Company Overview

AEM, is a global manufacturer redefining the standards of quality and value in the electronic components industry with its leading edge technologies.

History

AEM, was founded in 1986. Phenomenal growth since its inception has ranked AEM three times among the ***Inc. 500*** listing of "America's Fastest-Growing Private Companies". AEM's outstanding achievements earned a U.S. presidential commendation letter from then President Bill Clinton.

In 1995, AEM merged the key technical staff of Wallace Technical Ceramics, Inc. That same year, AEM acquired the Mepcopal high-reliability thick-film fuse line from Philips/ Copal. These mergers and acquisitions represented a logical combination of assets and technical abilities to achieve a full spectrum of passive components with superior multilayer ceramic-based technologies.

Since 1995, AEM has used its technological expertise to successfully grow its current limiting micro-fuse production and holds a dominant position in the circuit protection market in the aerospace industry. In 1996, AEM became the first US corporation to start mass production of ferrite chip beads, power beads, and ferrite/ceramic inductors in its San Diego facility. AEM is also the world's sole manufacturer of high-reliability ferrite chip beads designed for the space and military use.

In 2004, AEM launched a new product line of SolidMatrix® surface mount chip fuses which combined AEM's strengths in both circuit protective and multilayer components manufacturing. Today, AEM's Electronic Components Division is poised to become one of the top five global suppliers of SMT multilayer ceramic inductive and circuit protective components in the new millennium.

The Headquarters and Research & Development

The global headquarters and R&D Center of AEM are located in Sorrento Valley, San Diego, California's "Telecomm Valley". The Factory and Engineering locations include the San Diego facility and a new Suzhou Engineering Center and Manufacturing Base in China-Singapore Suzhou Industrial Park.

Products & Services

AEM's products are used globally for EMI signal filtering and circuit protection in the telecommunication, PC, consumer electronics, and automotive industries.

Inc 500 3-Time Winner

ISO 9001 Certified

AEM's products and services include the following:

- *Multilayer Ferrite Chip Beads/Power Beads;*
- *Multilayer Ferrite/Ceramic Inductors;*
- *SolidMatrix® Surface Mount Chip Fuses;*
- *Multilayer Varistors;*

Mission

Our mission goal is to build lasting partnerships with the customers, vendors, employees, and share holders. We are committed to constantly striving for excellence and perfection in providing products and services with the highest
quality and values.

Contents

458 Shenhu Road, Suzhou Industrial Park Jiangsu, P.R. China **www.aemchina.com** Phone: 86-512-62580028, Fax: 86-512-62580018
6670 Cobra Way, San Diego, CA 92121 **www.aemcomponents.com** Phone: 858-750-6100, FAX: 858-481-1545

Contents (cont.)

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Products Overview and Applications

AEM was the first in the U.S. to start mass production of ferrite beads and ferrite/ceramic inductors using a wet multilayer process. AEM's proprietary materials (inks and pastes), patented processes (US Patent Number 5,650,199) and custom production equipment are the cornerstones for mass producing high quality ferrite and ceramic inductive components.

Features

Monolithic structure for closed magnetic path and high reliability
Standard EIA/EIAJ chip sizes such as 0402/1005, 0603/1608, 0805/2012, and 1206/3216
A complete set of ferrite/ceramics and electrode materials providing a wide range of electrical properties
Superior termination bonding strength
Nickel barrier with solder overplated termination offering excellent solderability and solder leach resistance, suitable for both wave and reflow soldering processes

Applications

Computers and Peripherals
Video cards, sound cards, fax/modem cards, printers, keyboards, network interface cards, PDAs (personal digital assistants), and notebook computers
Tele Communications
Multi-port modems, frame relays, central office relays, subscription group carrier, T1 & E1 MUXs, EA PBX equipment, cellular phones, mobile telephone switching, cellular phone base station and switching, PHS (personal handy phones), and residential and business phones
Data Communications
Bridges, LANs, modems, repeaters, routers, hubs, concentrators, network I/F cards, and data switches
Consumer Electronics
VCRs, audio, electronic entertainment equipment, car navigation systems, radar detectors, CB & FM radios, CATV, set-top boxes, DSS set-top boxes, electronic games, digital TVs, and DVDs

AEM's inductive components are used for noise limiting and separation, tuning and matching circuits, and in many other circuits requiring inductance.

AEM's ferrite chip beads have high impedance at 100 MHz and are used for noise suppression. Ferrite beads installed in series with signal and/or power circuits suppress high frequency noise. The noise is converted into heat because of the hysteresis loss in the ferrite material. By selecting the appropriate impedance value, an insertion loss between 3 to 18 dB can be achieved using a single chip bead without the need for a ground termination. Typical chip bead suppression frequency ranges from 1 to 1,000 MHz and rated currents are from 0.1 to 4.0 amps.

AEM's ferrite chip inductors have been used in T, Pi, or L type LC noise separation circuits with capacitors. Because of the tight tolerances and high Q values of AEM's inductors, very steep attenuation and high insertion losses of up to 100 dB can be achieved. Our ferrite inductors have Q values from 15 to 45, measured at frequencies from 0.4 to 50 MHz and self-resonant frequencies in a range from 13 to 320 MHz.

The ceramic chip inductors can be used at frequencies up to 8 GHz with Q values from 10 to 15 at 100 MHz and from 16 to 46 at 800 MHz.

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Multilayer Ferrite Chip Beads

Features

- Monolithic structure for closed magnetic path and high reliability
- Standard EIA/EIAJ chip sizes such as 0402/1005, 0603/1608, 0805/2012, and 1206/3216
- A complete set of ferrite and electrode materials providing a wide range of electrical properties
- Superior termination bonding strength
- Nickel barrier with solder overplated termination offering excellent solderability and solder leach resistance, suitable for both wave and reflow soldering processes
- RoHS compliant when -T option is specified

Applications

- Noise suppression in computers and peripherals
- Noise suppression in telecommunications
- Noise suppression in data communications

Operating Temperature

-55ºC — +125ºC

Product Identification

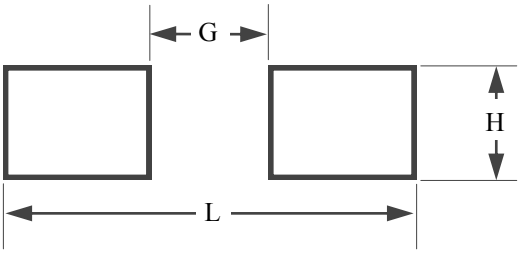
MCB 0805 G 101 P T - T
(1) (2) (3) (4) (5) (6) (7)

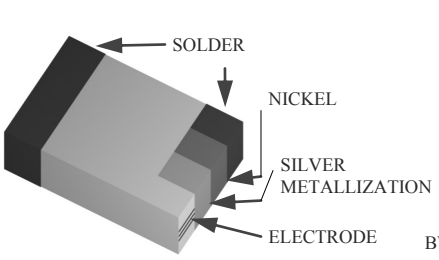
(1) Series code:
MCB: Multilayer Ferrite Chip Bead
(2) Dimensions: L x W inches
The first two digits: L (length)
The last two digits: W (width)
(3) Characteristic code: F, G
(4) Value code: Impedance (ohms at 100 MHz)
The first two digits are significant. The last digit specifies the number of zeros to follow.
(5) Tolerance code:
P = ±25%
Other tolerances may be available upon request.
(6) Package code:
T = Tape & Reel
B = Bulk
(7) Termination type code:
T = 100% Sn plating

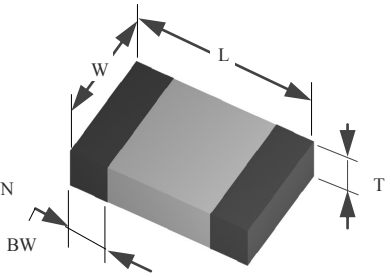
Recommended PC Board Land Patterns

CHIP SIZE EIA/EIAJ	L INCH (mm)	G INCH (mm)	H INCH (mm)
0402(1005)	0.063 (1.60)	0.016 (0.40)	0.024 (0.60)
0603(1608)	0.102 (2.60)	0.022 (0.55)	0.037 (0.94)
0805(2012)	0.118 (3.00)	0.026 (0.66)	0.057 (1.45)
1206(3216)	0.173 (4.40)	0.059 (1.50)	0.071 (1.80)
1210(3225)	0.173 (4.40)	0.059 (1.50)	0.106 (2.70)
1806(4516)	0.217 (5.50)	0.110 (2.80)	0.071 (1.80)
1812(4532)	0.217 (5.50)	0.110 (2.80)	0.134 (3.40)

Shape and Dimensions







CHIP SIZE EIA/EIAJ	LENGTH (L) INCH (mm)	WIDTH (W) INCH (mm)	THICKNESS (T) INCH (mm)	TERMINATION (BW) INCH (mm)
0402/1005	0.039 ± 0.004 (1.00 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)
0603/1608	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.014 ± 0.006 (0.36 ± 0.15)
0805/2012	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.035 ± 0.008 (0.90 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1206/3216	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.043 ± 0.008 (1.10 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1210/3225	0.126 ± 0.008 (3.20 ± 0.20)	0.098 ± 0.008 (2.50 ± 0.20)	0.051 ± 0.008 (1.30 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1806/4516	0.177 ± 0.010 (4.50 ± 0.25)	0.063 ± 0.008 (1.60 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1812/4532	0.177 ± 0.010 (4.50 ± 0.25)	0.126 ± 0.008 (3.20 ± 0.20)	0.059 ± 0.008 (1.50 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)

Other sizes and values may be available upon customer's request.

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MCB Series (General Use)

AEM Part Number	Z@100MHz Ω	Tolerance	Max. R_{DC} Ω	Max. I A
MCB0402G100	10	P	0.05	0.60
MCB0402G300	30	P	0.30	0.40
MCB0402G600	60	P	0.40	0.35
MCB0402G700	70	P	0.40	0.35
MCB0402G800	80	P	0.40	0.35
MCB0402G121	120	P	0.50	0.30
MCB0402G221	220	P	0.70	0.20
MCB0402G301	300	P	0.80	0.20
MCB0402G451	450	P	0.80	0.20
MCB0402G601	600	P	1.00	0.15
MCB0402G102	1000	P	1.50	0.10
MCB0603G100	10	P	0.10	0.60
MCB0603G300	30	P	0.10	0.60
MCB0603G600	60	P	0.10	0.60
MCB0603G800	80	P	0.15	0.60
MCB0603G101	100	P	0.25	0.40
MCB0603G121	120	P	0.25	0.40
MCB0603G181	180	P	0.30	0.40
MCB0603G221	220	P	0.30	0.40
MCB0603G301	300	P	0.40	0.30
MCB0603G451	450	P	0.50	0.30
MCB0603G601	600	P	0.50	0.30
MCB0603G102	1000	P	0.70	0.25
MCB0603G152	1500	P	1.00	0.15
MCB0805F110	11	P	0.10	0.80
MCB0805F300	30	P	0.10	0.80
MCB0805F500	50	P	0.10	0.80
MCB0805F600	60	P	0.10	0.80
MCB0805F800	80	P	0.15	0.60
MCB0805G101	100	P	0.15	0.60
MCB0805G121	120	P	0.15	0.60
MCB0805G151	150	P	0.25	0.50
MCB0805G201	200	P	0.30	0.40
MCB0805G301	300	P	0.30	0.40
MCB0805G401	400	P	0.30	0.40
MCB0805G601	600	P	0.30	0.40
MCB0805G102	1000	P	0.40	0.30

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MCB Series (General Use)

AEM Part Number	*Z@100MHz Ω*	*Tolerance*	*Max. R_{DC} Ω*	*Max. I A*
MCB1206F190	19	P	0.05	0.80
MCB1206F300	30	P	0.05	0.80
MCB1206F500	50	P	0.10	0.60
MCB1206F600	60	P	0.10	0.60
MCB1206F101	100	P	0.15	0.60
MCB1206F121	120	P	0.15	0.60
MCB1206F151	150	P	0.15	0.60
MCB1206F201	200	P	0.20	0.50
MCB1206F301	300	P	0.20	0.50
MCB1206F601	600	P	0.30	0.40
MCB1206G102	1000	P	0.40	0.30
MCB1206G152	1500@50MHz	P	0.40	0.30

Please add tolerance, packaging and termination type codes when ordering.

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Electrical Characteristics

(Curves not listed are available upon request)

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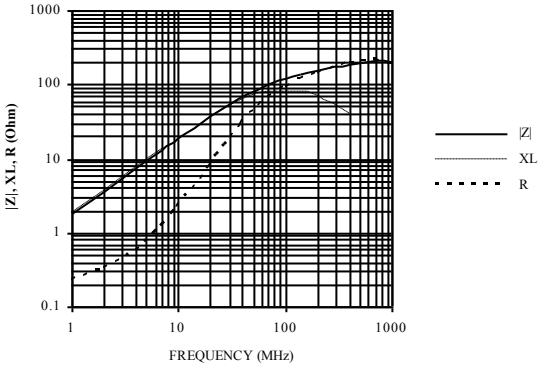

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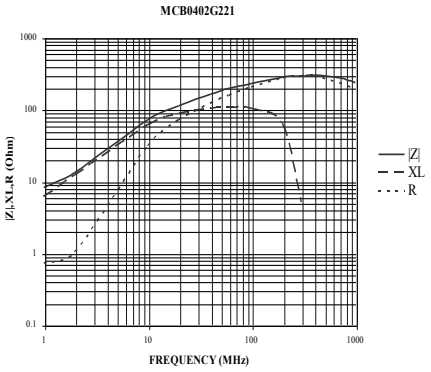

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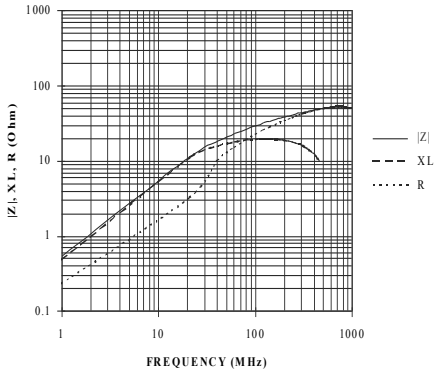

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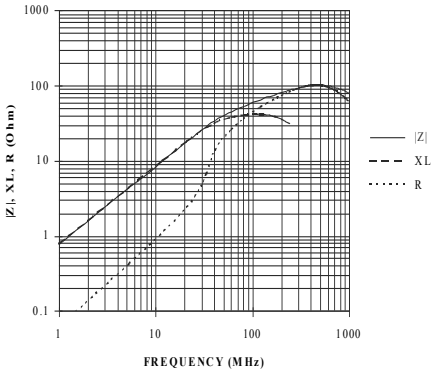

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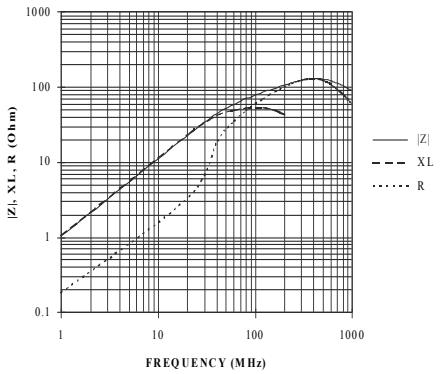

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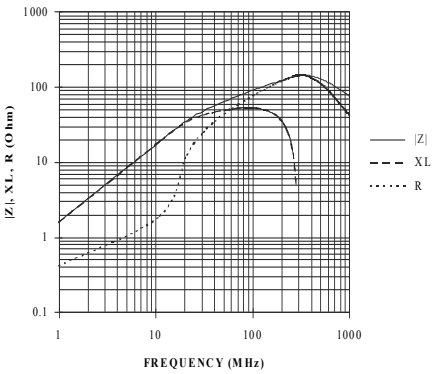

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Electrical Characteristics

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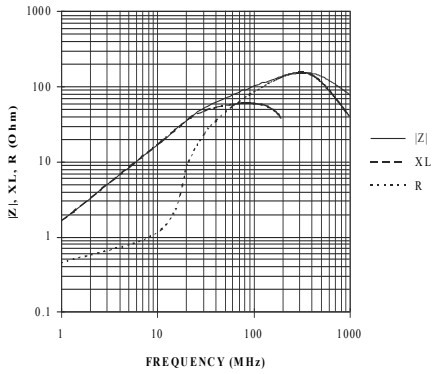

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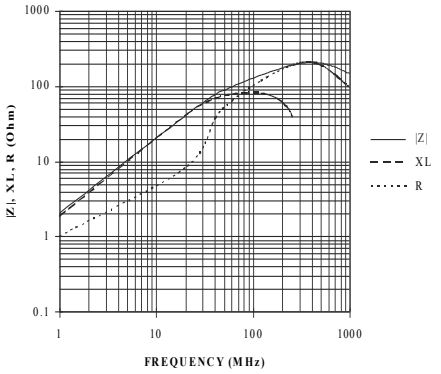

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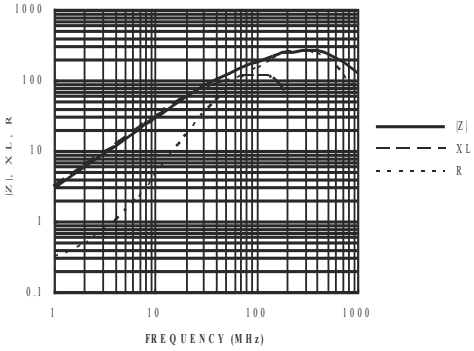

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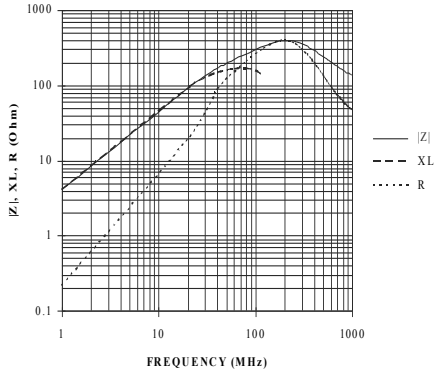

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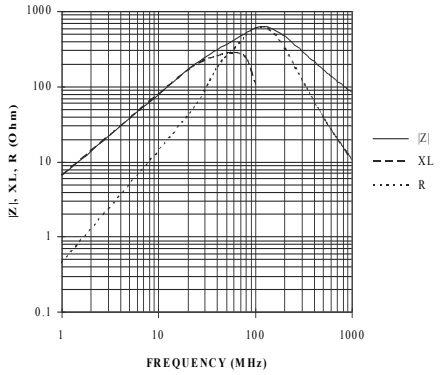

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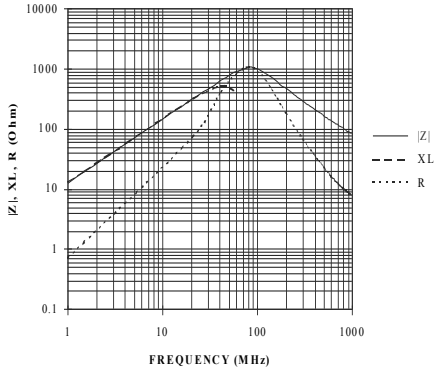

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Electrical Characteristics

(Curves not listed are available upon request)

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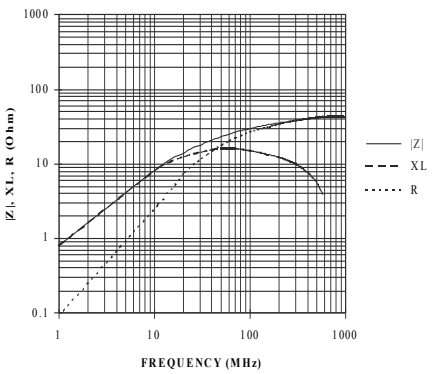

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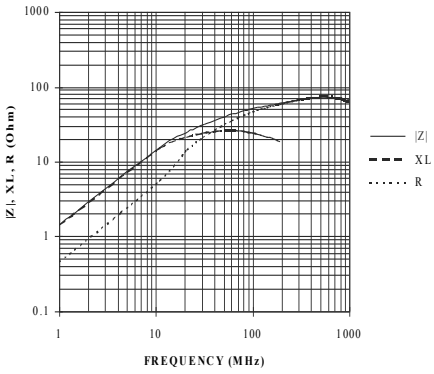

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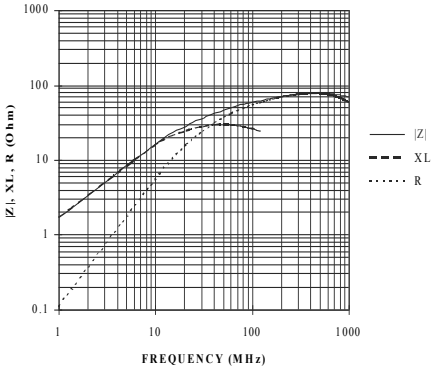

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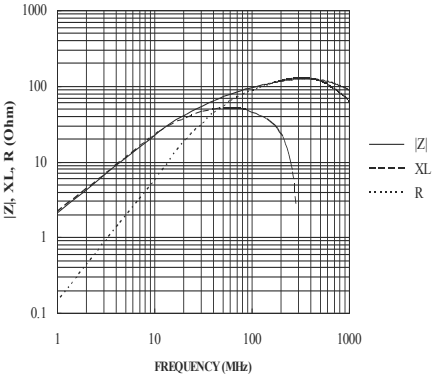

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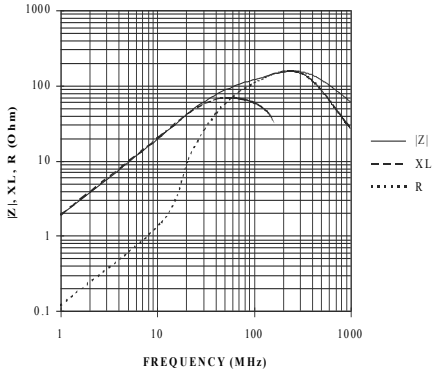

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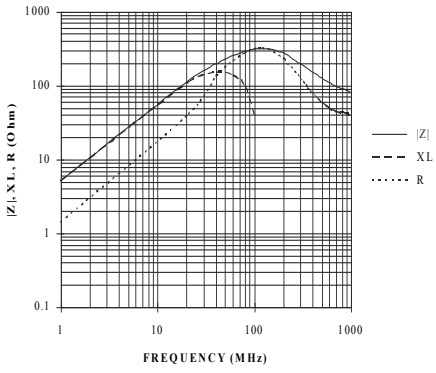

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Electrical Characteristics

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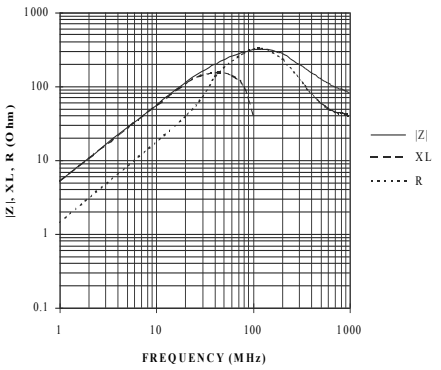

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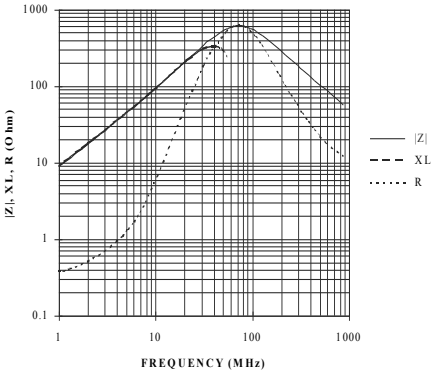

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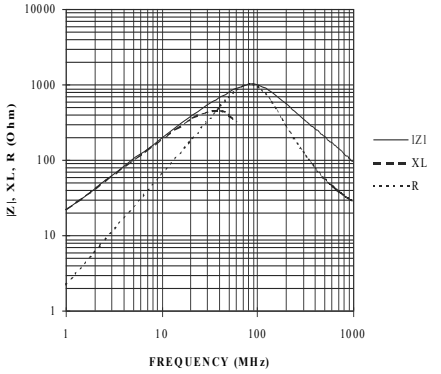

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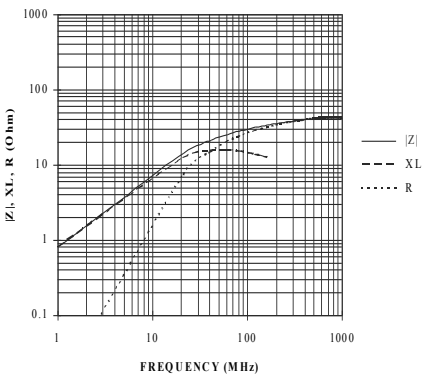

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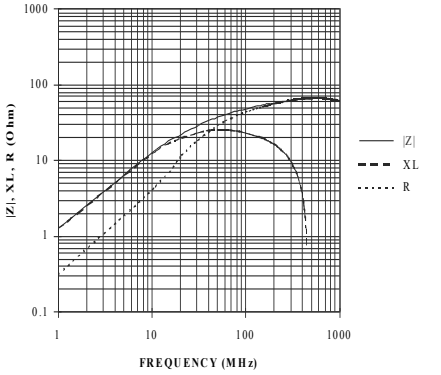
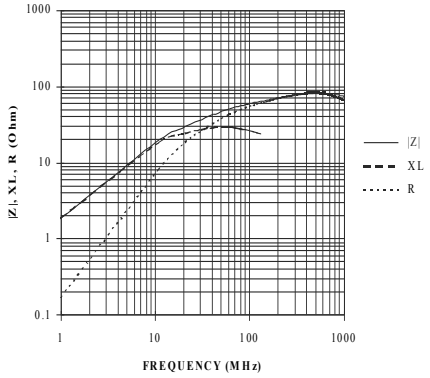


MCB 1206F600



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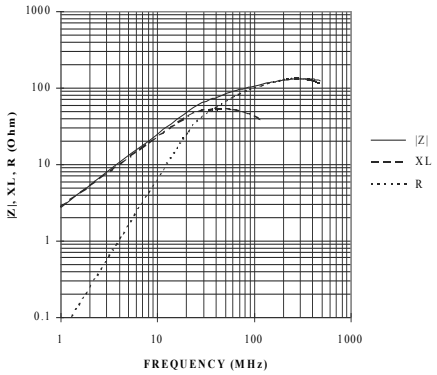
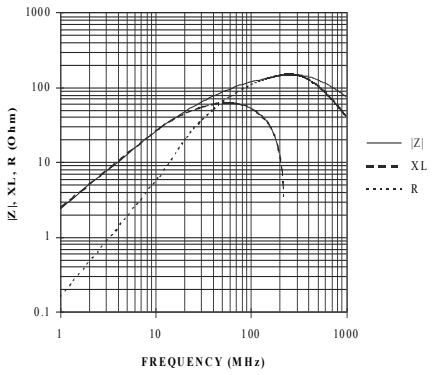
Electrical Characteristics

(Curves not listed are available upon request)

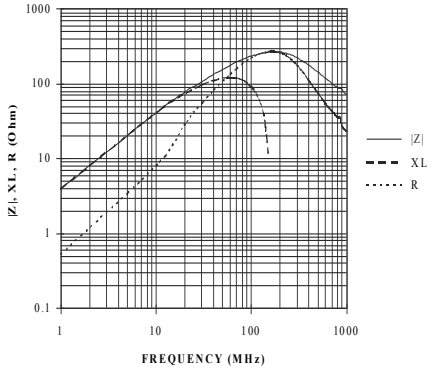
MCB 1206F101



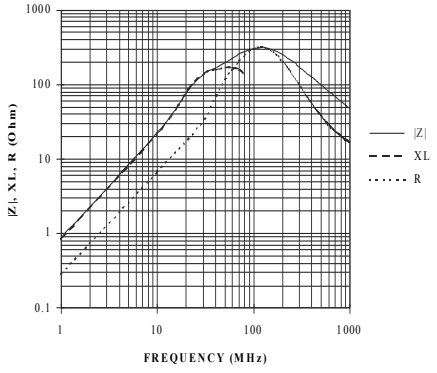
MCB 1206F121



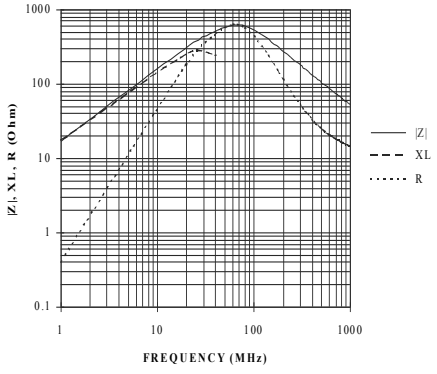
MCB 1206F201



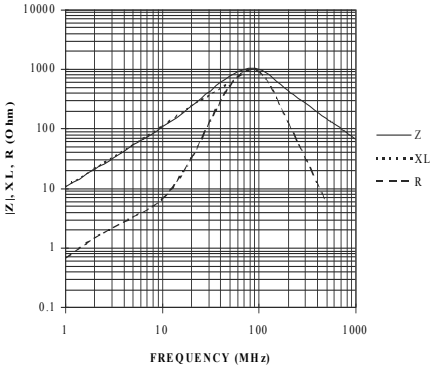
MCB 1206F301



MCB 1206F601



MCB 1206G102



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Multilayer Ferrite Chip Beads (High Speed)

Features

- Monolithic structure for closed magnetic path and high reliability
- Standard EIA/EIAJ chip sizes such as 0402/1005, 0603/1608, 0805/2012, and 1206/3216
- Superior termination bonding strength
- Nickel barrier with solder overplated termination offering excellent solderability and solder leach resistance, suitable for both wave and reflow soldering processes
- RoHS compliant when -T option is specified

Applications

- High frequency noise suppression in computers and peripherals
- High frequency noise suppression in telecommunications
- High frequency noise suppression in data communications
- High frequency noise suppression in consumer electronics

Operating Temperature

-55ºC — +125ºC

Product Identification

MCB 0805 S 121 P T - T

(1) (2) (3) (4) (5) (6) (7)

(1) Series code:
MCB: Multilayer Ferrite Chip Bead

(2) Dimensions: L x W inches
The first two digits: L (length)
The last two digits: W (width)

(3) Characteristic code: S

(4) Value code: Impedance (ohms at 100 MHz)
The first two digits are significant. The last digit specifies the number of zeros to follow.

(5) Tolerance code:
P = ±25%
Other tolerances may be available upon request.

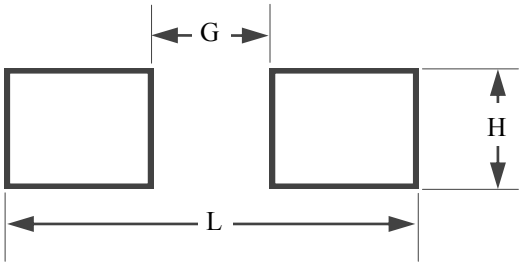
(6) Package code:
T = Tape & Reel
B = Bulk

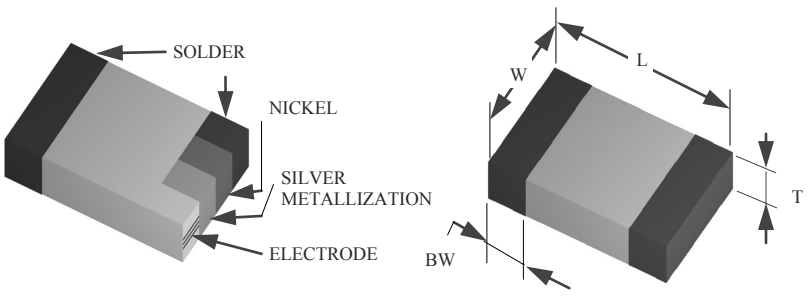
(7) Termination type code:
T = 100% Sn plating

Recommended PC Board Land Patterns

CHIP SIZE EIA/EIAJ	L INCH (mm)	G INCH (mm)	H INCH (mm)
0402(1005)	0.063 (1.60)	0.016 (0.40)	0.024 (0.60)
0603(1608)	0.102 (2.60)	0.022 (0.55)	0.037 (0.94)
0805(2012)	0.118 (3.00)	0.026 (0.66)	0.057 (1.45)
1206(3216)	0.173 (4.40)	0.059 (1.50)	0.071 (1.80)

Shape and Dimensions





CHIP SIZE EIA/EIAJ	LENGTH (L) INCH (mm)	WIDTH (W) INCH (mm)	THICKNESS (T) INCH (mm)	TERMINATION (BW) INCH (mm)
0402/1005	0.039 ± 0.004 (1.00 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)
0603/1608	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.014 ± 0.006 (0.36 ± 0.15)
0805/2012	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.035 ± 0.008 (0.90 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1206/3216	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.043 ± 0.008 (1.10 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)

Other sizes and values may be available upon customer's request.

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MCB Series (High Speed)

AEM Part Number	Z@100MHz Ω	Tolerance	Max. R_{DC} Ω	Max. I A
MCB0402S100	10	P	0.20	0.40
MCB0402S300	30	P	0.20	0.40
MCB0402S600	60	P	0.30	0.35
MCB0402S800	80	P	0.40	0.30
MCB0402S121	120	P	0.40	0.20
MCB0402S221	220	P	0.60	0.20
MCB0402S301	300	P	1.00	0.20
MCB0402S601	600	P	1.20	0.20
MCB0603S100	10	P	0.10	0.60
MCB0603S300	30	P	0.20	0.50
MCB0603S600	60	P	0.25	0.40
MCB0603S800	80	P	0.25	0.40
MCB0603S101	100	P	0.30	0.40
MCB0603S121	120	P	0.30	0.40
MCB0603S221	220	P	0.35	0.30
MCB0603S301	300	P	0.35	0.30
MCB0603S601	600	P	0.50	0.20
MCB0603S102	1000	P	0.60	0.20
MCB0805S110	11	P	0.10	0.80
MCB0805S300	30	P	0.15	0.60
MCB0805S600	60	P	0.15	0.60
MCB0805S121	120	P	0.20	0.50
MCB0805S221	220	P	0.30	0.40
MCB0805S301	300	P	0.30	0.40
MCB0805S601	600	P	0.35	0.30
MCB0805S102	1000	P	0.40	0.20
MCB1206S300	30	P	0.15	0.60
MCB1206S600	60	P	0.15	0.60
MCB1206S800	80	P	0.15	0.60
MCB1206S121	120	P	0.20	0.50
MCB1206S221	220	P	0.30	0.40
MCB1206S301	300	P	0.30	0.40
MCB1206S601	600	P	0.35	0.30
MCB1206S102	1000	P	0.40	0.30

Please add tolerance, packaging and termination type codes when ordering.

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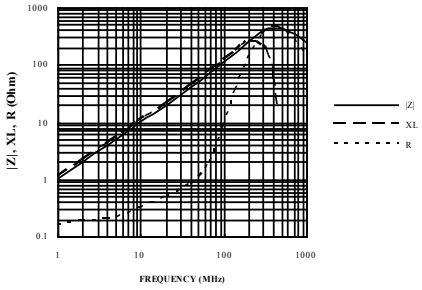
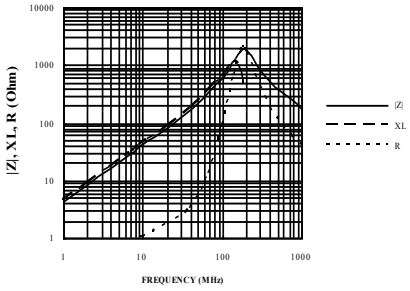
Electrical Characteristics

(Curves not listed are available upon request)

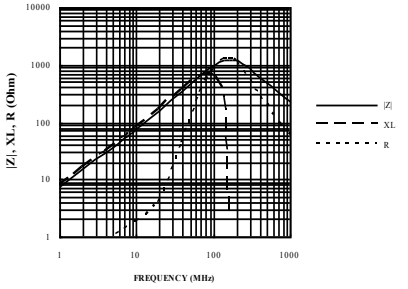
MCB0603S121



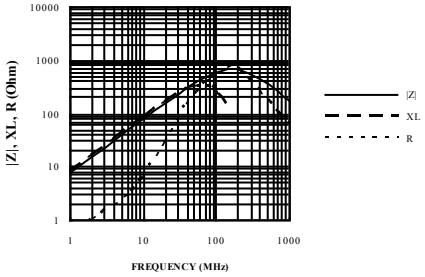
MCB0603S601



MCB0603S102



MCB0805S601



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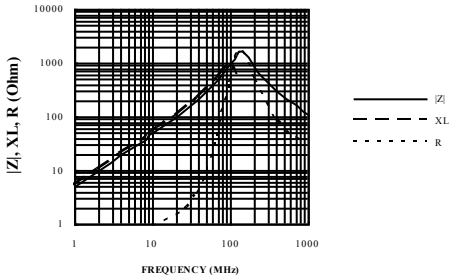
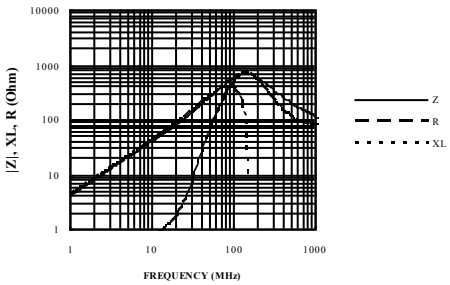


MCB1206S601



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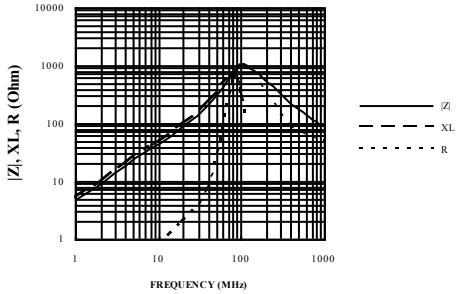

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Multilayer Ferrite Power Beads

Features

- Monolithic structure for closed magnetic path and high reliability
- Maximum permissible currents up to 4A
- Standard EIA/EIAJ chip sizes such as 0603/1608, 0805/2012, and 1206/3216
- Superior termination bonding strength
- Nickel barrier with solder overplated termination offering excellent solderability and solder leach resistance, suitable for both wave and reflow soldering processes
- RoHS compliant when -T option is specified

Applications

- Noise suppression in computers and peripherals
- Noise suppression in telecommunications
- Noise suppression in data communications
- Noise suppression in consumer electronics

Operating Temperature

-55ºC — +125ºC

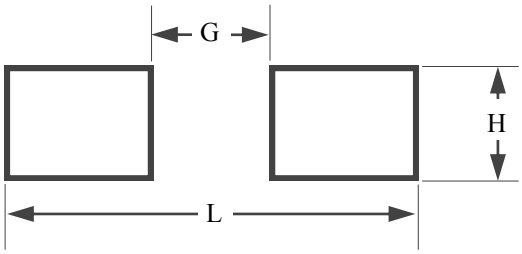
Product Identification

MCP 0805 F 600 P T - T
(1) (2) (3) (4) (5) (6) (7)

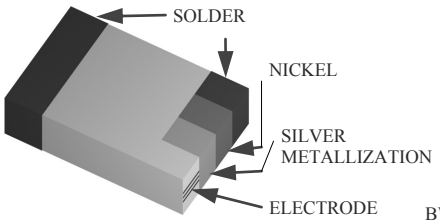
(1) Series code:
MCP: Multilayer Ferrite Power Bead
(2) Dimensions: L x W inches
The first two digits: L (length)
The last two digits: W (width)
(3) Characteristic code: F
(4) Value code: Impedance (ohms at 100 MHz)
The first two digits are significant. The last digit specifies the number of zeros to follow.
(5) Tolerance code:
P = ±25%
Other tolerances may be available upon request.
(6) Package code:
T = Tape & Reel
B = Bulk
(7) Termination type code:
T = 100% Sn plating

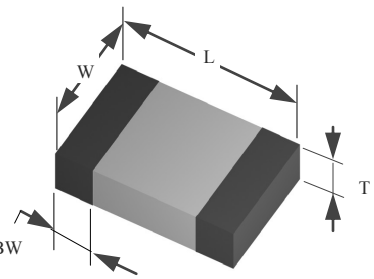
Recommended PC Board Land Patterns

CHIP SIZE EIA/EIAJ	L INCH (mm)	G INCH (mm)	H INCH (mm)
0603(1608)	0.102 (2.60)	0.022 (0.55)	0.037 (0.94)
0805(2012)	0.118 (3.00)	0.026 (0.66)	0.057 (1.45)
1206(3216)	0.173 (4.40)	0.059 (1.50)	0.071 (1.80)
1210(3225)	0.173 (4.40)	0.059 (1.50)	0.106 (2.70)
1806(4516)	0.217 (5.50)	0.110 (2.80)	0.071 (1.80)
1812(4532)	0.217 (5.50)	0.110 (2.80)	0.134 (3.40)



Shape and Dimensions





CHIP SIZE EIA/EIAJ	LENGTH (L) INCH (mm)	WIDTH (W) INCH (mm)	THICKNESS (T) INCH (mm)	TERMINATION (BW) INCH (mm)
0603/1608	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.014 ± 0.006 (0.36 ± 0.15)
0805/2012	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.035 ± 0.008 (0.90 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1206/3216	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.043 ± 0.008 (1.10 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1210/3225	0.126 ± 0.008 (3.20 ± 0.20)	0.098 ± 0.008 (2.50 ± 0.20)	0.051 ± 0.008 (1.30 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1806/4516	0.177 ± 0.010 (4.50 ± 0.25)	0.063 ± 0.008 (1.60 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1812/4532	0.177 ± 0.010 (4.50 ± 0.25)	0.126 ± 0.008 (3.20 ± 0.20)	0.059 ± 0.008 (1.50 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)

Other sizes and values may be available upon customer's request.

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MCP Series (High Current)

AEM Part Number	Z@100MHz Ω	Tolerance	Max. R_{DC} Ω	Max. I A
MCP0603F300	30	P	0.030	3.0
MCP0603F600	60	P	0.040	3.0
MCP0603F800	80	P	0.040	3.0
MCP0603F121	120	P	0.100	2.0
MCP0603F181	180	P	0.100	2.0
MCP0603F221	220	P	0.100	2.0
MCP0603F301	300	P	0.100	2.0
MCP0603F601	600	P	0.200	1.0
MCP0805F300	30	P	0.015	4.0
MCP0805F500	50	P	0.040	3.0
MCP0805F600	60	P	0.040	3.0
MCP0805F800	80	P	0.040	3.0
MCP0805F121	120	P	0.040	3.0
MCP0805F151	150	P	0.050	3.0
MCP0805F221	220	P	0.050	3.0
MCP0805F301	300	P	0.100	2.0
MCP0805F601	600	P	0.100	2.0
MCP0805F102	1000	P	0.150	1.0
MCP1206F190	19	P	0.020	4.0
MCP1206F300	30	P	0.020	4.0
MCP1206F500	50	P	0.020	4.0
MCP1206F800	80	P	0.040	3.0
MCP1206F101	100	P	0.060	2.5
MCP1206F121	120	P	0.060	2.5

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MCP Series (High Current)

AEM Part Number	*Z@100MHz Ω*	*Tolerance*	*Max. R_{DC} Ω*	*Max. I A*
MCP1206F221	220	P	0.080	2.0
MCP1206F301	300	P	0.080	2.0
MCP1206F601	600	P	0.100	2.0
MCP1206F102	1000	P	0.200	1.0

Definition of rated current: When the rated current is applied to a power bead, its temperature rise shall not exceed 20°C.
Please add tolerance, packaging and termination type codes when ordering.

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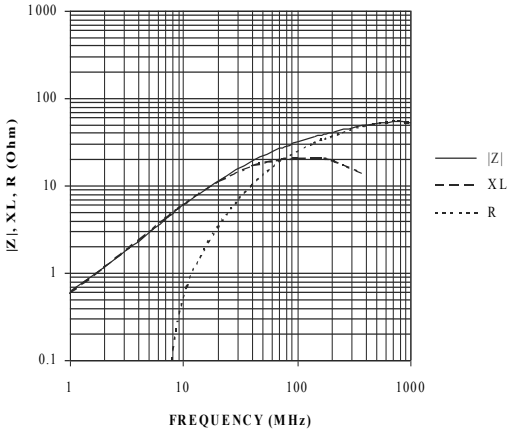
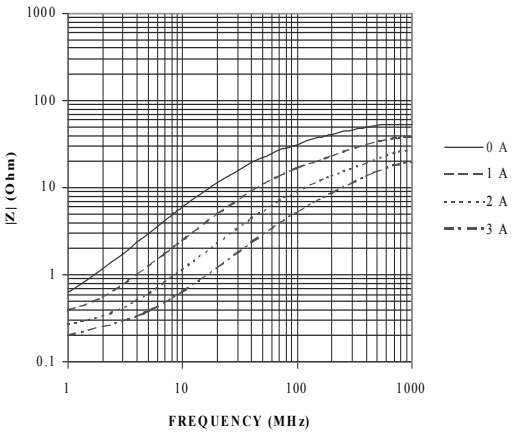
Electrical Characteristics

(Curves not listed are available upon request)

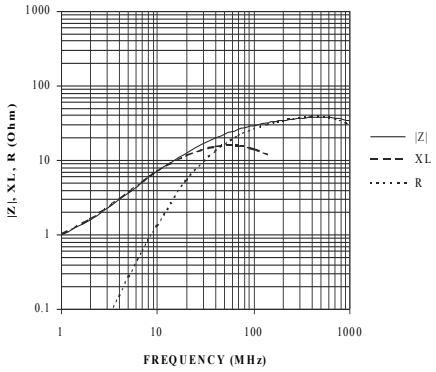
MCP0805F300



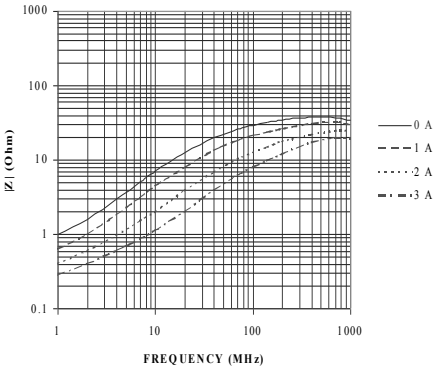
MCP0805F300



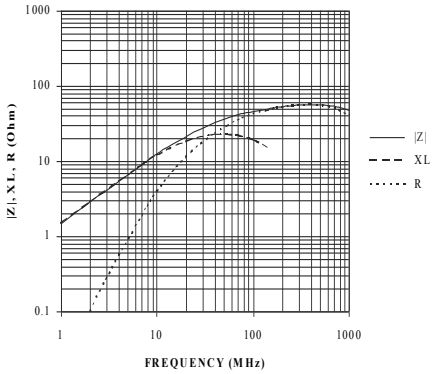
MCP1206F300



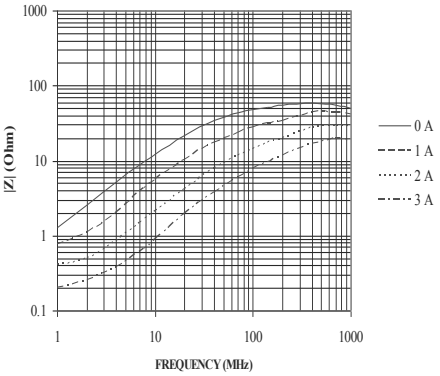
MCP1206F300



MCP1206F500



MCP1206F500



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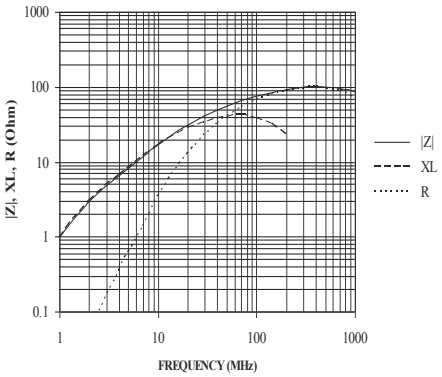
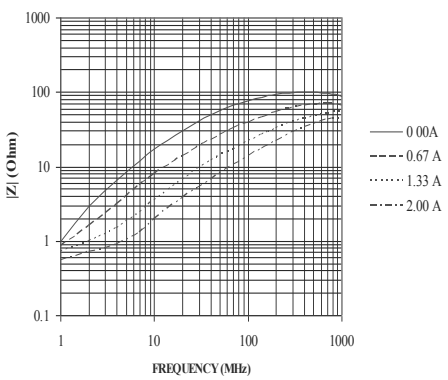
Electrical Characteristics

(Curves not listed are available upon request)

MCP1206F800



MCP1206F800



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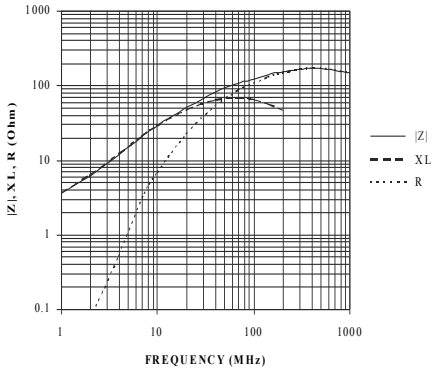

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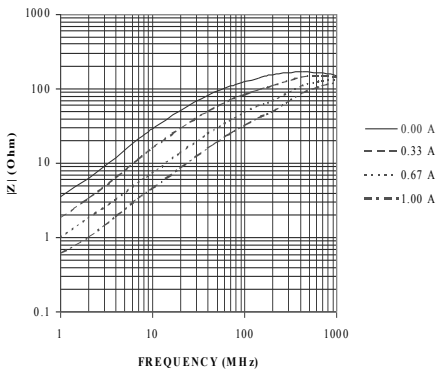

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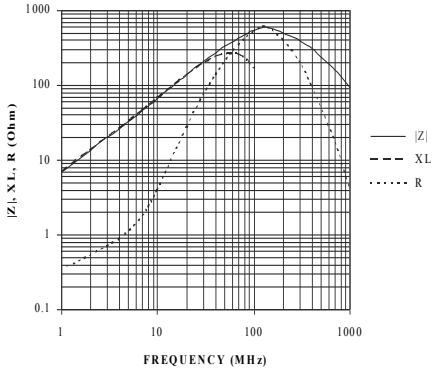

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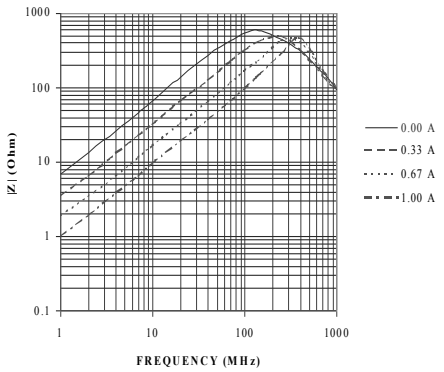

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Multilayer Ferrite Inductors

Features

- Monolithic structure for closed magnetic path eliminating crosstalk and providing high reliability in a wide temperature and humidity range
- Standard EIA/EIAJ chip sizes such as 0603/1608, 0805/2012, and 1206/3216
- Superior termination bonding strength
- Nickel barrier with solder overplated termination offering excellent solderability and solder leach resistance, suitable for both wave and reflow soldering processes

Applications

- Prevention of electromagnetic interference to signal for high density circuits in disk drives, personal computers, measuring equipment, and telephone equipment

Operating Temperature

-40ºC — +85ºC

Product Identification

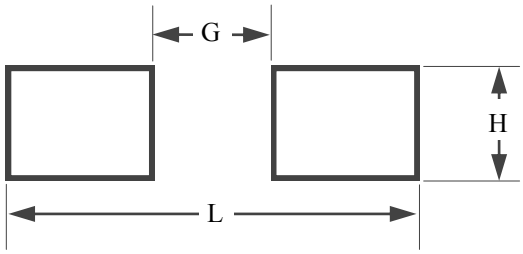
MCI	0603	J	152	K	T	-	T
(1)	(2)	(3)	(4)	(5)	(6)		(7)

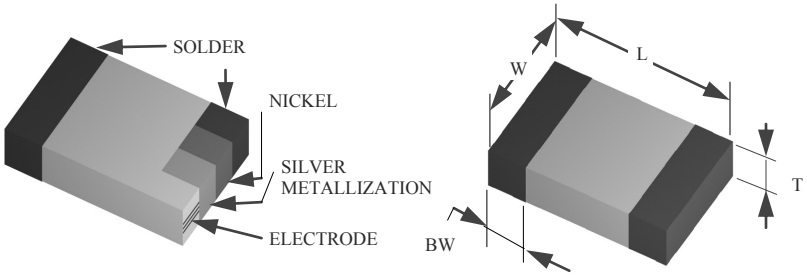
(1) Series code:
MCI: Multilayer Ferrite Inductor
(2) Dimensions: L x W inches
The first two digits: L (length)
The last two digits: W (width)
(3) Characteristic code: H, J
(4) Value code: Inductance (nH)
The first two digits are significant. The last digit specifies the number of zeros to follow.
(5) Tolerance code:
K = ±10%
M = ±20%
(6) Package code:
T = Tape & Reel
B = Bulk
(7) Termination type code:
T = 100% Sn plating

Recommended PC Board Land Patterns

CHIP SIZE EIA/EIAJ	L INCH (mm)	G INCH (mm)	H NCH (mm)
0603(1608)	0.102 (2.60)	0.022 (0.55)	0.037 (0.94)
0805(2012)	0.118 (3.00)	0.026 (0.66)	0.057 (1.45)
1206(3216)	0.173 (4.40)	0.059 (1.50)	0.071 (1.80)

Shape and Dimensions





CHIP SIZE EIA/EIAJ	LENGTH (L) INCH (mm)	WIDTH (W) INCH (mm)	THICKNESS (T) INCH (mm)	TERMINATION (BW) INCH (mm)
0603/1608	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.014 ± 0.006 (0.36 ± 0.15)
0805/2012	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25± 0.20)	<2.7µH 0.035 ± 0.008 (0.90 ± 0.20) ≥2.7µH 0.049 ± 0.008 (1.25 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)
1206/3216	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.043 ± 0.08 (1.10 ± 0.20)	0.020 ± 0.012 (0.51 ± 0.30)

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MCI Series (General Use)

AEM Part Number	L µH	Tolerance	Min. Q	Test Frequency MHz	Min. SRF MHz	Max. R_{DC} Ω	Max. I A
MCI0603H470	0.047	M	15	50	260	0.30	0.20
MCI0603H680	0.068	M	15	50	250	0.30	0.20
MCI0603H820	0.082	M	15	50	245	0.30	0.20
MCI0603H101	0.10	K, M	25	25	240	0.50	0.20
MCI0603H121	0.12	K, M	25	25	205	0.50	0.20
MCI0603H151	0.15	K, M	25	25	180	0.60	0.15
MCI0603H181	0.18	K, M	25	25	165	0.60	0.15
MCI0603H221	0.22	K, M	25	25	150	0.80	0.15
MCI0603H271	0.27	K, M	25	25	135	0.80	0.15
MCI0603H331	0.33	K, M	25	25	125	0.85	0.15
MCI0603H391	0.39	K, M	25	25	110	1.00	0.15
MCI0603H471	0.47	K, M	25	25	105	1.35	0.08
MCI0603H561	0.56	K, M	25	25	95	1.55	0.06
MCI0603H681	0.68	K, M	25	25	90	1.70	0.06
MCI0603H821	0.82	K, M	25	25	85	2.10	0.05
MCI0603J102	1.0	K, M	35	10	75	0.60	0.10
MCI0603J122	1.2	K, M	35	10	65	0.80	0.10
MCI0603J152	1.5	K, M	35	10	60	0.80	0.10
MCI0603J182	1.8	K, M	35	10	55	0.95	0.10
MCI0603J222	2.2	K, M	35	10	50	1.15	0.10
MCI0603J272	2.7	K, M	35	10	45	1.35	0.08
MCI0603J332	3.3	K, M	35	10	40	1.55	0.06
MCI0603J392	3.9	K, M	35	10	35	1.70	0.06
MCI0603J472	4.7	K, M	35	10	33	2.10	0.04

Other values may be available upon request.
Please add tolerance, packaging and termination type codes when ordering.

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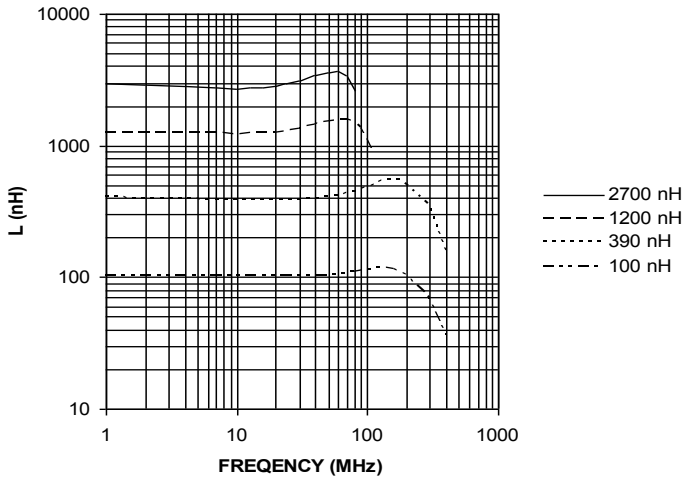
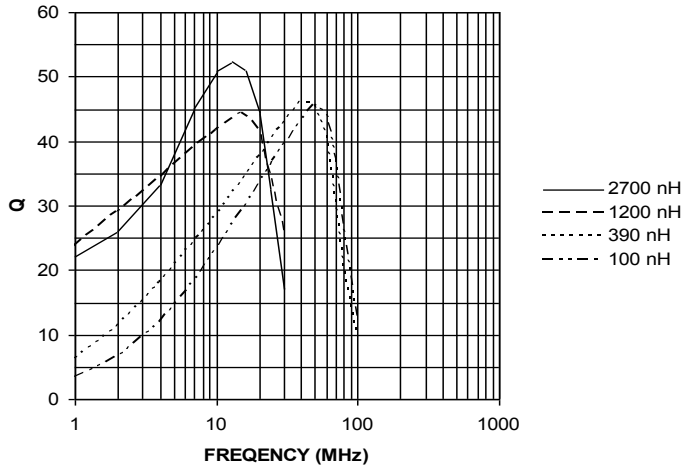
Electrical Characteristics

(Curves not listed are available upon request)

MCI 0603 SERIES



MCI 0603 SERIES



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Multilayer Ceramic Inductors

Features

- Monolithic structure with high reliability
- Standard EIA/EIAJ chip sizes such as 0402/1005 and 0603/1608
- High quality ceramic material and unique manufacturing processes providing high Q at high frequencies and high self-resonant frequencies
- Superior termination bonding strength
- Nickel barrier with solder overplated termination offering excellent solderability and solder leach resistance, suitable for both wave and reflow soldering processes

Applications

- High frequency equipment including cellular phones, pagers, radar detectors, computer communications, etc

Operating Temperature

-40ºC — +125ºC

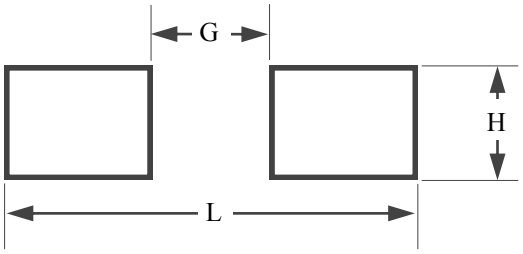
Product Identification

MHI	0603	C	1N8	S	T	-	T
(1)	(2)	(3)	(4)	(5)	(6)		(7)

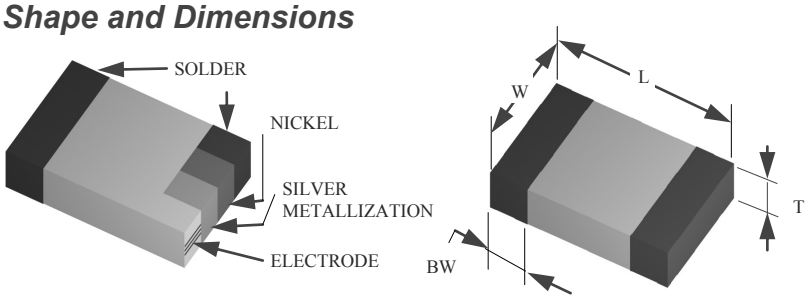
(1) Series code :
MHI: Multilayer Ceramic Inductor
(2) Dimensions: L x W inches
The first two digits: L (length)
The last two digits: W (width)
(3) Characteristic code: C
(4) Value code: Inductance
N — decimal point for nH
Example: 1N8 = 1.8 nH
R — decimal point for µH (1000 nH)
Example: R12 = 0.12 µH = 120 nH
(5) Tolerance code:
J = ±5%
K = ±10%
S = ±0.3 nH
(6) Package code:
T = Tape & Reel
B = Bulk
(7) Termination plating code:
T = 100% Sn plating Terminations
(Sn/Pb plating no longer available)

Recommended PC Board Land Patterns

CHIP SIZE EIA/EIAJ	L INCH (mm)	G INCH (mm)	H INCH (mm)
0402(1005)	0.063 (1.60)	0.016 (0.40)	0.024 (0.60)
0603(1608)	0.102 (2.60)	0.022 (0.55)	0.037 (0.94)



Shape and Dimensions



SIZE EIA/EIAJ	LENGTH (L) INCH (mm)	WIDTH (W) INCH (mm)	THICKNESS (T) INCH (mm)	TERMINATION (BW) INCH (mm)
0402/1005	0.039 ± 0.004 (1.00 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.010± 0.004 (0.25 ± 0.10)
0603/1608	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.014 ± 0.006 (0.36 ± 0.15)

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MHI Series (High Frequency)

AEM Part Number	L, nH	Tolerance	Min.Q	Typ. Q @100 MHz	Typ. Q @800 MHz	Test Frequency MHz	Min. SRF MHz	Max. R_{DC} Ω	Max. I A
MHI0402C1N0	1.0	S	8	11	40	100	8000	0.12	0.30
MHI0402C1N2	1.2	S	8	11	36	100	8000	0.12	0.30
MHI0402C1N5	1.5	S	8	11	36	100	8000	0.13	0.30
MHI0402C1N8	1.8	S	8	11	35	100	6000	0.14	0.30
MHI0402C2N2	2.2	S	8	11	33	100	6000	0.16	0.30
MHI0402C2N7	2.7	S	8	11	33	100	6000	0.20	0.30
MHI0402C3N3	3.3	S, K	8	11	33	100	6000	0.22	0.30
MHI0402C3N9	3.9	S, K	8	11	31	100	4000	0.25	0.30
MHI0402C4N7	4.7	S, K	8	11	30	100	4000	0.28	0.30
MHI0402C5N6	5.6	S, K	8	11	30	100	4000	0.30	0.30
MHI0402C6N8	6.8	J, K	8	11	30	100	3900	0.35	0.30
MHI0402C8N2	8.2	J, K	8	11	30	100	3500	0.40	0.30
MHI0402C10N	10	J, K	8	11	30	100	3200	0.45	0.30
MHI0402C12N	12	J, K	8	11	28	100	2600	0.50	0.25
MHI0402C15N	15	J, K	8	11	28	100	2300	0.55	0.25
MHI0402C18N	18	J, K	8	11	27	100	2000	0.65	0.25
MHI0402C22N	22	J, K	8	11	26	100	1600	0.80	0.20
MHI0402C27N	27	J, K	8	11	26	100	1400	0.90	0.20
MHI0402C33N	33	J, K	8	11	24	100	1200	1.10	0.20
MHI0402C39N	39	J, K	8	11	20	100	1100	1.20	0.20
MHI0402C47N	47	J, K	8	11	18	100	900	1.30	0.20
MHI0402C56N	56	J, K	8	11	18	100	750	1.40	0.18
MHI0402C68N	68	J, K	8	11	16	100	700	1.40	0.18
MHI0402C82N	82	J, K	8	10		100	600	1.60	0.12
MHI0402CR10	100	J, K	8	10		100	600	2.00	0.10

Other values may be available upon request.
Please add tolerance, packaging and termination type codes when ordering.

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MHI Series (for high frequency)

AEM Part Number	L, nH	Tolerance	Min.Q	Typ. Q @100 MHz	Typ. Q @800 MHz	Test Frequency MHz	Min. SRF MHz	Max. R_{DC} Ω	Max. I A
MHI0603C1N5	1.5	S	8	14	46	100	6000	0.10	0.50
MHI0603C1N8	1.8	S	8	14	46	100	6000	0.12	0.50
MHI0603C2N2	2.2	S	8	14	46	100	6000	0.16	0.50
MHI0603C2N7	2.7	S	8	14	46	100	6000	0.20	0.40
MHI0603C3N3	3.3	S, K	10	14	46	100	5000	0.22	0.40
MHI0603C3N9	3.9	S, K	10	14	46	100	4500	0.25	0.30
MHI0603C4N7	4.7	S, K	10	14	46	100	4000	0.28	0.30
MHI0603C5N6	5.6	S, K	10	14	46	100	4000	0.29	0.30
MHI0603C6N8	6.8	J, K	10	15	46	100	3500	0.30	0.30
MHI0603C8N2	8.2	J, K	10	15	46	100	3000	0.33	0.30
MHI0603C10N	10	J, K	12	15	46	100	2000	0.35	0.30
MHI0603C12N	12	J, K	12	15	46	100	1800	0.40	0.30
MHI0603C15N	15	J, K	12	15	46	100	1500	0.45	0.30
MHI0603C18N	18	J, K	12	15	46	100	1500	0.50	0.25
MHI0603C22N	22	J, K	12	15	46	100	1300	0.55	0.25
MHI0603C27N	27	J, K	12	15	46	100	1200	0.60	0.25
MHI0603C33N	33	J, K	12	15	46	100	1000	0.65	0.25
MHI0603C39N	39	J, K	12	15	46	100	1000	0.70	0.25
MHI0603C47N	47	J, K	12	15	39	100	800	0.90	0.20
MHI0603C56N	56	J, K	12	15	37	100	700	1.00	0.20
MHI0603C68N	68	J, K	12	15	36	100	650	1.20	0.20
MHI0603C82N	82	J, K	12	15	29	100	600	1.50	0.20
MHI0603CR10	100	J, K	12	15	16	100	550	1.70	0.20
MHI0603CR12	120	J, K	8	13	16	50	500	2.00	0.15
MHI0603CR15	150	J, K	8	13		50	500	2.40	0.15
MHI0603CR18	180	J, K	8	13		50	400	2.70	0.15
MHI0603CR22	220	J, K	8	13		50	400	2.80	0.15

Other values may be available upon request.
Please add tolerance, packaging and termination type codes when ordering.

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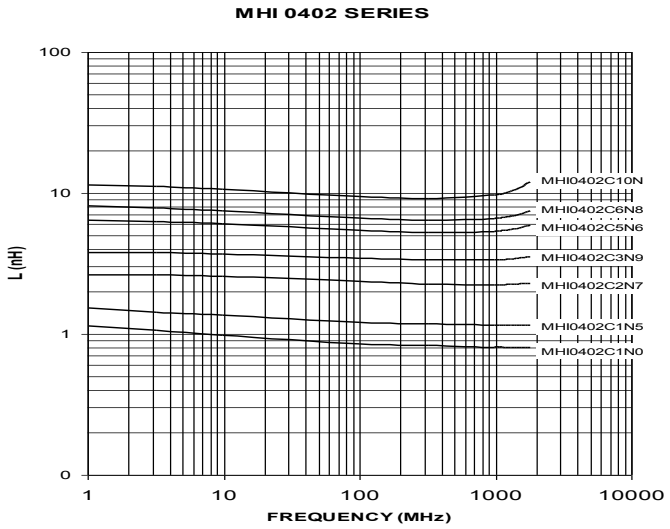
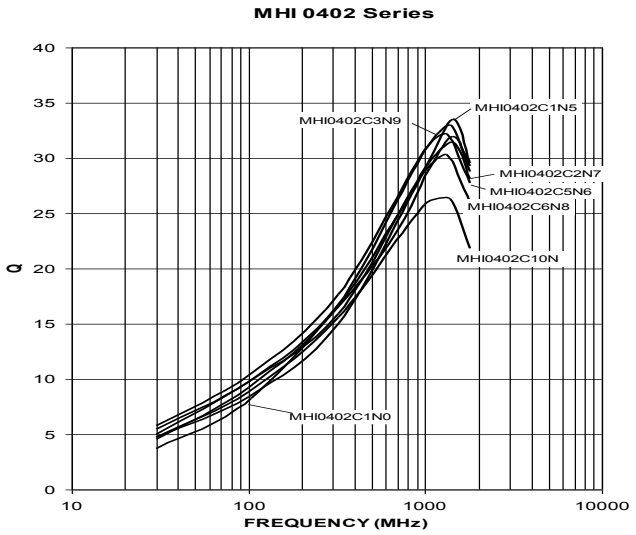
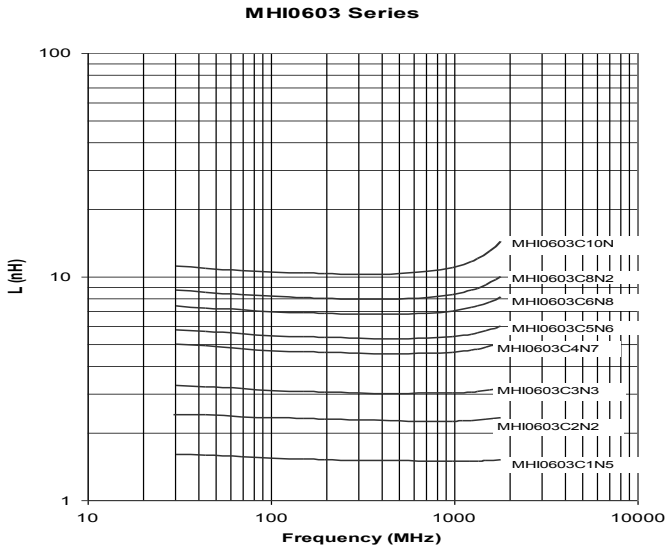
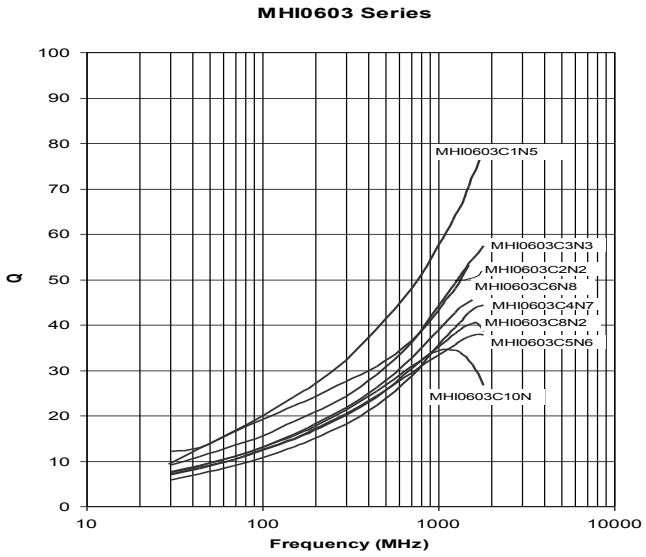
Typical Electrical Characteristics

(Curves not listed are available upon request)









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Thin Film Chip Inductors

Features

- Photolithographic single layer ceramic chip
- High SRF, superior Q, and excellent temperature stability
- Precision within ± 1% or ± 0.1 nH

Applications

- Cellular telephone, digital camera and GPS products
- VCO,TCXO Circuits and RF transceiver modules
- Wireless LANs, bluetooth modules, communication appliances

Operating Temperature

-40ºC — +85ºC

Product Identification

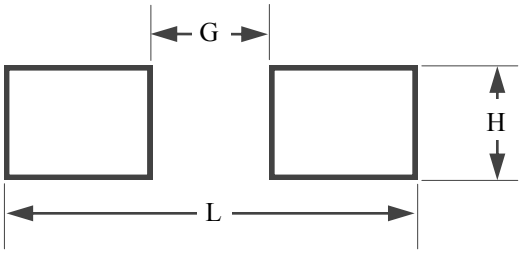
TFI 0402 C 1N8 S T - T
(1) (2) (3) (4) (5) (6) (7)

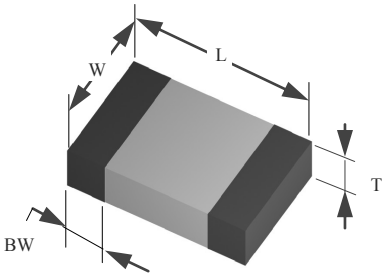
(1) Series code :
TFI: Thin Film Inductor
(2) Dimensions: L x W inches
The first two digits: L (length)
The last two digits: W (width)
(3) Characteristic code: C
(4) Value code: Inductance
N — decimal point for nH
Example: 1N8 = 1.8 nH
R — decimal point for µH (1000 nH)
Example: R10 = 0.10 µH = 100 nH
(5) Tolerance code:
F = ±1% B = ±0.1 nH
G = ±2% C = ±0.2 nH
H = ±3% S = ±0.3 nH
J = ±5%
(6) Package code:
T = Tape & Reel
(7) Termination type code:
T = 100% Sn plating

Recommended PC Board Land Patterns

CHIP SIZE EIA/EIAJ	*L INCH (mm)*	*G INCH (mm)*	*H INCH (mm)*
0201(0502)	0.033 (0.85)	0.010 (0.25)	0.016 (0.40)
0402(1005)	0.063 (1.60)	0.016 (0.40)	0.024 (0.60)
0603(1608)	0.102 (2.60)	0.022 (0.55)	0.037 (0.94)

Shape and Dimensions





SIZE EIA/EIAJ	*LENGTH (L) INCH (mm)*	*WIDTH (W) INCH (mm)*	*THICKNESS (T) INCH (mm)*	*TERMINATION (BW) INCH (mm)*
0201/0502	0.024 ± 0.002 (0.60 ± 0.05)	0.012 ± 0.002 (0.30 ± 0.05)	0.009 ± 0.002 (0.23 ± 0.05)	0.006± 0.002 (0.15 ± 0.05)
0402/1005	0.039 ± 0.004 (1.00 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.013 ± 0.004 (0.32 ± 0.10)	0.008± 0.004 (0.20 ± 0.10)
0603/1608	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.018 ± 0.004 (0.45 ± 0.10)	0.012 ± 0.008 (0.30 ± 0.20)

TFI Series

AEM Part Number	L, nH	Tolerance	Min. Q	Test Frequency MHz	Min. SRF GHz	Max. R_{DC} Ω	Max. I A
TFI0201C0N1	0.1	B, C, S	8	500	9	0.2	0.40
TFI0201C0N2	0.2	B, C, S	8	500	9	0.2	0.40
TFI0201C0N3	0.3	B, C, S	8	500	9	0.2	0.40
TFI0201C0N4	0.4	B, C, S	8	500	9	0.25	0.35
TFI0201C0N5	0.5	B, C, S	8	500	9	0.25	0.35
TFI0201C0N6	0.6	B, C, S	8	500	9	0.25	0.35
TFI0201C0N7	0.7	B, C, S	8	500	9	0.3	0.30
TFI0201C0N8	0.8	B, C, S	8	500	9	0.3	0.30
TFI0201C0N9	0.9	B, C, S	8	500	9	0.3	0.30
TFI0201C1N0	1.0	B, C, S	8	500	9	0.3	0.30
TFI0201C1N1	1.1	B, C, S	8	500	9	0.35	0.30
TFI0201C1N2	1.2	B, C, S	8	500	9	0.35	0.30
TFI0201C1N3	1.3	B, C, S	8	500	9	0.45	0.25
TFI0201C1N4	1.4	B, C, S	8	500	9	0.45	0.25
TFI0201C1N5	1.5	B, C, S	8	500	9	0.45	0.25
TFI0201C1N6	1.6	B, C, S	8	500	9	0.55	0.20
TFI0201C1N7	1.7	B, C, S	8	500	9	0.55	0.20
TFI0201C1N8	1.8	B, C, S	8	500	9	0.55	0.20
TFI0201C1N9	1.9	B, C, S	8	500	9	0.55	0.20
TFI0201C2N0	2.0	B, C, S	8	500	8	0.7	0.20
TFI0201C2N1	2.1	B, C, S	8	500	8	0.7	0.20
TFI0201C2N2	2.2	B, C, S	8	500	8	0.7	0.20
TFI0201C2N3	2.3	B, C, S	8	500	8	0.8	0.15
TFI0201C2N4	2.4	B, C, S	8	500	8	0.8	0.15
TFI0201C2N5	2.5	B, C, S	8	500	8	0.8	0.15
TFI0201C2N6	2.6	B, C, S	8	500	8	0.8	0.15
TFI0201C2N7	2.7	B, C, S	8	500	8	0.8	0.15
TFI0201C2N8	2.8	B, C, S	8	500	6	1	0.15
TFI0201C2N9	2.9	B, C, S	8	500	6	1	0.15
TFI0201C3N0	3.0	B, C, S	8	500	6	1	0.15
TFI0201C3N1	3.1	B, C, S	8	500	6	1	0.15
TFI0201C3N2	3.2	B, C, S	8	500	6	1	0.15
TFI0201C3N3	3.3	B, C, S	8	500	6	1	0.15
TFI0201C3N4	3.4	B, C, S	8	500	6	1.2	0.15
TFI0201C3N5	3.5	B, C, S	8	500	6	1.2	0.15
TFI0201C3N6	3.6	B, C, S	8	500	6	1.2	0.15
TFI0201C3N7	3.7	B, C, S	8	500	6	1.2	0.15
TFI0201C3N9	3.9	B, C, S	8	500	6	1.2	0.15
TFI0201C4N7	4.7	B, C, S	8	500	6	1.4	0.13
TFI0201C5N6	5.6	G, J	8	500	4	1.8	0.13
TFI0201C6N8	6.8	G, J	8	500	4	2.3	0.11
TFI0201C8N2	8.2	G, J	8	500	3	3	0.11
TFI0201C10N	10	G, J	8	500	2	3.5	0.08

Other values may be available upon request.

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TFI Series

AEM Part Number	L, nH	Tolerance	Min. Q	Test Frequency MHz	Min. SRF GHz	Max. R_{DC} Ω	Max. I A
TFI0402C0N2	0.2	B, C, S	13	500	14	0.10	0.80
TFI0402C0N4	0.4	B, C, S	13	500	14	0.10	0.80
TFI0402C0N8	0.8	B, C, S	13	500	14	0.15	0.70
TFI0402C1N0	1.0	B, C, S	13	500	12	0.15	0.70
TFI0402C1N1	1.1	B, C, S	13	500	12	0.15	0.70
TFI0402C1N2	1.2	B, C, S	13	500	12	0.15	0.70
TFI0402C1N3	1.3	B, C, S	13	500	10	0.25	0.70
TFI0402C1N4	1.4	B, C, S	13	500	10	0.25	0.70
TFI0402C1N5	1.5	B, C, S	13	500	10	0.25	0.70
TFI0402C1N6	1.6	B, C, S	13	500	10	0.25	0.56
TFI0402C1N7	1.7	B, C, S	13	500	10	0.25	0.56
TFI0402C1N8	1.8	B, C, S	13	500	10	0.25	0.56
TFI0402C1N9	1.9	B, C, S	13	500	8	0.35	0.56
TFI0402C2N0	2.0	B, C, S	13	500	8	0.35	0.56
TFI0402C2N1	2.1	B, C, S	13	500	8	0.35	0.44
TFI0402C2N2	2.2	B, C, S	13	500	8	0.35	0.44
TFI0402C2N3	2.3	B, C, S	13	500	8	0.35	0.44
TFI0402C2N4	2.4	B, C, S	13	500	8	0.35	0.44
TFI0402C2N5	2.5	B, C, S	13	500	8	0.35	0.44
TFI0402C2N6	2.6	B, C, S	13	500	8	0.35	0.44
TFI0402C2N7	2.7	B, C, S	13	500	8	0.35	0.44
TFI0402C2N8	2.8	B, C, S	13	500	6	0.45	0.38
TFI0402C2N9	2.9	B, C, S	13	500	6	0.45	0.38
TFI0402C3N0	3.0	B, C, S	13	500	6	0.45	0.38
TFI0402C3N1	3.1	B, C, S	13	500	6	0.45	0.38
TFI0402C3N2	3.2	B, C, S	13	500	6	0.45	0.38
TFI0402C3N3	3.3	B, C, S	13	500	6	0.45	0.38
TFI0402C3N4	3.4	B, C, S	13	500	6	0.55	0.38
TFI0402C3N5	3.5	B, C, S	13	500	6	0.55	0.38
TFI0402C3N6	3.6	B, C, S	13	500	6	0.55	0.38
TFI0402C3N7	3.7	B, C, S	13	500	6	0.55	0.34
TFI0402C3N8	3.8	B, C, S	13	500	6	0.55	0.34
TFI0402C3N9	3.9	B, C, S	13	500	6	0.55	0.34
TFI0402C4N7	4.7	B, C, S	13	500	6	0.65	0.32
TFI0402C5N6	5.6	B, C, S	13	500	6	0.85	0.28
TFI0402C6N2	6.2	B, C, S	13	500	6	0.85	0.28
TFI0402C6N8	6.8	B, C, S	13	500	6	1.05	0.26
TFI0402C7N2	7.2	B, C, S	13	500	6	1.05	0.26
TFI0402C8N0	8.0	B, C, S	13	500	5.5	1.25	0.22
TFI0402C8N2	8.2	B, C, S	13	500	5.5	1.25	0.22
TFI0402C9N1	9.1	B, C, S	13	500	5.5	1.25	0.22
TFI0402C10N	10	F, G, H, J	13	500	4.5	1.35	0.20
TFI0402C12N	12	F, G, H, J	13	500	3.7	1.55	0.18
TFI0402C14N	14	F, G, H, J	13	500	3.7	1.75	0.18
TFI0402C15N	15	F, G, H, J	13	500	3.3	1.75	0.13
TFI0402C17N	17	F, G, H, J	13	500	3.1	1.95	0.10
TFI0402C18N	18	F, G, H, J	13	500	3.1	2.15	0.10
TFI0402C20N	20	F, G, H, J	13	500	2.8	2.55	0.09
TFI0402C22N	22	F, G, H, J	13	500	2.8	2.65	0.09
TFI0402C27N	27	F, G, H, J	13	500	2.5	3.25	0.075
TFI0402C33N	33	F, G, H, J	13	500	2.5	4.50	0.075

Other values may be available upon request.

TFI Series

AEM Part Number	L, nH	Tolerance	Min. Q	Test Frequency MHz	Min. SRF GHz	Max. R_{DC} Ω	Max. I A
TFI0603C1N0	1.0	B, C, S	15	300	13	0.35	0.80
TFI0603C1N2	1.2	B, C, S	15	300	13	0.35	0.80
TFI0603C1N5	1.5	B, C, S	15	300	10	0.35	0.80
TFI0603C1N8	1.8	B, C, S	15	300	10	0.35	0.30
TFI0603C2N2	2.2	B, C, S	15	300	8	0.35	0.30
TFI0603C2N7	2.7	B, C, S	15	300	6	0.45	0.30
TFI0603C3N3	3.3	B, C, S	15	300	6	0.45	0.30
TFI0603C3N9	3.9	B, C, S	15	300	6	0.45	0.30
TFI0603C4N7	4.7	B, C, S	15	300	5	0.55	0.30
TFI0603C5N6	5.6	B, C, S	15	300	5	0.65	0.30
TFI0603C6N8	6.8	B, C, S	15	300	5	0.75	0.30
TFI0603C8N2	8.2	B, C, S	15	300	4	0.95	0.30
TFI0603C10N	10	F, G, H, J	15	300	4	0.95	0.30
TFI0603C12N	12	F, G, H, J	15	300	3	1.05	0.30
TFI0603C15N	15	F, G, H, J	15	300	3	1.35	0.30
TFI0603C18N	18	F, G, H, J	15	300	2	1.65	0.30
TFI0603C22N	22	F, G, H, J	15	300	2	1.95	0.25
TFI0603C27N	27	F, G, H, J	15	300	2	2.35	0.25
TFI0603C33N	33	F, G, H, J	15	300	1.5	2.75	0.25
TFI0603C39N	39	F, G, H, J	15	300	1.5	3.00	0.20
TFI0603C47N	47	F, G, H, J	15	300	1.5	3.00	0.20
TFI0603C56N	56	F, G, H, J	15	300	1	5.00	0.15
TFI0603C68N	68	F, G, H, J	15	300	1	5.00	0.15
TFI0603CR10	100	G, H, J	15	300	1	7.50	0.10

Other values may be available upon request.

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Wire Wound Chip Inducors

Features

- Wire wound ceramic construction provide high SRF
- Ultra-compact inductors provide exceptional Q values
- Low profile , high current are available
- Miniature SMD chip inductor for fully automated assembly
- Outstanding endurance from Pull-up force, mechanical shock and pressure
- Tighter tolerance down to ±2%
- Smaller size of 0402 (1005)

Applications

- RF Products

  Cellular Phone (CDMA/GSM/PHS)
  Cordless Phone (DECT/CT1CT2)
  Remote Control, Security System
  Wireless PDA
  WLL, Wireless LAN / Mouse / Keyboard / Earphone
  VCO, RF Module & Other Wireless Products
  Base Station, Repeater
  GPS Receive

- Broad Band Applications:

  CATV Filter, Tuner
  Cable Modem/ XDSL Tuner
  Set Top Box

- IT applications

  USB 2.0
  IEEE1394

Operating Temperature

-40ºC — +125ºC

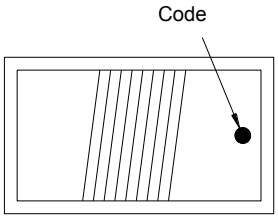
Product Identification

WHI	0402	L	1N9	J	T
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series code :
WHI: Wire Wound Chip Inductor
(2) Dimensions: (L x W inches)
(3) Design code
S= Standard Inductor
L= Low Profile Inductor
H=High Current and High Q
(4) Inductance
1N6=1.6nH
82N=82nH
R27=270nH
1R0=1000nH
103=10,000nH
(5) Inductance Tolerance
G = ±2%
J = ±5%
K = ±10%
M = ±20%
(6) Packaging:
T=Taping Reel

Color Coding:

0603 / 0805/1206/1008 Series (0402 Series is No Color Coding)
Because of small sizes, these parts are marked with a single color dot.
The inductance value represented by the dot is shown on the data page for each series.



COLOR CODING

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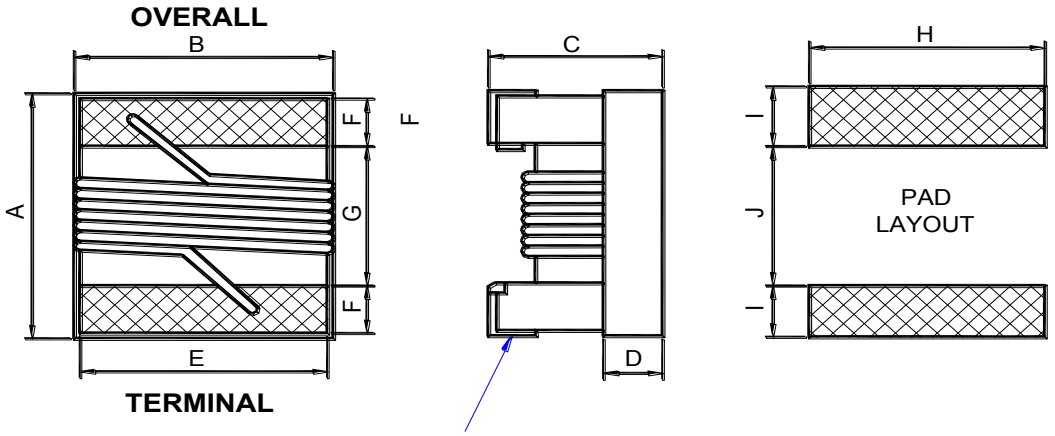
Shape and Dimensions (mm):



TERMINAL WARPAROUND:
Approx. 0.007" /0.18mm BOTH ENDS

Standard

Series	A Max.	B Max.	C Max.	D Ref.	E	F	G	H	I	J
WHI0402	1.27	0.76	0.61	0.15	0.51	0.23	0.56	0.66	0.50	0.46
WHI0603	1.80	1.12	1.02	0.38	0.76	0.33	0.86	1.02	0.64	0.64
WHI0805	2.29	1.73	1.52	0.51	1.27	0.44	1.02	1.78	1.02	0.76
WHI1008	2.92	2.79	2.03	0.65	2.03	0.51	1.52	2.54	1.02	1.27
WHI1206	3.56	2.16	1.52	0.50	1.60	0.50	2.20	1.93	1.02	1.78

Low profile

Series	A Max.	B Max.	C Max.	D Ref.	E	F	G	H	I	J
WHI0805	2.29	1.73	1.03	0.51	1.27	0.44	1.02	1.78	1.02	0.76
WHI1008	2.92	2.79	1.40	0.65	2.03	0.51	1.52	2.54	1.02	1.27

High Current / High Q

Series	A Max.	B Max.	C Max.	D Ref.	E	F	G	H	I	J
WHI0603	1.80	1.12	1.02	0.38	0.76	0.33	0.86	1.02	0.64	0.64
WHI0805	2.29	1.73	1.52	0.51	1.27	0.44	1.02	1.78	1.02	0.76
WHI1008	2.92	2.79	2.03	0.65	2.03	0.51	1.52	2.54	1.02	1.27

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Standard Electrical Specifications:

0402 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	900MHz		1.7GHz	
							L	*Q*	*L*	*Q*
WHI0402□1N0	1.0 @ 250MHz	10	16	12.70	0.045	1360	1.02	77	1.02	69
WHI0402□1N9	1.9 @ 250MHz	10,5	16	11.30	0.070	1040	1.72	68	1.74	82
WHI0402□2N0	2.0 @ 250MHz	10,5	16	11.10	0.070	1040	1.93	54	1.93	75
WHI0402□2N2	2.2 @ 250MHz	10,5	19	10.80	0.070	960	2.19	59	2.23	100
WHI0402□2N4	2.4 @ 250MHz	10,5	15	10.50	0.070	790	2.24	51	2.27	68
WHI0402□2N7	2.7 @ 250MHz	10,5	16	10.40	0.120	640	2.23	42	2.25	61
WHI0402□3N3	3.3 @ 250MHz	10,5,2	19	7.00	0.066	840	3.10	65	3.12	87
WHI0402□3N6	3.6 @ 250MHz	10,5,2	19	6.80	0.066	840	3.56	45	3.62	71
WHI0402□3N9	3.9 @ 250MHz	10,5,2	19	5.80	0.066	840	3.89	50	4.00	75
WHI0402□4N3	4.3 @ 250MHz	10,5,2	18	6.00	0.091	700	4.19	47	4.30	71
WHI0402□4N7	4.7 @ 250MHz	10,5,2	18	4.70	0.130	640	4.55	48	4.68	68
WHI0402□5N1	5.1 @ 250MHz	10,5,2	20	4.80	0.083	800	5.15	56	5.25	82
WHI0402□5N6	5.6 @ 250MHz	10,5,2	20	4.80	0.083	760	5.16	54	5.28	81
WHI0402□6N2	6.2 @ 250MHz	10,5,2	20	4.80	0.083	760	6.16	52	6.37	76
WHI0402□6N8	6.8 @ 250MHz	10,5,2	20	4.80	0.083	680	6.56	63	6.93	78
WHI0402□7N5	7.5 @ 250MHz	10,5,2	22	4.80	0.104	680	7.91	60	8.22	88
WHI0402□8N2	8.2 @ 250MHz	10,5,2	22	4.40	0.104	680	8.50	57	8.85	84
WHI0402□8N7	8.7 @ 250MHz	10,5,2	18	4.10	0.200	480	8.78	54	9.21	73
WHI0402□9N0	9.0 @ 250MHz	10,5,2	22	4.16	0.104	680	9.07	62	9.53	78
WHI0402□9N5	9.5 @ 250MHz	10,5,2	18	4.00	0.200	480	9.42	54	9.98	69
WHI0402□10N	10 @ 250MHz	10,5,2	21	3.90	0.195	480	9.80	50	10.10	67
WHI0402□11N	11 @ 250MHz	10,5,2	24	3.68	0.120	640	10.70	52	11.20	78

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0402 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	900MHz		1.7GHz	
							L	*Q*	*L*	*Q*
WHI0402□12N	12 @ 250MHz	10,5,2	24	3.60	0.120	640	11.90	53	12.70	71
WHI0402□13N	13 @ 250MHz	10,5,2	24	3.45	0.210	440	13.40	51	14.60	57
WHI0402□15N	15 @ 250MHz	10,5,2	24	3.28	0.172	560	14.60	55	15.50	77
WHI0402□16N	16 @ 250MHz	10,5,2	24	3.10	0.220	560	16.60	46	18.80	47
WHI0402□18N	18 @ 250MHz	10,5,2	25	3.10	0.230	420	18.30	57	20.30	62
WHI0402□19N	19 @ 250MHz	10,5,2	24	3.04	0.202	480	19.10	50	21.10	67
WHI0402□20N	20 @ 250MHz	10,5,2	25	3.00	0.250	420	20.70	52	23.70	53
WHI0402□22N	22 @ 250MHz	10,5,2	25	2.80	0.300	400	23.20	53	26.80	53
WHI0402□23N	23 @ 250MHz	10,5,2	24	2.72	0.300	400	23.80	49	26.90	64
WHI0402□24N	24 @ 250MHz	10,5,2	25	2.70	0.300	400	25.10	51	29.50	50
WHI0402□27N	27 @ 250MHz	10,5,2	24	2.48	0.300	400	28.70	49	33.50	63
WHI0402□30N	30 @ 250MHz	10,5,2	25	2.35	0.350	400	31.10	46	38.50	39
WHI0402□33N	33 @ 250MHz	10,5,2	24	2.35	0.350	400	34.90	31	41.70	32
WHI0402□36N	36 @ 250MHz	10,5,2	24	2.32	0.440	320	39.50	44	48.40	53
WHI0402□39N	39 @ 250MHz	10,5,2	25	2.10	0.550	200	41.70	47	50.20	45
WHI0402□40N	40 @ 250MHz	10,5,2	24	2.24	0.500	320	39.00	44	47.40	33
WHI0402□43N	43 @ 250MHz	10,5,2	25	2.03	0.810	100	45.80	46	61.60	34
WHI0402□47N	47 @ 250MHz	10,5,2	25	2.10	0.830	150	50.00	38	55.80	37
WHI0402□51N	51 @250MHZ	10,5,2	25	1.75	0.820	100	50.40	47	59.40	37
WHI0402□56N	56 @250MHZ	10,5,2	25	1.76	0.970	100	57.40	49	72.40	40
WHI0402□68N	68 @250MHZ	10,5,2	22	1.62	1.120	100	69.60	45	83.40	38

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0603 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	900MHz		1.7GHz		Color Code
							L	*Q*	*L*	*Q*	
WHI0603□1N6	1.6 @ 250MHz	10,5	24	12.5	0.030	700	1.53	35	1.58	55	Blue
WHI0603□1N8	1.8 @ 250MHz	10,5	16	12.5	0.045	700	1.63	35	1.66	50	Black
WHI0603□2N2	2.2 @ 250MHz	10,5	15	6.00	0.100	700	2.18	41	2.20	64	White
WHI0603□2N3	2.3 @ 250MHz	10,5	16	>4.00	0.140	700	2.32	32	2.35	40	Yellow
WHI0603□3N3	3.3 @ 250MHz	10,5,2	22	>6.00	0.080	700	3.35	47	3.40	65	Red
WHI0603□3N6	3.6 @ 250MHz	10,5,2	22	5.80	0.063	700	3.53	49	3.58	65	Violet
WHI0603□3N9	3.9 @ 250MHz	10,5,2	22	>6.00	0.080	700	3.95	49	3.96	67	Brown
WHI0603□4N3	4.3 @ 250MHz	10.5,2	22	5.80	0.063	700	4.32	49	4.43	67	Orange
WHI0603□4N5	4.5 @ 250MHz	10.5,2	20	5.80	0.120	700	4.74	55	4.87	92	Gray
WHI0603□4N7	4.7 @ 250MHz	10,5,2	25	5.80	0.120	700	4.65	53	4.80	67	Violet
WHI0603□5N1	5.1 @ 250MHz	10,5,2	20	5.80	0.160	700	5.13	47	5.36	56	Green
WHI0603□5N6	5.6 @ 250MHz	10,5,2	20	5.80	0.170	700	5.53	56	5.86	77	Yellow
WHI0603□6N2	6.2 @ 250MHz	10,5,2	25	5.80	0.110	700	6.28	60	6.40	85	Black
WHI0603□6N3	6.3 @ 250MHz	10,5,2	25	5.80	0.110	700	6.67	41	6.86	61	Black
WHI0603□6N8	6.8 @ 250MHz	10,5,2	27	5.80	0.110	700	6.75	60	7.10	81	Red
WHI0603□7N5	7.5 @ 250MHz	10,5,2	28	4.80	0.106	700	7.70	60	7.82	65	Brown
WHI0603□8N2	8.2 @ 250MHz	10,5,2	27	4.80	0.110	700	8.25	64	8.40	81	Green
WHI0603□8N7	8.7 @ 250MHz	10,5,2	28	4.80	0.109	700	8.86	62	9.32	58	Yellow
WHI0603□9N1	9.1 @ 250MHz	10,5,2	35	4.80	0.130	700	9.20	70	9.70	80	Black
WHI0603□9N5	9.5 @ 250MHz	10,5,2	28	5.40	0.135	700	9.70	59	9.92	61	Blue
WHI0603□10N	10.0 @ 250MHz	10,5,2	31	4.80	0.130	700	10.0	66	10.6	83	Orange
WHI0603□11N	11.0 @ 250MHz	10,5,2	31	4.00	0.086	700	11.3	53	12.1	56	Gray

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0603 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	900MHz		1.7GHz		Color Code
							L	*Q*	*L*	*Q*	
WHI0603□12N	12.0 @ 250MHz	10,5,2	35	4.00	0.130	700	12.3	72	13.5	83	Yellow
WHI0603□15N	15.0 @ 250MHz	10,5,2	35	4.00	0.170	700	15.4	64	16.8	89	Green
WHI0603□16N	16.0 @ 250MHz	10,5,2	35	3.30	0.110	700	16.5	55	18.0	52	White
WHI0603□17N	17.0 @ 250MHz	10,5,2	35	3.20	0.170	700	17.6	56	19.4	44	Red
WHI0603□18N	18.0 @ 250MHz	10,5,2	35	3.10	0.170	700	18.7	70	21.4	69	Blue
WHI0603□20N	20.0 @ 250MHz	10,5,2	40	3.00	0.190	700	20.7	80	23.5	30	Green
WHI0603□22N	22.0 @ 250MHz	10,5,2	38	3.00	0.190	700	22.8	73	26.1	71	Violet
WHI0603□23N	23.0 @ 250MHz	10,5,2	38	2.85	0.190	700	24.1	71	28.0	71	Orange
WHI0603□24N	24.0 @ 250MHz	10,5,2	38	2.80	0.130	700	25.7	45	30.9	40	Black
WHI0603□27N	27.0 @ 250MHz	10,5,2	40	2.80	0.220	600	29.2	74	34.6	65	Gray
WHI0603□30N	30.0 @ 250MHz	10,5,2	40	2.80	0.150	600	31.4	47	39.8	28	Brown
WHI0603□33N	33.0 @ 250MHz	10,5,2	40	2.30	0.220	600	36.0	67	49.5	42	White
WHI0603□36N	36.0 @ 250MHz	10,5,2	37	2.30	0.250	600	39.1	47	48.9	24	Red
WHI0603□39N	39.0 @ 250MHz	10,5,2	40	2.20	0.250	600	42.7	60	60.2	40	Black
WHI0603□43N	43.0 @ 200MHz	10,5,2	38	2.00	0.280	600	46.9	44	60.3	21	Orange
WHI0603□47N	47.0 @ 200MHz	10,5,2	38	2.00	0.280	600	52.2	62	77.2	35	Brown
WHI0603□51N	51.0 @ 200MHz	10,5,2	38	1.90	0.280	600	55.5	69	82.2	34	Blue
WHI0603□56N	56.0 @ 200MHz	10,5,2	38	1.90	0.310	600	62.5	56	97.0	26	Red
WHI0603□62N	62.0 @ 200MHz	10,5,2	37	1.80	0.340	600	68.0	40	110	10	Gray
WHI0603□68N	68.0 @ 200MHz	10,5,2	37	1.70	0.340	600	80.5	54	168	21	Orange
WHI0603□72N	72.0 @ 150MHz	10,5,2	34	1.70	0.490	600	82.0	53	135	20	Yellow
WHI0603□82N	82.0 @ 150MHz	10,5,2	34	1.70	0.540	400	96.2	54	177	21	Green
WHI0603□91N	91.0 @ 150MHz	10,5,2	30	1.70	0.500	400	110.0	50	416.4	6	Brown

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0603 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	900MHz		1.7GHz		Color Code
							L	*Q*	*L*	*Q*	
WHI0603□R10	100 @ 150MHz	10,5,2	34	1.40	0.580	400	124.0	49	319.5	13	Blue
WHI0603□R11	110 @ 150MHz	10,5,2	32	1.35	0.610	300	138.0	43	342.7	15	Violet
WHI0603□R12	120 @ 150MHz	10,5,2	32	1.30	0.650	300	166.0	39	529.3	8	Gray
WHI0603□R13	130 @ 150MHz	10,5,2	30	1.40	0.720	300	185.0	60	-	-	White
WHI0603□R14	140 @ 100MHz	10,5,2	28	1.30	0.870	280	190.0	80	-	-	Blue
WHI0603□R15	150 @ 100MHz	10,5,2	28	1.30	0.950	280	230.0	25	-	-	White
WHI0603□R16	160 @ 100MHz	10,5,2	25	1.30	1.400	280	215.0	20	-	-	Yellow
WHI0603□R18	180 @ 100MHz	10,5,2	25	1.25	1.400	250	305.0	22	-	-	Black
WHI0603□R22	220 @ 100MHz	10,5,2	25	1.20	1.600	250	377.0	21	-	-	Brown
WHI0603□R26	260 @ 100MHz	10,5,2	25	1.00	2.000	200	469.0	21	-	-	Violet
WHI0603□R27	270 @ 100MHz	10,5,2	25	0.90	2.100	200	523.0	19	-	-	Red
WHI0603□R28	280 @ 100MHz	10,5,2	25	1.00	2.400	100	524.0	18	-	-	Green
WHI0603□R30	300 @ 100MHz	10,5,2	25	0.75	2.500	150	539.7	21	-	-	Orange
WHI0603□R33	330 @ 100MHz	10,5,2	25	0.90	3.800	100	680.4	20	-	-	Blue
WHI0603□R39	390 @ 100MHz	10,5,2	25	0.90	4.350	100	734.5	29	-	-	Yellow
WHI0603□R47	470 @ 100MHz	10,5,2	23	0.60	3.60	80	-	-	-	-	White

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0805 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
WHI0805□2N7	2.7 @ 250MHz	10,5	80 @ 1500MHz	7.900	0.06	800	Brown
WHI0805□2N8	2.8 @ 250MHz	10,5	80 @ 1500MHz	7.900	0.06	800	Gray
WHI0805□3N0	3.0 @ 250MHz	10,5	65 @ 1500MHz	7.900	0.06	800	White
WHI0805□3N3	3.3 @ 250MHz	10,5	50 @ 1500MHz	6.000	0.08	600	Black
WHI0805□5N6	5.6 @ 250MHz	10,5	65 @ 1000MHz	5.500	0.08	600	Orange
WHI0805□6N2	6.2 @ 250MHz	10,5	50 @ 1000MHz	5.500	0.11	600	Green
WHI0805□6N8	6.8 @ 250MHz	10,5	50 @ 1000MHz	5.500	0.11	600	Brown
WHI0805□7N5	7.5 @ 250MHz	10,5	50 @ 1000MHz	4.500	0.14	600	Green
WHI0805□8N2	8.2 @ 250MHz	10,5	50 @ 1000MHz	4.700	0.12	600	Red
WHI0805□8N7	8.7 @ 250MHz	10,5	50 @ 1000MHz	4.000	0.21	400	White
WHI0805□10N	10.0 @ 250MHz	10,5,2	60 @ 500MHz	4.200	0.10	600	Blue
WHI0805□12N	12.0 @ 250MHz	10,5,2	50 @ 500MHz	4.000	0.15	600	Orange
WHI0805□15N	15.0 @ 250MHz	10,5,2	50 @ 500MHz	3.400	0.17	600	Yellow
WHI0805□18N	18.0 @ 250MHz	10,5,2	50 @ 500MHz	3.300	0.20	600	Green
WHI0805□22N	22.0 @ 250MHz	10,5,2	55 @ 500MHz	2.600	0.22	500	Blue
WHI0805□24N	24.0 @ 250MHz	10,5,2	50 @ 500MHz	2.000	0.22	500	Gray
WHI0805□27N	27.0 @ 250MHz	10,5,2	55 @ 500MHz	2.500	0.25	500	Violet
WHI0805□33N	33.0 @ 250MHz	10,5,2	60 @ 500MHz	2.050	0.27	500	Gray
WHI0805□36N	36.0 @ 250MHz	10,5,2	55 @ 500MHz	1.700	0.27	500	Orange
WHI0805□39N	39.0 @ 250MHz	10,5,2	60 @ 500MHz	2.000	0.29	500	White
WHI0805□43N	43.0 @ 200MHz	10,5,2	60 @ 500MHz	1.650	0.34	500	Yellow
WHI0805□47N	47.0 @ 200MHz	10,5,2	60 @ 500MHz	1.650	0.31	500	Black
WHI0805□56N	56.0 @ 200MHz	10,5,2	60 @ 500MHz	1.550	0.34	500	Brown
WHI0805□68N	68.0 @ 200MHz	10,5,2	60 @ 500MHz	1.450	0.38	500	Red
WHI0805□72N	72.0 @ 150MHz	10,5,2	65 @ 500MHz	1.400	0.40	500	Green
WHI0805□82N	82.0 @ 150MHz	10,5,2	65 @ 500MHz	1.300	0.42	400	Orange
WHI0805□91N	91.0 @ 150MHz	10,5,2	65 @ 500MHz	1.200	0.48	400	Black
WHI0805□R10	100 @ 150MHz	10,5,2	65 @ 500MHz	1.200	0.46	400	Yellow
WHI0805□R11	110 @ 150MHz	10,5,2	50 @ 250MHz	1.000	0.48	400	Brown
WHI0805□R12	120 @ 150MHz	10,5,2	50 @ 250MHz	1.100	0.51	400	Green
WHI0805□R15	150 @ 100MHz	10,5,2	50 @ 250MHz	0.920	0.56	400	Blue
WHI0805□R18	180 @ 100MHz	10,5,2	50 @ 250MHz	0.870	0.64	400	Violet

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0805 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
WHI0805□R20	200 @ 100MHz	10,5,2	50 @ 250MHz	0.860	0.66	400	Orange
WHI0805□R22	220 @ 100MHz	10,5,2	50 @ 250MHz	0.850	0.70	400	Gray
WHI0805□R24	240 @ 100MHz	10,5,2	44 @ 250MHz	0.690	1.00	350	Red
WHI0805□R25	250 @ 100MHz	10,5,2	50 @ 250MHz	0.680	1.00	350	Green
WHI0805□R27	270 @ 100MHz	10,5,2	48 @ 250MHz	0.650	1.00	350	White
WHI0805□R30	300 @ 100MHz	10,5,2	48 @ 250MHz	0.620	1.20	330	Yellow
WHI0805□R33	330 @ 100MHz	10,5,2	48 @ 250MHz	0.600	1.40	310	Black
WHI0805□R36	360 @ 100MHz	10,5,2	48 @ 250MHz	0.580	1.45	300	Green
WHI0805□R39	390 @ 100MHz	10,5,2	48 @ 250MHz	0.560	1.50	290	Brown
WHI0805□R43	430 @ 50MHz	10,5,2	33 @ 100MHz	0.430	1.70	230	Blue
WHI0805□R47	470 @ 50MHz	10,5,2	33 @ 100MHz	0.375	1.70	250	Red
WHI0805□R56	560 @ 25MHz	10,5,2	23 @ 50MHz	0.340	1.90	230	Orange
WHI0805□R60	600 @ 25MHz	10,5,2	23 @ 50MHz	0.260	1.60	450	White
WHI0805□R62	620 @ 25MHz	10,5,2	23 @ 50MHz	0.220	2.20	210	Yellow
WHI0805□R68	680 @ 25MHz	10,5,2	23 @ 50MHz	0.200	2.20	190	Green
WHI0805□R75	750 @ 25MHz	10,5,2	23 @ 50MHz	0.200	2.30	180	Blue
WHI0805□R82	820 @ 25MHz	10,5,2	23 @ 50MHz	0.200	2.35	180	Violet
WHI0805□1R0	1000 @ 25MHz	10,5,2	20 @ 50MHz	0.100	2.50	170	Gray
WHI0805□1R2	1200 @ 7.9MHz	10,5,2	18 @ 25MHz	0.100	2.50	170	White
WHI0805□1R5	1500 @ 7.9MHz	10,5,2	16 @ 25MHz	0.100	2.50	170	Black
WHI0805□1R8	1800 @ 7.9MHz	10,5,2	16 @ 7.9MHz	0.080	2.50	170	Brown
WHI0805□2R2	2200 @ 7.9MHz	10,5,2	16 @ 7.9MHz	0.060	2.70	160	Red
WHI0805□2R7	2700 @ 7.9MHz	10,5,2	16 @ 7.9MHz	0.050	3.10	150	Orange
WHI0805□3R3	3300 @ 7.9MHz	10,5,2	15 @ 7.9MHz	0.040	4.40	90	Blue
WHI0805□4R7	4700 @ 7.9MHz	10,5,2	15 @ 7.9MHz	0.040	6.40	90	Green

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1008 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
*WHI1008¨5N6	5.6 @ 50MHz	10,5	50 @ 1500MHz	4.000	0.15	1000	Black
*WHI1008¨10N	10 @ 50MHz	10,5,2	50 @ 500MHz	4.100	0.08	1000	Brown
*WHI1008¨12N	12 @ 50MHz	10,5,2	50 @ 500MHz	3.300	0.09	1000	Red
*WHI1008¨15N	15 @ 50MHz	10,5,2	50 @ 500MHz	2.500	0.11	1000	Orange
*WHI1008¨18N	18 @ 50MHz	10,5,2	50 @ 350MHz	2.400	0.12	1000	Yellow
*WHI1008¨22N	22 @ 50MHz	10,5,2	55 @ 350MHz	2.400	0.12	1000	Green
WHI1008¨24N	24 @ 50MHz	10,5,2	55 @ 350MHz	1.900	0.13	1000	Blue
*WHI1008¨27N	27 @ 50MHz	10,5,2	55 @ 350MHz	1.600	0.13	1000	Violet
*WHI1008¨33N	33 @ 50MHz	10,5,2	60 @ 350MHz	1.600	0.14	1000	Gray
*WHI1008¨36N	36 @ 50MHz	10,5,2	60 @ 350MHz	1.600	0.15	1000	Orange
*WHI1008¨39N	39 @ 50MHz	10,5,2	60 @ 350MHz	1.500	0.15	1000	White
*WHI1008¨47N	47 @ 50MHz	10,5,2	65 @ 350MHz	1.500	0.16	1000	Black
*WHI1008¨56N	56 @ 50MHz	10,5,2	65 @ 350MHz	1.300	0.18	1000	Brown
*WHI1008¨62N	62 @ 50MHz	10,5,2	65 @ 350MHz	1.250	0.20	1000	Blue
*WHI1008¨68N	68 @ 50MHz	10,5,2	65 @ 350MHz	1.300	0.20	1000	Red
WHI1008¨75N	75 @ 50MHz	10,5,2	60 @ 350MHz	1.100	0.21	1000	White
*WHI1008¨82N	82 @ 50MHz	10,5,2	60 @ 350MHz	1.000	0.22	1000	Orange
*WHI1008¨91N	91 @ 50MHz	10,5,2	50 @ 350MHz	1.000	0.45	1000	White
*WHI1008¨R10	100 @ 25MHz	10,5,2	60 @ 350MHz	1.000	0.56	650	Yellow
*WHI1008¨R12	120 @ 25MHz	10,5,2	60 @ 350MHz	0.950	0.63	650	Green
*WHI1008¨R15	150 @ 25MHz	10,5,2	45 @ 100MHz	0.850	0.70	800	Blue
*WHI1008¨R18	180 @ 25MHz	10,5,2	45 @ 100MHz	0.750	0.77	620	Violet
*WHI1008¨R22	220 @ 25MHz	10,5,2	45 @ 100MHz	0.700	0.84	500	Gray
*WHI1008¨R24	240 @ 25MHz	10,5,2	45 @ 100MHz	0.650	0.88	500	White
*WHI1008¨R27	270 @ 25MHz	10,5,2	45 @ 100MHz	0.600	0.91	690	Black
*WHI1008¨R30	300 @ 25MHz	10,5,2	45 @ 100MHz	0.585	1.00	450	Brown
*WHI1008¨R33	330 @ 25MHz	10,5,2	45 @ 100MHz	0.570	1.05	450	Red
*WHI1008¨R36	360 @ 25MHz	10,5,2	45 @ 100MHz	0.530	1.10	470	Orange
*WHI1008¨R39	390 @ 25MHz	10,5,2	45 @ 100MHz	0.500	1.12	630	Yellow
*WHI1008¨R43	430 @ 25MHz	10,5,2	45 @ 100MHz	0.480	1.15	470	Green
*WHI1008¨R47	470 @ 25MHz	10,5,2	45 @ 100MHz	0.450	1.19	470	Blue
*WHI1008¨R56	560 @ 25MHz	10,5,2	45 @ 100MHz	0.415	1.33	580	Violet

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1008 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
*WHI1008¨R62	620 @ 25MHz	10,5,2	45 @ 100MHz	0.375	1.40	300	Gray
*WHI1008¨R68	680 @ 25MHz	10,5,2	45 @ 100MHz	0.375	1.47	540	White
*WHI1008¨R75	750 @ 25MHz	10,5,2	45 @ 100MHz	0.360	1.54	360	Black
*WHI1008¨R82	820 @ 25MHz	10,5,2	45 @ 100MHz	0.350	1.61	400	Brown
*WHI1008¨R91	910 @ 25MHz	10,5,2	35 @ 50MHz	0.320	1.68	380	Red
*WHI1008¨1R0	1000 @ 25MHz	10,5,2	35 @ 50MHz	0.290	1.75	370	Orange
*WHI1008¨1R2	1200 @ 7.9MHz	10,5,2	35 @ 50MHz	0.250	2.00	310	Yellow
*WHI1008¨1R5	1500 @ 7.9MHz	10,5,2	28 @ 50MHz	0.200	2.30	330	Green
*WHI1008¨1R8	1800 @ 7.9MHz	10,5,2	28 @ 50MHz	0.160	2.60	300	Blue
*WHI1008¨2R2	2200 @ 7.9MHz	10,5,2	28 @ 50MHz	0.160	2.80	280	Violet
*WHI1008¨2R7	2700 @ 7.9MHz	10,5,2	22 @ 25MHz	0.140	3.20	290	Gray
*WHI1008¨3R3	3300 @ 7.9MHz	10,5,2	22 @ 25MHz	0.110	3.40	290	White
*WHI1008¨3R9	3900 @ 7.9MHz	10,5,2	18 @ 25MHz	0.100	3.60	260	Black
*WHI1008¨4R7	4700 @ 7.9MHz	10,5,2	18 @ 25MHz	0.090	4.00	260	Brown
WHI1008¨5R6	5600 @ 7.9MHz	10,5,2	16 @ 7.96MHz	0.020	4.00	240	Red
WHI1008¨6R8	6800 @ 7.9MHz	10,5,2	15 @ 7.96MHz	0.040	4.90	200	Orange
WHI1008¨8R2	8200 @ 7.9MHz	10,5,2	15 @ 7.96MHz	0.025	6.00	170	Yellow
WHI1008¨103	10000 @ 2.52MHz	10,5,2	15 @ 7.96MHz	0.020	9.00	150	Green
WHI1008¨123	12000 @ 2.52MHz	10,5,2	15 @ 7.96MHz	0.018	10.5	130	Blue
WHI1008¨153	15000 @ 2.52MHz	10,5,2	15 @ 7.96MHz	0.015	11.5	120	Violet

***** Test Methods / Instrument : Network / Spectrum Analyzer.

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1206 Wire Wound Chip Inductors / Standard

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
WHI1206□6N8	6.8 @ 100MHz	10,5	30 @ 300MHz	5.50	0.07	1000	Brown
WHI1206□10N	10.0 @ 100MHz	10,5	40 @ 300MHz	4.00	0.08	1000	Red
WHI1206□12N	12.0 @ 100MHz	10,5	40 @ 300MHz	3.20	0.08	1000	Orange
WHI1206□15N	15.0 @ 100MHz	10,5	40 @ 300MHz	3.20	0.10	1000	Yellow
WHI1206□18N	18.0 @ 100MHz	10,5	50 @ 300MHz	2.80	0.10	1000	Green
WHI1206□22N	22.0 @ 100MHz	10,5	50 @ 300MHz	2.20	0.10	1000	Blue
WHI1206□24N	24.0 @ 100MHz	10,5	50 @ 300MHz	2.00	0.10	1000	Red
WHI1206□27N	27.0 @ 100MHz	10,5,2	50 @ 300MHz	1.80	0.11	1000	Violet
WHI1206□33N	33.0 @ 100MHz	10,5,2	55 @ 300MHz	1.80	0.11	1000	Gray
WHI1206□39N	39.0 @ 100MHz	10,5,2	55 @ 300MHz	1.80	0.12	1000	White
WHI1206□47N	47.0 @ 100MHz	10,5,2	55 @ 300MHz	1.50	0.13	1000	Black
WHI1206□56N	56.0 @ 100MHz	10,5,2	55 @ 300MHz	1.45	0.14	1000	Brown
WHI1206□62N	62.0 @ 100MHz	10,5,2	55 @ 300MHz	1.20	0.20	1000	Violet
WHI1206□68N	68.0 @ 100MHz	10,5,2	55 @ 300MHz	1.20	0.26	950	Red
WHI1206□82N	82.0 @ 100MHz	10,5,2	55 @ 300MHz	1.20	0.21	920	Orange
WHI1206□91N	91.0 @ 100MHz	10,5,2	55 @ 300MHz	1.10	0.24	900	White
WHI1206□R10	100 @ 100MHz	10,5,2	55 @ 300MHz	1.10	0.26	850	Yellow
WHI1206□R12	120 @ 100MHz	10,5,2	55 @ 300MHz	0.75	0.26	800	Green
WHI1206□R15	150 @ 100MHz	10,5,2	60 @ 300MHz	0.95	0.31	750	Blue
WHI1206□R18	180 @ 50MHz	10,5,2	55 @ 300MHz	0.90	0.43	700	Violet
WHI1206□R22	220 @ 50MHz	10,5,2	55 @ 300MHz	0.76	0.50	670	Gray
WHI1206□R27	270 @ 50MHz	10,5,2	55 @ 300MHz	0.74	0.56	630	White
WHI1206□R30	300 @ 50MHz	10,5,2	50 @ 150MHz	0.68	0.60	600	Green
WHI1206□R33	330 @ 50MHz	10,5,2	45 @ 150MHz	0.65	0.62	590	Black
WHI1206□R36	360 @ 50MHz	10,5,2	45 @ 150MHz	0.60	0.65	550	Blue
WHI1206□R39	390 @ 50MHz	10,5,2	45 @ 150MHz	0.60	0.75	530	Brown
WHI1206□R47	470 @ 50MHz	10,5,2	45 @ 150MHz	0.55	1.30	490	Red
WHI1206□R56	560 @ 35MHz	10,5,2	45 @ 150MHz	0.47	1.34	460	Orange
WHI1206□R62	620 @ 35MHz	10,5,2	45 @ 150MHz	0.47	1.58	460	Gray
WHI1206□R68	680 @ 35MHz	10,5,2	45 @ 150MHz	0.45	1.58	430	Yellow
WHI1206□R75	750 @ 35MHz	10,5,2	45 @ 150MHz	0.44	2.25	320	White
WHI1206□R82	820 @ 35MHz	10,5,2	45 @ 150MHz	0.42	1.82	400	Green
WHI1206□R91	910 @ 35MHz	10,5,2	45 @ 150MHz	0.41	2.95	310	Green
WHI1206□1R0	1000 @ 35MHz	10,5,2	45 @ 150MHz	0.40	2.80	320	Blue
WHI1206□1R2	1200 @35MHz	10,5,2	45 @ 150MHz	0.38	3.20	300	Violet

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0805 Wire Wound Chip Inductors / Low Profile

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
WHI0805¨L1N8	1.8 @ 250MHz	10	55 @ 1500MHz	9.40	0.03	800	Black
WHI0805¨L3N9	3.9 @ 250MHz	10,5	60 @ 1000MHz	6.10	0.06	800	Brown
WHI0805¨L4N7	4.7 @ 250MHz	10,5	50 @ 1000MHz	5.50	0.06	800	Red
WHI0805¨L6N8	6.8 @ 250MHz	10,5	50 @ 1000MHz	5.50	0.08	800	Orange
WHI0805¨L8N2	8.2 @ 250MHz	10,5	50 @ 1000MHz	4.80	0.08	800	Yellow
WHI0805¨L10N	10.0 @ 250MHz	10,5,2	55 @ 750MHz	3.30	0.08	800	Green
WHI0805¨L12N	12.0 @ 250MHz	10,5,2	55 @ 750MHz	3.80	0.10	800	Blue
WHI0805¨L15N	15.0 @ 250MHz	10,5,2	50 @ 500MHz	2.95	0.10	800	Violet
WHI0805¨L18N	18.0 @ 250MHz	10,5,2	50 @ 500MHz	3.10	0.13	800	Gray
WHI0805¨L22N	22.0 @ 250MHz	10,5,2	50 @ 500MHz	2.90	0.15	800	Whit
WHI0805¨L27N	27.0 @ 250MHz	10,5,2	50 @ 500MHz	2.45	0.23	600	Black
WHI0805¨L33N	33.0 @ 250MHz	10,5,2	50 @ 500MHz	2.35	0.28	600	Brown
WHI0805¨L39N	39.0 @ 250MHz	10,5,2	50 @ 500MHz	2.20	0.33	600	Red
WHI0805¨L47N	47.0 @ 200MHz	10,5,2	50 @ 500MHz	2.00	0.39	600	Orange
WHI0805¨L56N	56.0 @ 200MHz	10,5,2	50 @ 500MHz	1.85	0.39	500	Yellow
WHI0805¨L68N	68.0 @ 200MHz	10,5,2	50 @ 500MHz	1.50	0.40	500	Green
WHI0805¨L82N	82.0 @ 150MHz	10,5,2	50 @ 500MHz	1.50	0.44	500	Blue
WHI0805¨LR10	100.0 @ 150MHz	10,5,2	50 @ 500MHz	1.20	0.64	400	Violet
WHI0805¨LR12	120.0 @ 150MHz	10,5,2	40 @ 250MHz	1.15	0.68	300	Gray
WHI0805¨LR15	150.0 @ 150MHz	10,5,2	40 @ 250MHz	1.05	0.80	300	Whit
WHI0805¨L1R0	1000.0 @ 25MHz	10,5,2	16 @ 50MHz	0.08	3.50	170	Black

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1008 Wire Wound Chip Inductors / Low Profile

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
WHI1008¨L3N3	3.3 @ 50MHz	10,5	42 @ 1500MHz	6.00	0.03	1000	White
WHI1008¨L4N2	4.2 @ 50MHz	10,5	42 @ 1500MHz	6.00	0.15	1000	Black
WHI1008¨L6N8	6.8 @ 50MHz	10,5	50 @ 1500MHz	5.40	0.17	1000	Brown
WHI1008¨L8N2	8.2 @ 50MHz	10,5	50 @ 1500MHz	5.00	0.22	1000	Red
WHI1008¨L15N	15 @ 50MHz	10,5	57 @ 500MHz	3.00	0.22	1000	Orange
WHI1008¨L18N	18 @ 50MHz	10,5	50 @ 350MHz	2.40	0.12	1000	Gray
WHI1008¨L20N	20 @ 50MHz	10,5	72 @ 500MHz	2.40	0.33	1000	Yellow
WHI1008¨L27N	27 @ 50MHz	10,5	50 @ 350MHz	1.60	0.13	850	Green
WHI1008¨L30N	30 @ 50MHz	10,5	69 @ 500MHz	2.40	0.38	600	Blue
WHI1008¨L40N	40 @ 50MHz	10,5	67 @ 500MHz	2.00	0.43	600	Violet
WHI1008¨L50N	50 @ 50MHz	10,5,2	72 @ 500MHz	1.90	0.48	600	Gray
WHI1008¨L60N	60 @ 50MHz	10,5,2	75 @ 500MHz	1.80	0.52	600	White
WHI1008¨L70N	70 @ 50MHz	10,5,2	68 @ 500MHz	1.70	0.55	510	Black
WHI1008¨L80N	80 @ 50MHz	10,5,2	75 @ 500MHz	1.40	0.56	510	Brown
WHI1008¨LR18	180 @ 50MHz	10,5,2	50@ 350MHz	0.90	0.40	450	Blue
WHI1008¨LR56	560 @ 25MHz	10,5,2	40 @ 100MHz	0.415	1.33	400	Red

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0603 Wire Wound Chip Inductors / High Current

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
WHI0603¨H1N6	1.6 @ 250MHz	10,5	24	12.50	0.030	2400	Black
WHI0603¨H3N6	3.6 @ 250MHz	10,5	24	5.90	0.048	2300	Brown
WHI0603¨H3N9	3.9 @ 250MHz	10,5	25	5.90	0.054	2200	Red
WHI0603¨H6N8	6.8 @ 250MHz	10,5	35	5.80	0.054	2100	Orange
WHI0603¨H7N5	7.5 @ 250MHz	10,5	38	3.70	0.059	2100	Yellow
WHI0603¨H8N2	8.2 @ 250MHz	10,5	38	3.70	0.060	2000	White
WHI0603¨H10N	10.0 @ 250MHz	10,5,2	38	3.70	0.071	2000	Green
WHI0603¨H12N	12.0 @ 250MHz	10,5,2	38	3.00	0.075	2000	Blue
WHI0603¨H15N	15.0 @ 250MHz	10,5,2	38	2.80	0.080	1900	Violet
WHI0603¨H18N	18.0 @ 250MHz	10,5,2	40	2.80	0.099	1900	Gray
WHI0603¨H22N	22.0 @ 250MHz	10,5,2	42	2.40	0.099	1800	White
WHI0603¨H24N	24.0 @ 250MHz	10,5,2	42	2.40	0.105	1800	Black

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0805 Wire Wound Chip Inductors / High Q

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
WHI0805¨H2N5	2.5 @ 250MHz	10,5	80 @ 1500MHz	6.00	0.020	1600	Black
WHI0805¨H5N6	5.6 @ 250MHz	10,5	98 @ 1500MHz	6.00	0.035	1600	Brown
WHI0805¨H6N2	6.2 @ 250MHz	10,5	88 @ 1000MHz	4.75	0.035	1600	Red
WHI0805¨H6N8	6.8 @ 250MHz	10,5	80 @ 1000MHz	4.40	0.035	1600	White
WHI0805¨H8N2	8.2 @ 250MHz	10,5	75 @ 1000MHz	3.00	0.075	1000	Gray
WHI0805¨H10N	10 @ 250MHz	10,5	80@ 1000MHz	3.00	0.060	1600	Black
WHI0805¨H12N	12 @ 250MHz	10,5	80 @ 1000MHz	3.00	0.045	1600	Orange
WHI0805¨H15N	15 @ 250MHz	10,5,2	80 @ 1000MHz	2.80	0.100	1200	Black
WHI0805¨H16N	16 @ 250MHz	10,5,2	72 @ 500MHz	2.95	0.060	1500	Yellow
WHI0805¨H18N	18 @ 250MHz	10,5,2	75 @ 500MHz	2.55	0.060	1400	Green
WHI0805¨H20N	20 @ 250MHz	10,5,2	70 @ 500MHz	2.05	0.055	1400	Blue
WHI0805¨H22N	22 @ 250MHz	10,5,2	80 @ 500MHz	2.00	0.100	1200	Black
WHI0805¨H27N	27 @ 250MHz	10,5,2	75 @ 500MHz	2.00	0.070	1300	Violet
WHI0805¨H30N	30 @ 250MHz	10,5,2	65 @ 500MHz	1.95	0.095	1200	Gray
WHI0805¨H39N	39 @ 250MHz	10,5,2	65 @ 500MHz	1.60	0.110	1100	White
WHI0805¨H48N	48 @ 200MHz	10,5,2	65 @ 500MHz	1.40	0.095	1200	Black
WHI0805¨H51N	51 @ 200MHz	10,5,2	65 @ 500MHz	1.40	0.120	1000	Brown

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1008 Wire Wound Chip Inductors / High Q

AEM Part Number	*Inductance, nH*	*Tolerance*	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	*Color Code*
*WHI1008¨H3N0	3.0 @ 50MHz	10,5	70 @ 1500MHz	6.00	0.04	1600	Black
WHI1008¨H3N9	3.9 @ 50MHz	10,5	75 @ 1500MHz	6.00	0.05	1600	White
WHI1008¨H4N1	4.1 @ 50MHz	10,5	75 @ 1500MHz	6.00	0.05	1600	Brown
*WHI1008¨H7N8	7.8 @ 50MHz	10,5	75 @ 500MHz	3.80	0.05	1600	Red
WHI1008¨H10N	10 @ 50MHz	10,5,2	60 @ 500MHz	3.60	0.06	1600	Orange
WHI1008¨H12N	12 @ 50MHz	10,5,2	70 @ 500MHz	2.80	0.06	1500	Yellow
WHI1008¨H18N	18 @ 50MHz	10,5,2	62 @ 350MHz	2.70	0.07	1400	Green
WHI1008¨H22N	22 @ 50MHz	10,5,2	62 @ 350MHz	2.05	0.07	1400	Blue
WHI1008¨H33N	33 @ 50MHz	10,5,2	75 @ 350MHz	1.70	0.09	1300	Violet
WHI1008¨H39N	39 @ 50MHz	10,5,2	75 @ 350MHz	1.30	0.09	1300	Gray
WHI1008¨H47N	47 @ 50MHz	10,5,2	75 @ 350MHz	1.45	0.12	1200	White
WHI1008¨H56N	56 @ 50MHz	10,5,2	75 @ 350MHz	1.23	0.12	1200	Black
WHI1008¨H68N	68 @ 50MHz	10,5,2	80 @ 350MHz	1.15	0.13	1100	Brown
WHI1008¨H82N	82 @ 50MHz	10,5,2	80 @ 350MHz	1.06	0.16	1100	Red
WHI1008¨HR10	100 @ 50MHz	10,5,2	50@ 350MHz	0.82	0.16	1000	Orange

* Parts (3.0nH, 7.8nH) are wound on a low profile bobbin.

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Environmental Characteristics:

Mechanical Characteristics:

Item		Specification	Test Method
1	Vibration Test	Appearance: No damage L change: within ±5% Q change: within ±10%	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y &Z), total 6hrs
2	Resistance to Soldering-Heat		Solder Temperature: 270±5℃ Immersion Time: 10±2sec
3	Component Adhesion (Push Test)	1 lbs. For 0402 2 lbs. For 0603 3 lbs. For the rest	The device should be soldered (260±5℃ for 10 seconds) to a tinned copper subs rate. A dynamiter force gauge should be applied to the side of the component. The device must with stand a minimum force of 2 or 4 pounds without a failure of adhesion on termination
4	Drop Test	No damage	Dropping chip by each side and each corner. Drop 10 times in total Drop height :100cm Drop weight:125g
5	Solderability Test	90% covered with solder.	Inductor shall be dipped in a melted solder bath at 245±5℃ for 3 seconds.
6	Resistance to Solvent Test	No damage on appearance and marking.	MIL-STD202F,Method 215D

Electrical Characteristics:

Item		Specification	Test Method
1	Inductance	Refer to standard electrical characteristic spec.	HP4291B
2	Q		HP4291B
3	SRF		HP8753D
4	DC Resistance RDC		Micro-Ohm meter (Gom-801G)
5	Rated Current IDC		Applied the current to coils, The inductance change should be less than 10% to initial value
6	Over Load Test	Inductors shall have no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minute
7	Withstanding Voltage Test	Inductors shall be no evidence of electrical and mechanical damage.	AC voltage of 500 VAC applied between inductors terminal and case for 1 minute.
8	Insulation Resistance Test	1000M ohm min	100 VDC applied between inductor terminal and case

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Climatic Test:

<table>
<tr><th colspan="2">Item</th><th>Specification</th><th>Test Method</th></tr>
<tr><td>1</td><td>Temperature Characteristic</td><td rowspan="6">Appearance: No damage
L change: within ±10%
Q change: within ±20%</td><td>-40℃~+125℃</td></tr>
<tr><td>2</td><td>Humidity Test</td><td>Temperature: 40±2℃
Relative Humidity: 90~95%
Time: 96hrs±2hrs
Measured after exposure in the room condition for 2hrs</td></tr>
<tr><td>3</td><td>Low Temperature Storage Test</td><td>Temperature: -40±2℃
Time: 96±2hrs
Inductors are tested after 1 hour at room temperature</td></tr>
<tr><td>4</td><td>Thermal Shock Test</td><td>One cycle:
<table>
<tr><th>Step</th><th>Temperature（℃）</th><th>Time（min）</th></tr>
<tr><td>1</td><td>-25±3</td><td>30</td></tr>
<tr><td>2</td><td>25±2</td><td>15</td></tr>
<tr><td>3</td><td>125±3</td><td>30</td></tr>
<tr><td>4</td><td>25±2</td><td>15</td></tr>
</table>
Total: 5 cycles</td></tr>
<tr><td>5</td><td>High Temperature Storage Test</td><td>Temperature:125±2℃
Time: 96±2hrs
Measured after exposure in the room condition for 1hr</td></tr>
<tr><td>6</td><td>High Temperature Load Life Test</td><td rowspan="2">There should be no evidence of short of open circuit.</td><td>Temperature:85±2℃
Time:1000±12hrs
Load: Allowed DC current</td></tr>
<tr><td>7</td><td>Humidity Load Life</td><td>Temperature: 40±2℃
Relative Humidity: 90~95%
Time: 1000±12hrs
Load: Allowed DC current</td></tr>
</table>

※ Storage Temperature :25±3℃; Humidity:<80%RH

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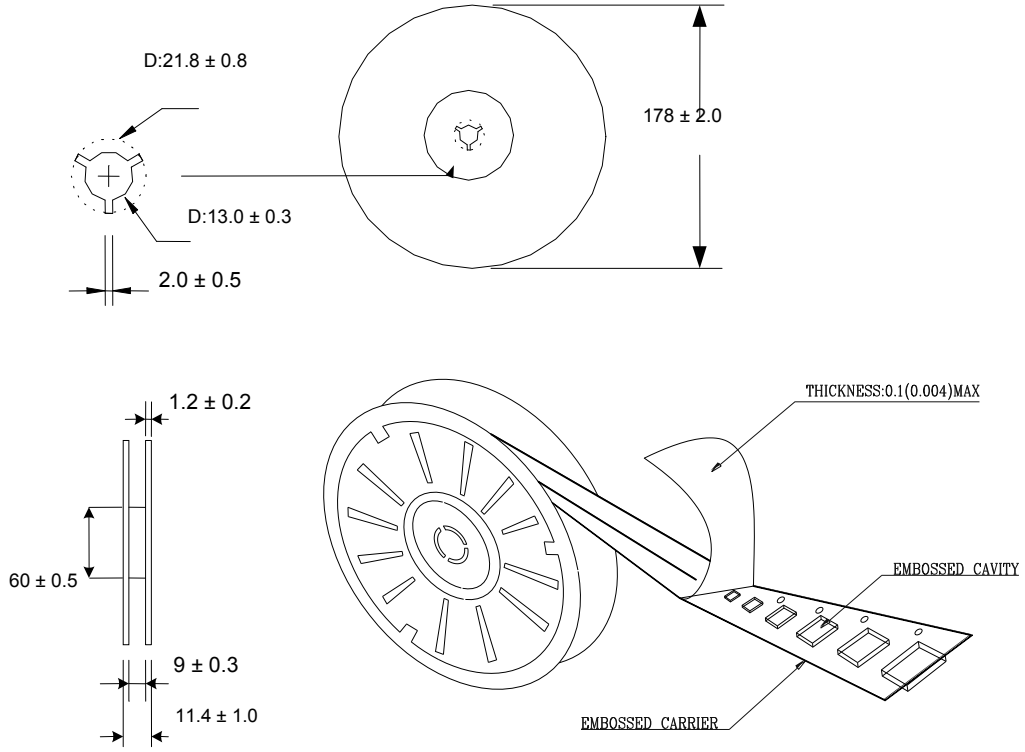
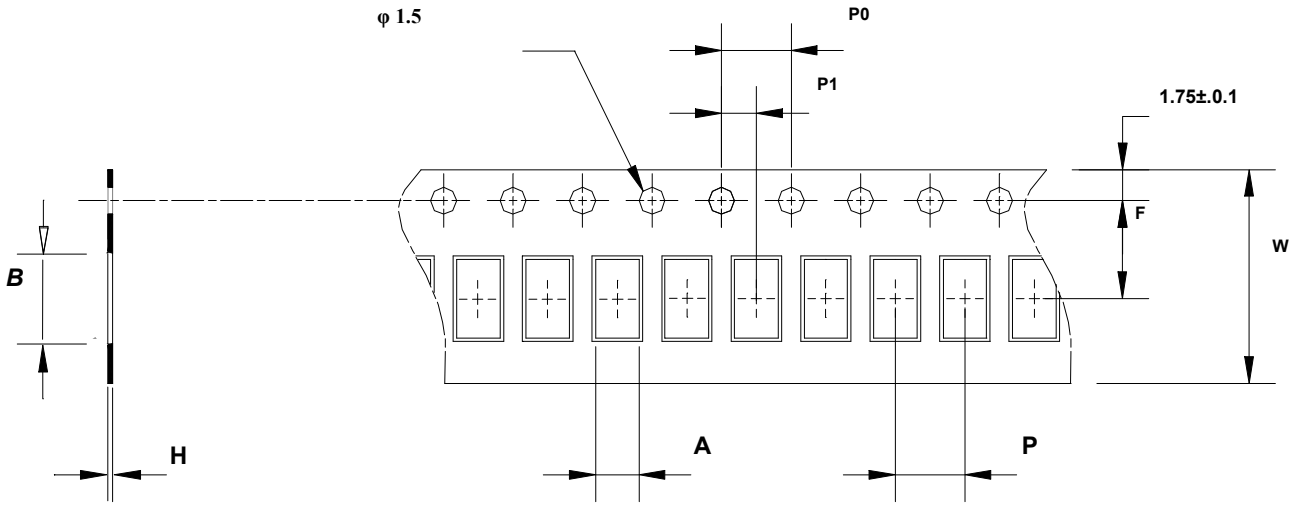
Packaging:

Reel Dimensions & Packaging Quantity (mm):



Paper Tape specification and Packaging Quantity (mm):



Series	A	B	K	F	P	P0	P1	W	Reel (EA)
WHI0402	0.80	1.22	0.60	3.50	2.00	4.00	2.00	8.00	4,000
WHI0603	1.35	1.95	0.95	3.50	4.00	4.00	2.00	8.00	4,000

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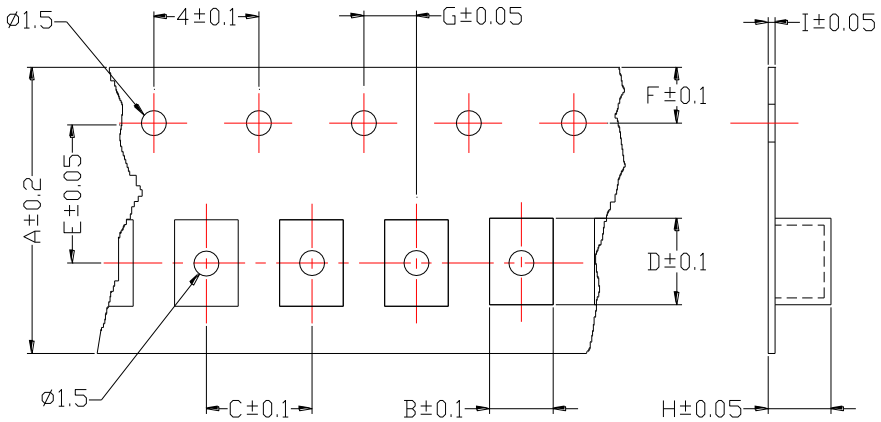
Emboss Plastic Tape specification and Packaging Quantity (mm):



Series	A	B	C	D	E	F	G	H	I	Reel (EA)
WHI0402	0.71	1.16	0.65	0.23	3.5	2	4	2	8	4000
WHI0603	1.12	1.85	0.96	0.23	3.5	4	4	2	8	4000
WHI0805	1.85	2.30	1.45	0.23	3.5	4	4	2	8	2000
WHI0805(L)	1.80	2.30	0.90	0.23	3.5	4	4	2	8	2000
WHI0805(H)	1.85	2.30	1.45	0.23	3.5	4	4	2	8	2000
WHI1206	1.95	3.50	1.50	0.23	3.5	4	4	2	8	2000
WHI1008	2.70	2.80	2.00	0.23	3.5	4	4	2	8	2000
WHI1008(L)	2.70	2.80	1.50	0.23	3.5	4	4	2	8	2000
WHI1008(H)	2.70	2.80	2.00	0.23	3.5	4	4	2	8	2000

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Inductor Terminology

Inductance: Inductance is the ability of a conductor to produce induced voltage when the current varies. The symbol for inductance is L and the unit is henry (H), 1 H = 1000 mH, 1 mH = 1000 μH, 1 μH = 1000 nH. Inductance of AEM's inductors is measured by using a LCR meter.

Impedance: Impedance is a measure of opposition to current. The symbol for impedance is Z and the unit is ohm and

$$Z = \sqrt{R^2 + X^2}$$

where *R* is the resistance (not DC resistance) and *X* is the reactance. *Z, R* and *X* are all frequency dependent. Impedance of AEM's chip beads is measured by using a LCR meter.

R_{DC}: R_{DC} is the resistance of the component measured with direct current. R_{DC} of AEM's inductive components is measured by using a milli-ohmmeter.

Maximum Rated Current: It is a measure of the current carrying capacity of the component. When the maximum rated current is applied to the component, the temperature rise shall not exceed 20°C.

Q: Q is the quality factor of an inductor. It is the ratio of its ability to produce self-induced voltage over the resistance that reduces the current and the induced voltage. It can be considered as the ratio of its capability to store energy over the capability to consume energy.

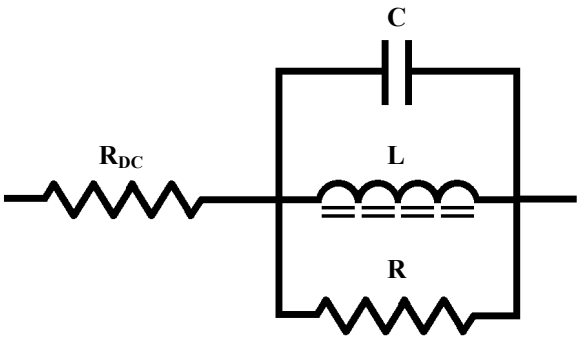
Q is highly dependent on frequency. Q values of AEM's inductors are measured by using an impedance analyzer or a network analyzer and

$$Q = \frac{X}{R}$$

Using an ideal resistor, an ideal capacitor and an ideal inductor, a real inductor can be simulated. The resistive component in an equivalent circuit comes from the DC resistance of the electrode and the electro-magnetic loss. The capacitive component comes from the parasitic capacitance of the coil.

Self-Resonant Frequency (SRF): When the frequency changes, the capacitive reactance X_C and inductive reactance X_L also change. The self-resonance frequency is the frequency at which the X_L equals X_C. At self-resonance frequency the inductor shows maximum impedance and a minimum line current. The SRF shall generally be specified as at least twice the application frequency, except for some special applications. SRF of AEM's inductors is measured by using an impedance analyzer or a network analyzer.

Equivalent Circuit of an Inductor:



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Numbering System

Product Identification for Discrete Components

MCB 0805 G 101 P T - T
(1) (2) (3) (4) (5) (6) (7)

(1) Series code:
MCB = Multilayer Ferrite Chip Beads
MBA = Multilayer Ferrite Chip Bead Arrays
MCP = Multilayer Ferrite Power Beads
MCI = Multilayer Ferrite Inductors
MHI = Multilayer Ceramic High Frequency Inductors
TFI = Thin Film Inductors

(2) Size code: From 0201 to 1812
Other sizes are available. Please consult factory.

(3) Characteristic code: A, B, C, F, G, H, J, S, U

(4) Value Code:
* For MCB, MBA, and MCP (ohm)
The first two digits are significant figures. The last digit specifies the number of zeros to follow.
Examples:
100 —— 10 ohms
101 —— 100 ohms
102 —— 1000 ohms

* For MCI (nH)
The first two digits are significant figures. The last digit specifies the number of zeros to follow.
Examples:
470 —— 47 nH = 0.047 µH
471 —— 470 nH = 0.47 µH
472 —— 4700 nH = 4.7 µH

* For MHI and TFI (nH, µH)
N — decimal point for nH
Example:
1N2 = 1.2 nH
R — decimal point for µH
Example:
R10 = 0.10 µH

(5) Tolerance code:
F = ± 1% M = ± 20%
G = ± 2% P = ± 25%
H = ± 3% B = ± 0.1 nH
J = ± 5% C = ± 0.2 nH
K = ± 10% S = ± 0.3 nH

(6) Pakage code:
T = Tape & Reel
B = Bulk

(7) Termination type code:
T = 100% Sn plating

Part Number

Product Series	*Chip Size*	*Characteristics*	*Value*	*Tolerance*	*Tape/Bulk*	*Termination Type*
MCB	**0805 (2012)**	**F**	**500**	**P**	**T**	**T**
Multilayer Ferrite Chip Beads	0402 (1005) 0603 (1608) 0805 (2012) 1206 (3216) 1210 (3225) 1806 (4516) 1812 (4532)	F, G, S, U	50(0) (0) = # of zeros following 50 ohms	P = ±25%	T = Taped B = Bulk	T = 100% Sn plating
MBA	**1206 (3216)**	**F**	**600**	**P**	**T**	**T**
Multilayer Ferrite Chip Bead Arrays	1206(3216)	A, B	60((0) (0)=# of zeros following 60 ohms	P = ±25%	T = Taped B = Bulk	T = 100% Sn plating
MCP	**0805 (2012)**	**F**	**500**	**P**	**T**	**T**
Multilayer Ferrite Power Beads	0603 (1608) 0805 (2012) 1206 (3216) 1210 (3225) 1806 (4516) 1812 (4532)	F	50(0) (0) = # of zeros following 50 ohms	P = ±25%	T = Taped B = Bulk	T = 100% Sn plating
MCI	**0805 (2012)**	**H**	**561**	**M**	**T**	**T**
Multilayer Ferrite Inductors	0603 (1608) 0805 (2012) 1206 (3216)	H, J	56(1) (1) = # of zeros following 560 nano-henries	K = ±10% M = ±20%	T = Taped B = Bulk	T = 100% Sn plating
MHI	**0603 (1608)**	**C**	**1N5**	**K**	**T**	**T**
Multilayer Ceramic High Frequency Inductors	0402 (1005) 0603 (1608)	C	1(N)5 N = decimal point 1.5 nano-henries (R)12 R = decimal point 0.12 micro-henries	J = ±5% K = ±10% S = ±0.3nH	T = Taped B = Bulk	T = 100% Sn plating
TFI	**0603 (1608)**	**C**	**1N5**	**K**	**T**	**T**
Thin Film Inductors	0201 (0502) 0402 (1005) 0603 (1608)	C	1(N)5 N = decimal point 1.5 nano-henries (R)10 R = decimal point 0.10 micro-henries	F = ±1% G = ±2% H = ±3% J = ±5% B = ±0.1nH C = ±0.2nH S = ±0.3nH	T = Taped B = Bulk	T = 100% Sn plating

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Reliability Tests For MCB/MBA/MCP/MCI/MHI

No.	Test	Requirement	Test condition	Test reference
1	Soldering heat resistance	ΔZ/ΔL ≤ ±20%, ΔL≤ ± 10% (MHI) ≥ 75% coverage No cracking	One dip at 260°C for 10 sec.	Mil-Std-202, Method 210
2	Solderability	≥ 95% coverage	One dip at 255°C for 5 sec.	Mil-Std-202, Method 208
3	Thermal shock	ΔZ/ΔL ≤ ±20% DCR ≤ max. specified No damage	500 cycles between -40°C and +105°C	Mil-Std-202, Method 107
4	Load humidity	ΔZ/ΔL ≤ ±15% DCR ≤ max. specified No damage	1000 h at 85°C with 85% RH and 10% rated current	
5	Mechanical vibration	ΔZ/ΔL ≤ ±10% No damage	0.06 D.A. or 15 G between 10 – 2000 Hz	Mil-Std-202, Method 204
6	Mechanical shock	ΔZ/ΔL ≤ ±10% No damage	50 G, 11 ms, half-sine shocks	Mil-Std-202, Method 213
7	Terminal strength	No damage	0.5 kg to 1.5 kg hanging for 30 sec. 2 lb pushing (0402)	
8	Life	ΔZ/ΔL ≤ ±15% DCR ≤ max. specified No damage	1000 h at 85°C with rated current	
9	Bending	ΔZ/ΔL ≤ ±10% No damage	2 mm bend for ≥ 5 sec.	
10	Leach resistance	≤ 5% leached away	5 dips of 5 sec. each at 260°C	
11	Solvent resistance	ΔZ/ΔL ≤ ±10%	3 min. in agitated isopropyl alcohol	
12	Insulation resistance	≥ 1 GΩ	100 VDC for 30 sec.	

Reliability Tests For TFI

No.	Test	Requirement	Test condition	Test reference
1	Bending	ΔL ≤ ±10% No damage	3 mm bend for ≥10 sec.	JIS-C-5202-6.1.4
2	Dielectric withstanding voltage	>100V	100VA (rms) for 1 min.	Mil-Std-202, Method 301
3	Insulation resistance	≥ 1 GΩ	100VDC for 1 min.	Mil-Std-202, Method 302
4	Soldering heat resistance	ΔL ≤ ±10%	One dip at 260°C for 10 sec.	Mil-Std-202, Method 210
5	Life	ΔL ≤ ±10%	1000 h at 85°C	JIS-C-5202-7.2
6	Moisture resistance	ΔL ≤ ±10%	1000 h at 40°C with 90% RH	Mil-Std-202, Method 103
7	Low temperature storage	ΔL ≤ ±10%	1000 h at -40°C	JIS-C-5202-7.1
8	Thermal shock	ΔL ≤ ±10%	10 cycles between -40°C and +85°C	JIS-C-5202-7.4
9	Solderability	≥ 95% coverage	One dip at 245°C for 3 sec.	Mil-Std-202, Method 208

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Environmental Tests For WHI

Mechanical Characteristics:

Item		Specification	Test Method
1	Vibration Test	Appearance: No damage L change: within ±5% Q change: within ±10%	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y &Z), total 6hrs
2	Resistance to Soldering-Heat		Solder Temperature: 270±5℃ Immersion Time: 10±2sec
3	Component Adhesion (Push Test)	1 lbs. For 0402 2 lbs. For 0603 3 lbs. For the rest	The device should be soldered (260±5℃ for 10 seconds) to a tinned copper subs rate. A dynamiter force gauge should be applied to the side of the component. The device must with stand a minimum force of 2 or 4 pounds without a failure of adhesion on termination
4	Drop Test	No damage	Dropping chip by each side and each corner. Drop 10 times in total Drop height :100cm Drop weight:125g
5	Solderability Test	90% covered with solder.	Inductor shall be dipped in a melted solder bath at 245±5℃ for 3 seconds.
6	Resistance to Solvent Test	No damage on appearance and marking.	MIL-STD202F,Method 215D

Electrical Characteristics:

Item		Specification	Test Method
1	Inductance	Refer to standard electrical characteristic spec.	HP4291B
2	Q		HP4291B
3	SRF		HP8753D
4	DC Resistance RDC		Micro-Ohm meter (Gom-801G)
5	Rated Current IDC		Applied the current to coils, The inductance change should be less than 10% to initial value
6	Over Load Test	Inductors shall have no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minute
7	Withstanding Voltage Test	Inductors shall be no evidence of electrical and mechanical damage.	AC voltage of 500 VAC applied between inductors terminal and case for 1 minute.
8	Insulation Resistance Test	1000M ohm min	100 VDC applied between inductor terminal and case

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Environmental Tests For WHI

Climatic Test:

<table>
<tr><th colspan="2">Item</th><th>Specification</th><th>Test Method</th></tr>
<tr><td>1</td><td>Temperature Characteristic</td><td rowspan="5">Appearance: No damage
L change: within ±10%
Q change: within ±20%</td><td>-40℃~+125℃</td></tr>
<tr><td>2</td><td>Humidity Test</td><td>Temperature: 40±2℃
Relative Humidity: 90~95%
Time: 96hrs±2hrs
Measured after exposure in the room condition for 2hrs</td></tr>
<tr><td>3</td><td>Low Temperature Storage Test</td><td>Temperature: -40±2℃
Time: 96±2hrs
Inductors are tested after 1 hour at room temperature</td></tr>
<tr><td>4</td><td>Thermal Shock Test</td><td>One cycle:
<table>
<tr><th>Step</th><th>Temperature（℃）</th><th>Time（min）</th></tr>
<tr><td>1</td><td>-25±3</td><td>30</td></tr>
<tr><td>2</td><td>25±2</td><td>15</td></tr>
<tr><td>3</td><td>125±3</td><td>30</td></tr>
<tr><td>4</td><td>25±2</td><td>15</td></tr>
</table>
Total: 5 cycles</td></tr>
<tr><td>5</td><td>High Temperature Storage Test</td><td>Temperature:125±2℃
Time: 96±2hrs
Measured after exposure in the room condition for 1hr</td></tr>
<tr><td>6</td><td>High Temperature Load Life Test</td><td rowspan="2">There should be no evidence of short of open circuit.</td><td>Temperature:85±2℃
Time:1000±12hrs
Load: Allowed DC current</td></tr>
<tr><td>7</td><td>Humidity Load Life</td><td>Temperature: 40±2℃
Relative Humidity: 90~95%
Time: 1000±12hrs
Load: Allowed DC current</td></tr>
</table>

※ Storage Temperature :25±3℃; Humidity:<80%RH

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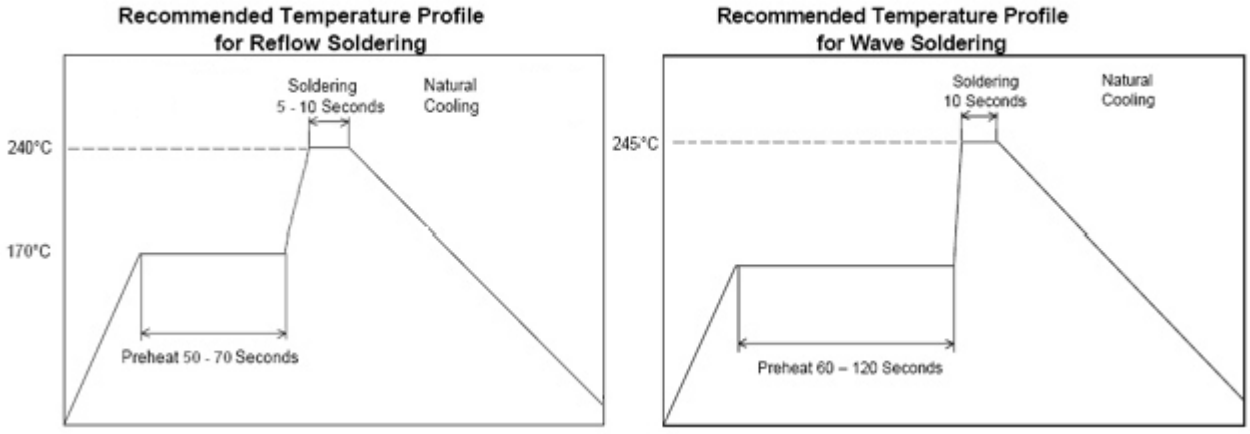
Soldering Temperature Profiles

Recommended Temperature Profiles for Soldering

AEM's inductive components can be soldered on PCB using wave or reflow soldering processes. The recommended temperature profiles for soldering are listed in the following diagrams.



1. Maximum peak temperature 260°C for maximum 60 seconds.
2. Above temperature profiles are recommended for Pb-free solders.

Storage Requirements

The maximum ambient temperature shall not exceed 40°C. Storage temperatures higher than 40°C could result in the deformation of packaging materials. The maximum relative humidity recommended for storage is 70%. High humidity with high temperature can accelerate the oxidation of the plating on the termination and reduce the solderability of the components. Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use. The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.

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Packaging and Storage

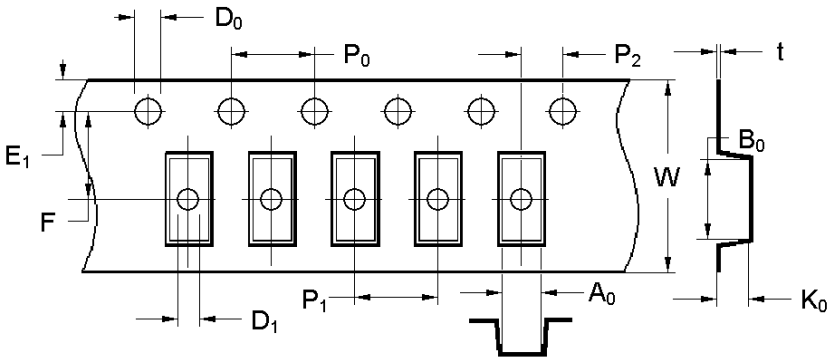
Packaging

AEM's multilayer components are provided on tape-and-reel for use in pick-and-place machines or in bulk for special applications. Both tape-and-reel and bulk products are sealed in plastic bags with desiccant. The reel size can be 7 inches or 13 inches, depending on customer's preference.

Dimensions of Tape in Inches (mm)

Size	*Ao*	*Bo*	*Ko*	*Type*
0201 (0502)	0.016 ± 0.002 (0.40 ± 0.05)	0.028 ± 0.002 (0.70 ± 0.05)	0.011 ± 0.004 (0.27 ± 0.10)	Paper
0402 (1005)	0.026 ± 0.004 (0.67 ± 0.10)	0.046 ± 0.004 (1.17 ± 0.10)	0.025 ± 0.004 (0.63 ± 0.10)	Paper
0603 (1608)	0.045 ± 0.004 (1.15 ± 0.10)	0.073 ± 0.004 (1.85 ± 0.10)	0.043 ± 0.004 (1.10 ± 0.10)	Paper
	0.043 ± 0.004 (1.10 ± 0.10)	0.075 ± 0.004 (1.90 ± 0.10)	0.043 ± 0.004 (1.10 ± 0.10)	Plastic
0805 (2012)	0.063 ± 0.004 (1.60 ± 0.10)	0.094 ± 0.004 (2.40 ± 0.10)	0.047 ± 0.004 (1.20 ± 0.10)	Paper/ Plastic
1206 (3216)	0.071 ± 0.004 (1.80 ± 0.10)	0.138 ± 0.004 (3.50 ± 0.10)	0.047 ± .004 (1.20 ± 0.10)	Plastic
1210 (3225)	0.106 ± 0.004 (2.69 ± 0.10)	0.137 ± 0.004 (3.48 ± 0.10)	0.056 ± 0.004 (1.43 ± 0.10)	Plastic
1806 (4516)	0.075 ± 0.004 (1.90 ± 0.10)	0.193 ± 0.004 (4.90 ± 0.10)	0.079 ± 0.004 (2.00 ± 0.10)	Plastic
1812 (4532)	0.144 ± 0.004 (3.66 ± 0.10)	0.195 ± 0.004 (4.95 ± 0.10)	0.072 ± 0.004 (1.83 ± 0.10)	Plastic

Other sizes can be provided upon customer's request.



Size	*E_1*	*F*	*W*	*P_1*	*P_o*	*P_2*	*D_o*	*D_1*	*t*
0201(0502)	0.069 ± 0.004 (1.75 ± 0.10)	0.138 ± 0.002(3.50 ± 0.05)	0.315 ± 0.004(8.00 ± 0.10)	0.079 ± 0.004 (2.00 ± 0.10)	0.157 ± 0.004 (4.00 ± 0.10)	0.039 ± 0.002 (1.00 ± 0.05)	0.059 + 0.004 (1.50 + 0.10/-0.00)	N/A	0.009 ± 0.001 (0.23 ± 0.02)
0402(1005)									
0603(1608)				0.157 ± 0.004 (4.00 ± 0.10)		0.079 ± 0.002 (2.00 ± 0.05)		0.039 max (1.00 max)	
0805(2012)									
1206(3216)									
1210(3225)									
1806(4516)			0.472 ± 0.004 (12.00 ± 0.10)	0.315 ± 0.004 (8.00 ± 0.10)					
1812(4532)									

Other sizes can be provided upon customer's request.

Chip Size	*Parts on 7 inch (178 mm) Reel*	*Parts on 13 inch (330 mm) Reel*
0201(0502)	**10,000**	**NA**
0402(1005)	**10,000**	**NA**
0603(1608)	**4,000/5, 000**	**12,000**
0805(2012)	**2,000/3,000/4,000**	**10,000**
1206(3216)	**3,000**	**10,000**
1210(3225)	**2,500**	**NA**
1806(4516)	**2,000**	**10,000**
1812(4532)	**1,000**	**NA**

Other sizes and chip quantities can be provided upon customer's request.

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Cross Reference

AEM's Multilayer Ferrite Chip Bead (MCB)

Series Cross-References

AEM	MCB (size)
Murata	BLM (size)
Tokin	N (size)
TDK	HF50/70/30 (size)
TDK	ACB (size)
TDK	MMZ (size)
Taiyo Yuden	FBM (size)
Taiyo Yuden	BK (size)

AEM's Multilayer Ferrite Chip Bead Array (MBA)

Series Cross-References

AEM	MBA (size)
Murata	BLA (size)
TDK	ACA (size)
TDK	MZA (size)
Taiyo Yuden	BK (size) 4S/M/L

AEM's Multilayer Power Chip Bead (MCP)

Series Cross-References

AEM	MCP (size)
Murata	BLM (size)
Tokin	N (size)
TDK	HF50/70/30 (size)
TDK	ACB (size)
TDK	MMZ (size)
Taiyo Yuden	FBM (size)
Taiyo Yuden	BK (size)

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Cross Reference

AEM's Multilayer Ferrite Chip Inductor (MCI)

Series Cross-References

AEM	MCI (size)
Murata	LQG (size) N
TDK	MLF (size)
Taiyo Yuden	LK (size)

AEM's Multilayer Ceramic (MHI)

Series Cross-References

AEM	MHI (size)
Murata	LQG (size) A
TDK	MLG/R (size)
Taiyo Yuden	HK (size)
TOKO	LL (size)

AEM's Thin Film Inductors (TFI)

Series Cross-References

AEM	TFI (size)
Murata	LQP (size)
Panasonic	ELJ (size)
AVX	L (size)
SUSUMU	HPL / TFL (size)
KOA	KL73（size)

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Information Request Fax Form

To

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Tel: 86-512-62580028
Fax:86-512-62580018
Web Site: www.aemchina.com
Email: sales@aemchina.com

I am interested in receiving the following
Information:

- ☐ Catalog of Components
- ☐ CD-Rom
- ☐ Cross-reference
- ☐ Sample Kit, specify _____
- ☐ Other, specify part number and inquiry

Message:

From

Date: _____
Name: _____
Title: _____
Company: _____
Address: _____
_____
_____
Telephone: _____
Fax: _____
Email: _____
Website: _____

AEM Components Co., Ltd

Email: sales@aemchina.com

All of the listed standard values are subject to change without notice due to improvements.