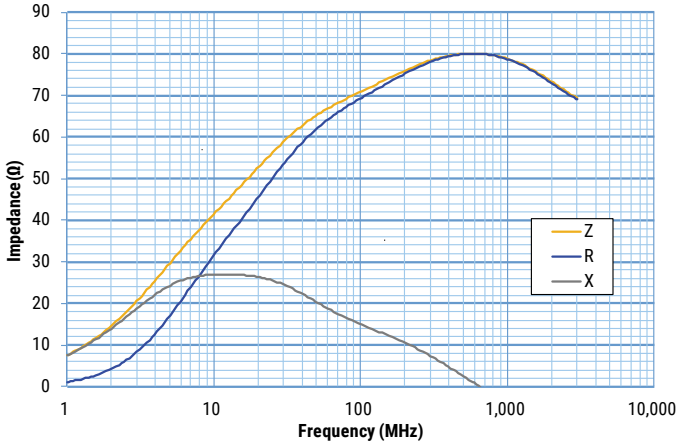
Z1206C380BPWST



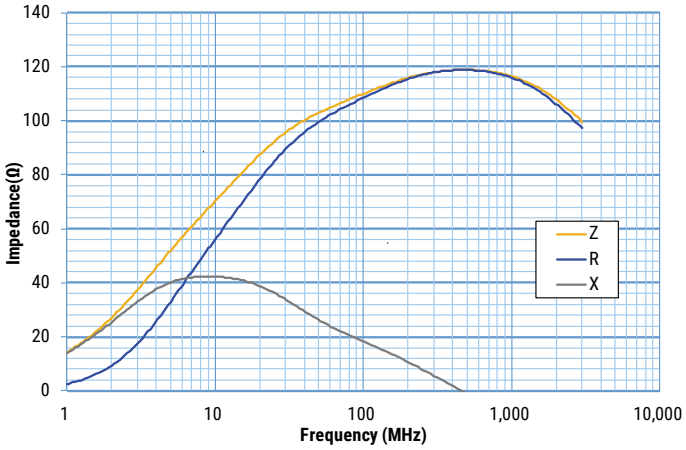
Z1206C600BPWST



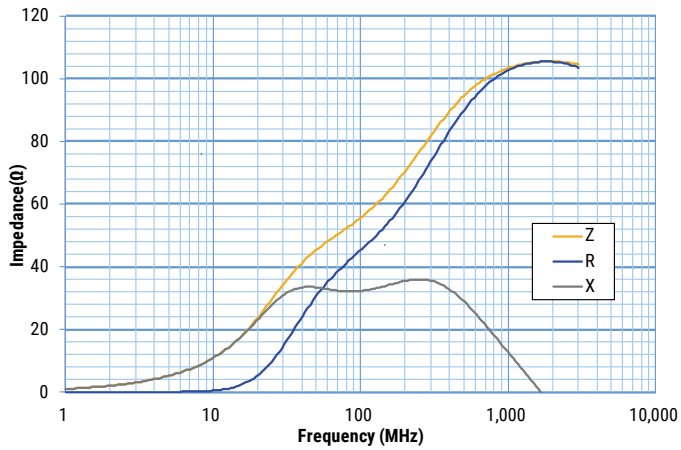
Z1806C720APWST



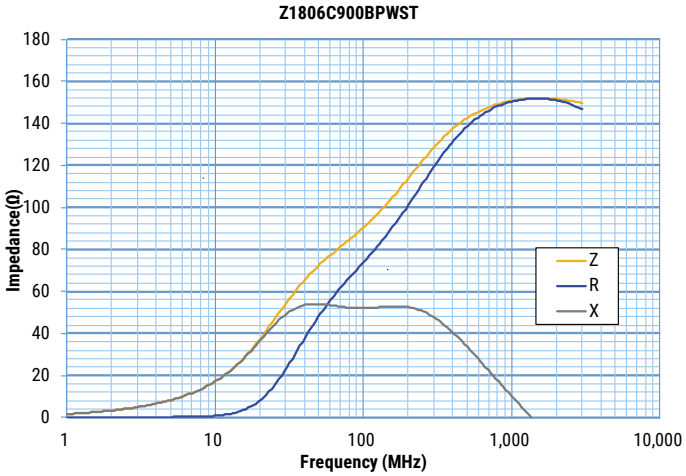
Z1806C111APWST



Z1806C560BPWST

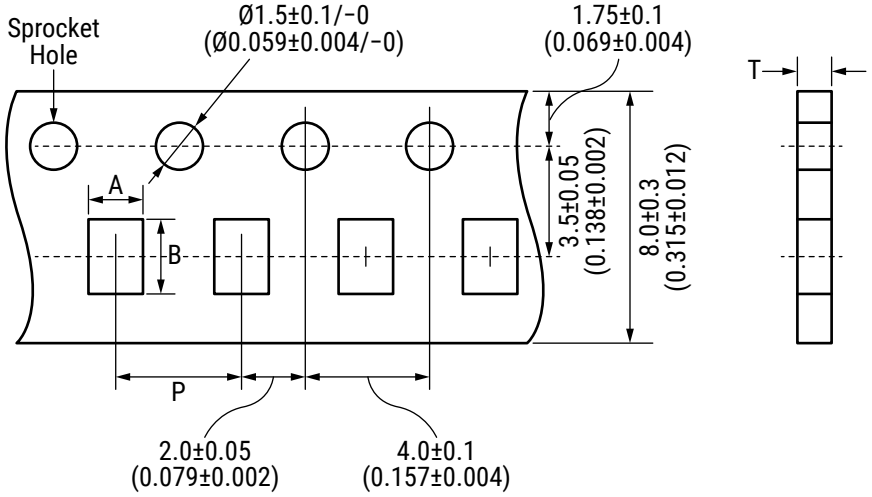


Frequency Characteristics cont.



Taping Specifications - Millimeters (Inches)

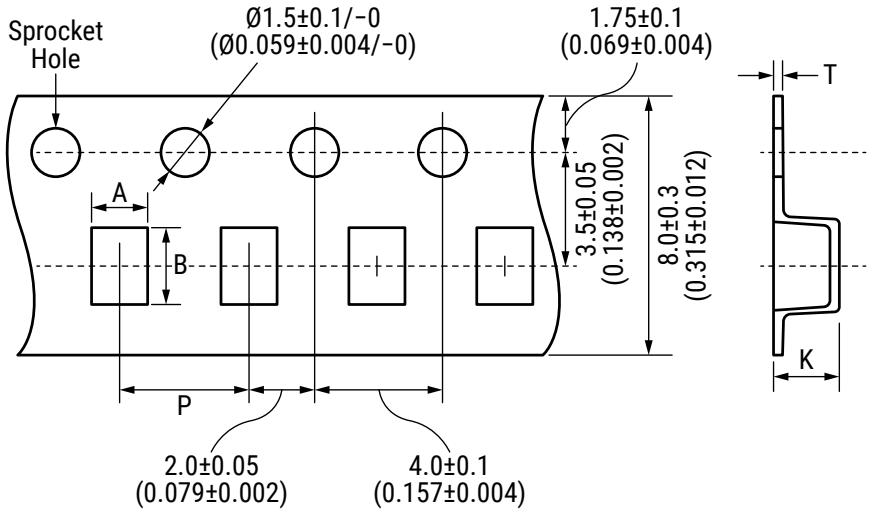
0603, 0805 Paper Tape 8mm Width



EIA Case Size	Metric Case Size	Height	Reel Quantity		Cavity		Pitch	Thickness
					A	B	P	T
0603	1608	0.8	4,000	Nominal	1.0	1.8	4.0	1.1
				Tolerance	±0.2	±0.2	±0.2	Maximum
0805	2012	0.85	4,000	Nominal	1.5	2.3	4.0	1.1
				Tolerance	±0.2	±0.2	±0.2	Maximum

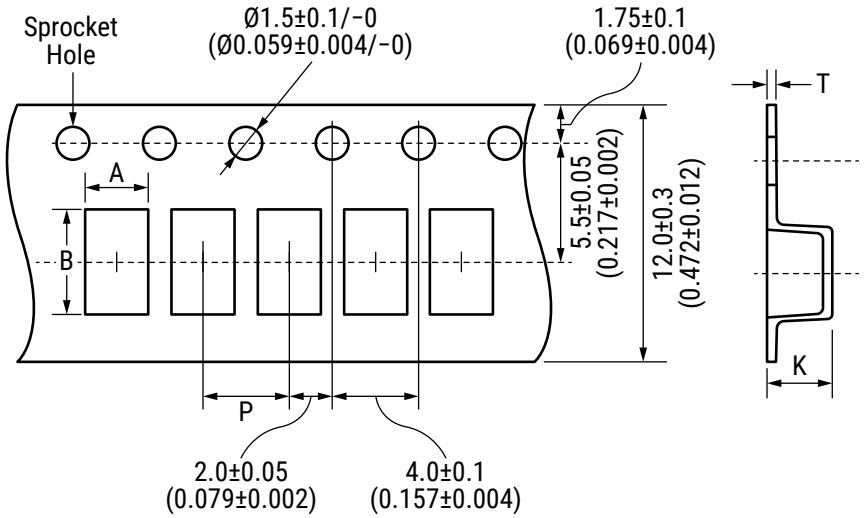
Taping Specifications - Millimeters (Inches) cont.

1206 Embossed (Plastic) Tape 8mm Width



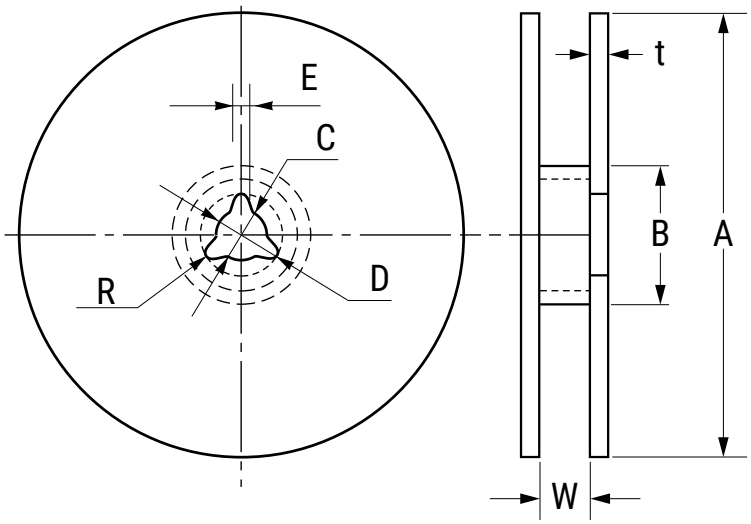
EIA Case Size	Metric Case Size	Height	Reel Quantity		Cavity		Pitch	Thickness	
					A	B	P	T	K
1206	3216	1.1	2,000	Nominal	1.9	3.5	4.0	0.3	1.5
				Tolerance	±0.2	±0.2	±0.2	Maximum	Maximum

1806 Embossed (Plastic) Tape 12 mm Width



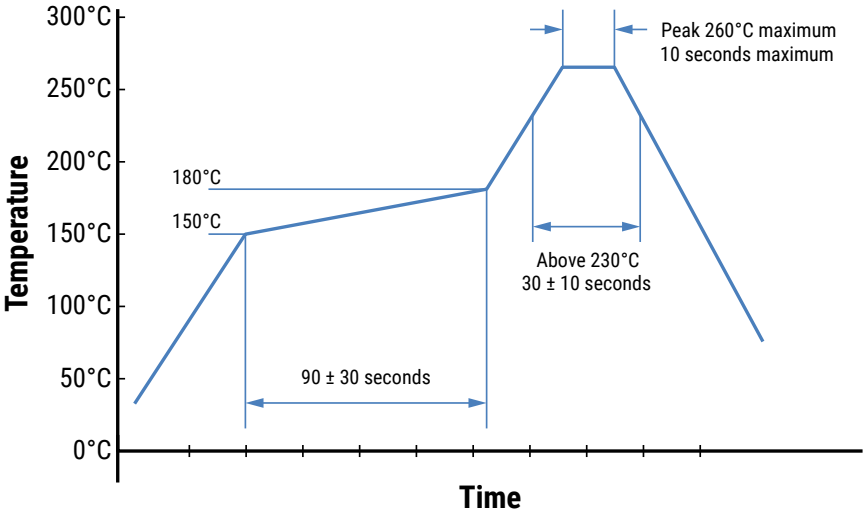
EIA Case Size	Metric Case Size	Height	Reel Quantity		Cavity		Pitch	Thickness	
					A	B	P	T	K
1806	4516	1.1	2,000	Nominal	1.9	4.9	4.0	0.3	1.5
				Tolerance	±0.2	±0.2	±0.2	Maximum	Maximum

Reel Specifications - Millimeters



EIA Case Size		Dimensions - Millimeters							
		A	B	C	D	E	R	t	W
0603 0805 1206	Nominal	ø180.0	ø60.0	ø13.0	ø21.0	2.0	1.0	2.5	10.0
	Tolerance	+0, −3	+1, −0	±0.5	±0.8	±0.5		Maximum	±1.5
1806	Nominal	ø180.0	ø60.0	ø13.0	ø21.0	2.0	1.0	2.5	14.0
	Tolerance	+0, −3	+1, −0	±0.5	±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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