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The Power of Linking Together

Abracon PTM

Introduction to AIML, AIAC and AISM Inductor

Crystals
Oscillators
Filters
Precision Timing
Inductors

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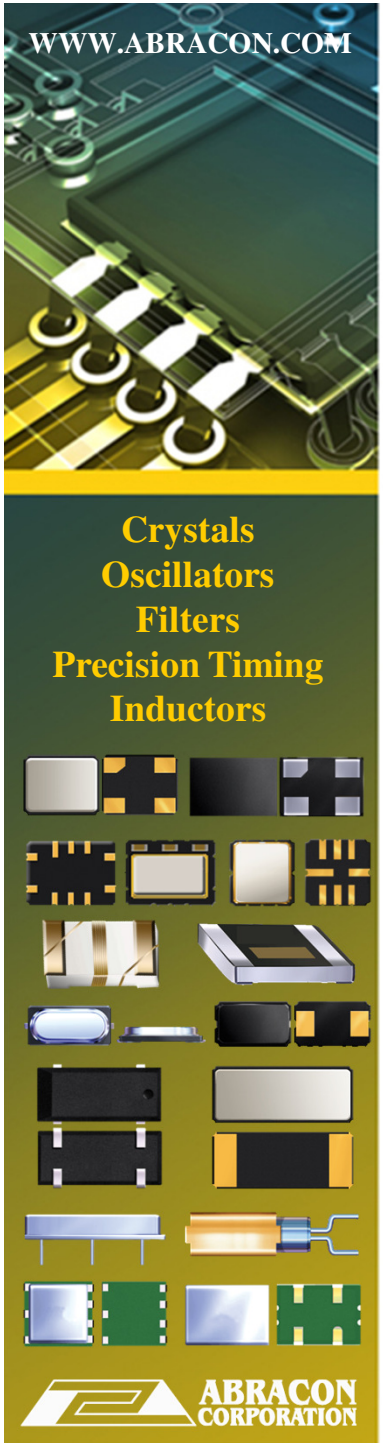


AIML, AIAC and AISM Inductors

Purpose

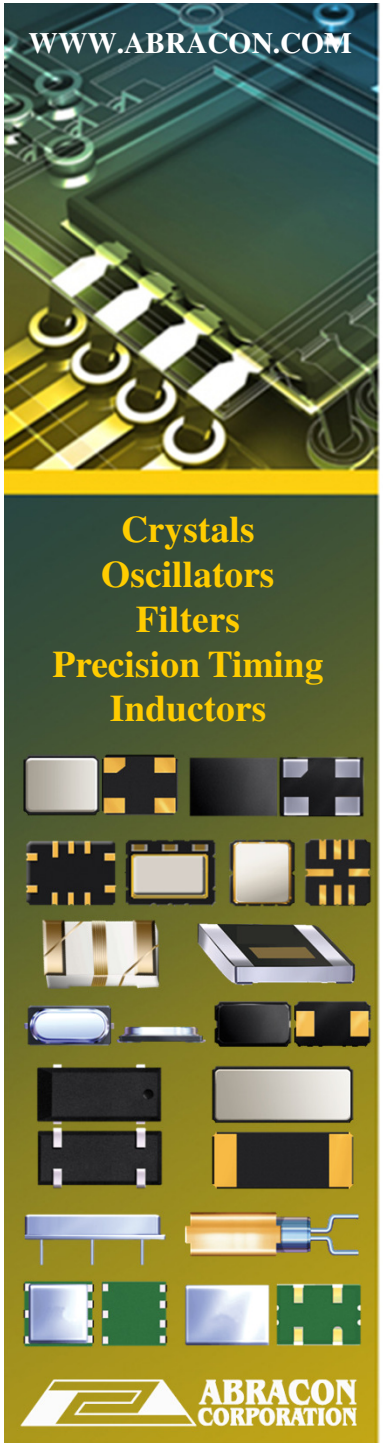
To introduce AIML (Multilayer Ferrite), AIAC (Air Coil) and AISM (Molded Ferrite Wire wound) chip Inductors.

Objective

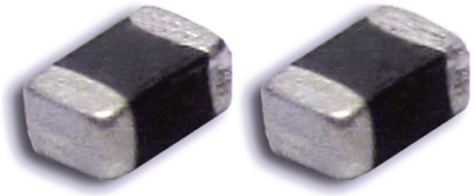
Present the structure, electrical characteristics and applications for AIML, AIAC and AISM series.

Content

9 pages



Product AIML Series Description



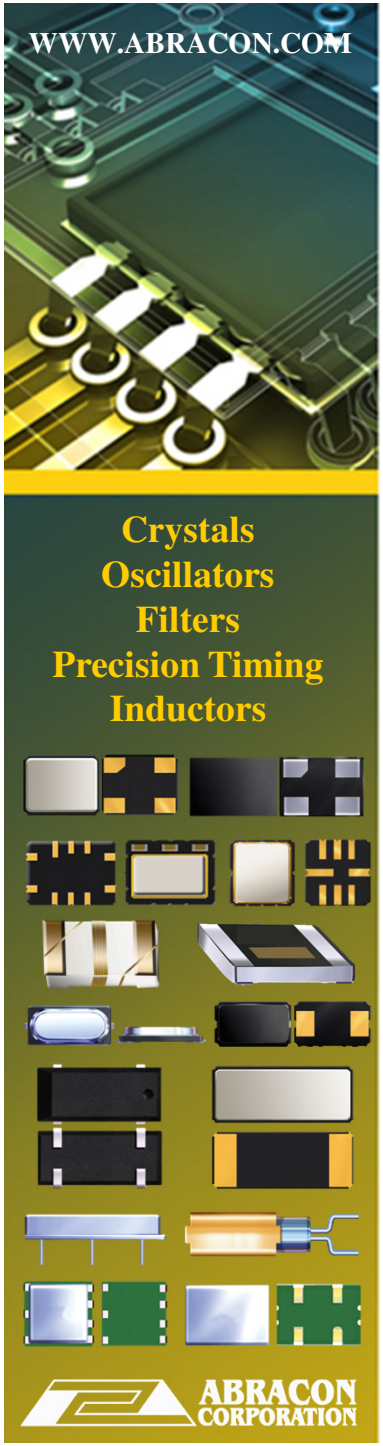
AIML -- Multilayer Ferrite Chip Inductor

Features

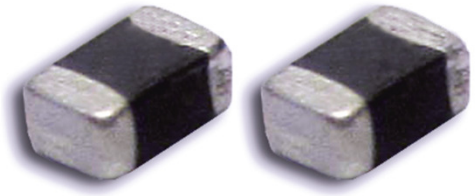
- Body is made by Ferrite material .
- **Magnetically Shielded** to eliminate cross coupling.
- **Compact size** and light weight for high density mounting on PCB.
- **Higher reliability** compared to other inductor types due to multilayer structure.

Electrical Parameters

- Standard EIA sizes: 0402, 0603, 0805, 1206
- Inductance Range: 0.047~220 µH.
- IDC Range: 1mA~300mA.
- DCR Range: 0.15~4Ω.



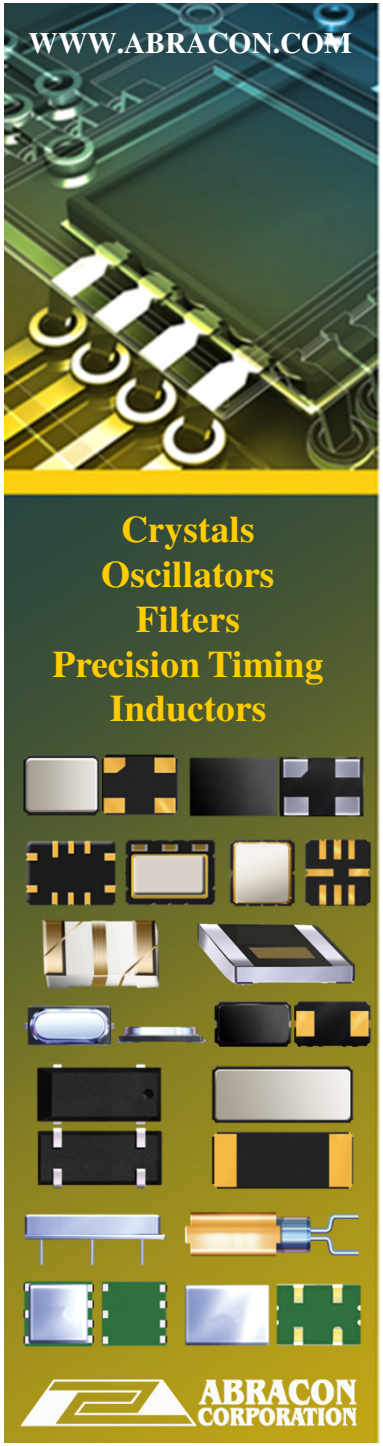
Product AIML Series Description



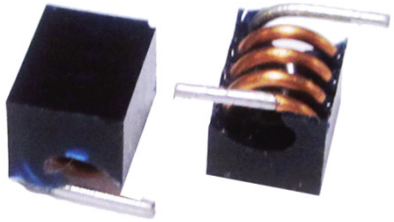
AIML -- Multilayer Ferrite Chip Inductor

Applications

- Widely used in HDTV, portable device, Computer, Modem, Printer, Disk Drive.
- Suitable for EMI reduction on DC power lines and low speed signal lines.
- Resonant circuits such as oscillator and signal generators, RF filter circuits.



Product AIAC Series Description



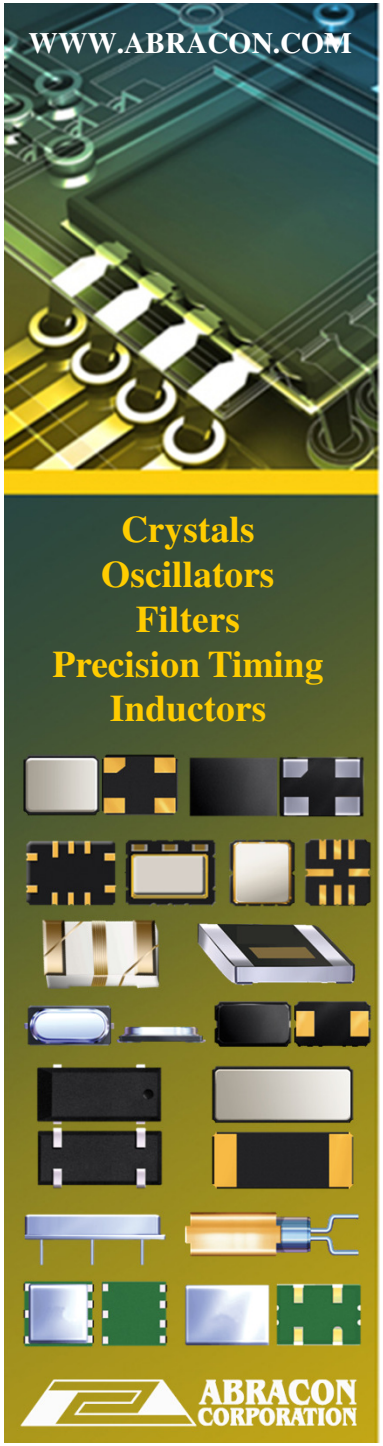
AIAC – SMT Air Coil Inductor

Features

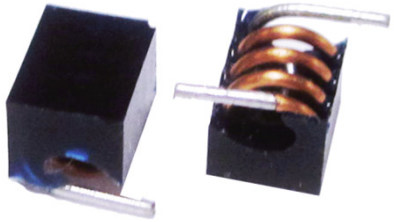
- Body is made by Air Core.
- **Exceptionally High Q and SRF** compared to other inductor type.
- Highly **frequency selective** for **RF applications**.
- High current rating and low DCR.
- Standard flat cap top suitable for automatic placement.

Electrical Parameters

- Inductor Range: 1~270 nH.
- Available Dimensions: From 2.85 x 1.80 x 2.1 mm to 9.0 x 4.4 x 4.6 mm
- **Q Range: 70~100min @ 50~300MHz.**
- **SRF range: 0.4~3.3GHz**



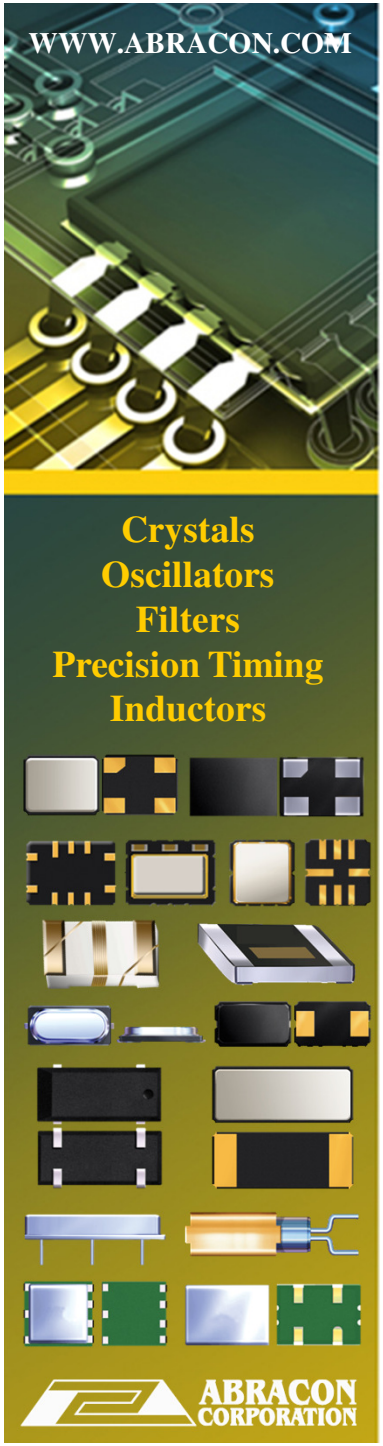
Product AIAC Series Description



AIAC – SMT Air Coil Inductor

Applications

- Widely used in Wireless Communication Equipments. Such as Cordless Phones, Remote Controller, Satellite System.
- Noise reduction in voltage supply/bias for RF power transistors.
- Broadband I/O filtering, frequency selection.
- Impedance Matching circuits.
- Improves switch isolation for RF circuit.



Product AISM Series Description

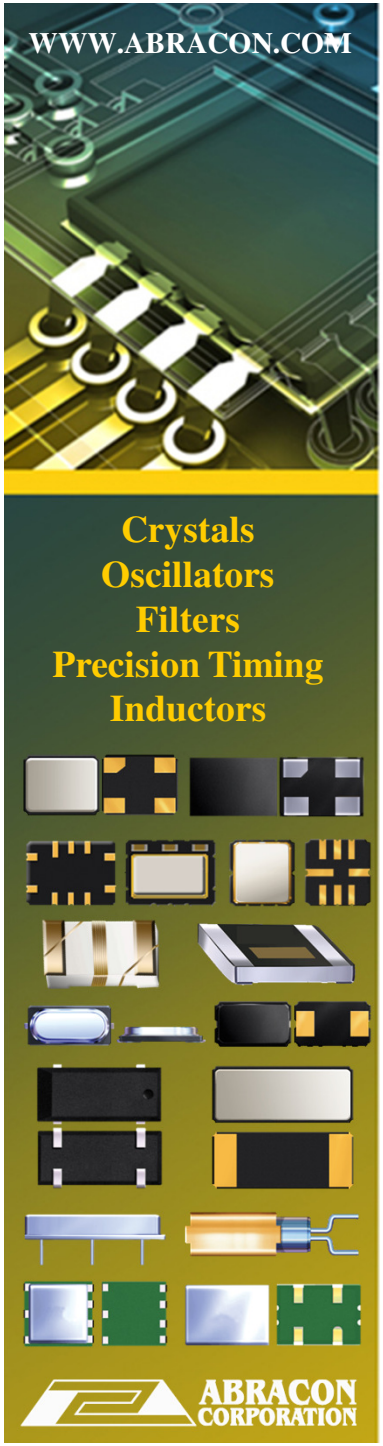
AISM – Molded Wire Wound
Chip Inductor

Features

- **High Inductance values** available for flexible needs.
- Molded construction provides **superior strength and moisture resistance**.
- **Highly reliable** under sudden **temperature change**.
- **Tight inductance tolerance** and stable inductance at high frequency.

Electrical Parameters

- Inductor Range: 0.1~1000 µH.
- Available Dimensions: From 2.5 x 2.0 x 1.8 mm to 5.8 x 5.2 x 5.2 mm
- IDC range: 25~1800mA
- DCR range: 0.03~43Ω

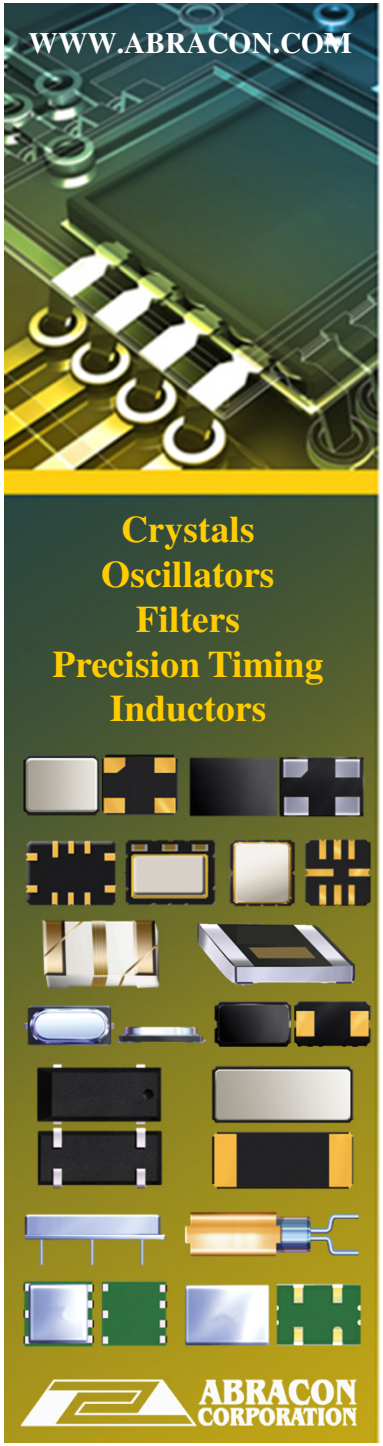


Product AISM Series Description

AISM – Molded Wire Wound
Chip Inductor

Applications

- Widely used in Camcorder, Hard Disk Drive, TV tuner, Audio/Video Equipments, mobile phones.
- Low DCR and high current make it ideal for power supply lines.



Definition of some Electrical Parameters

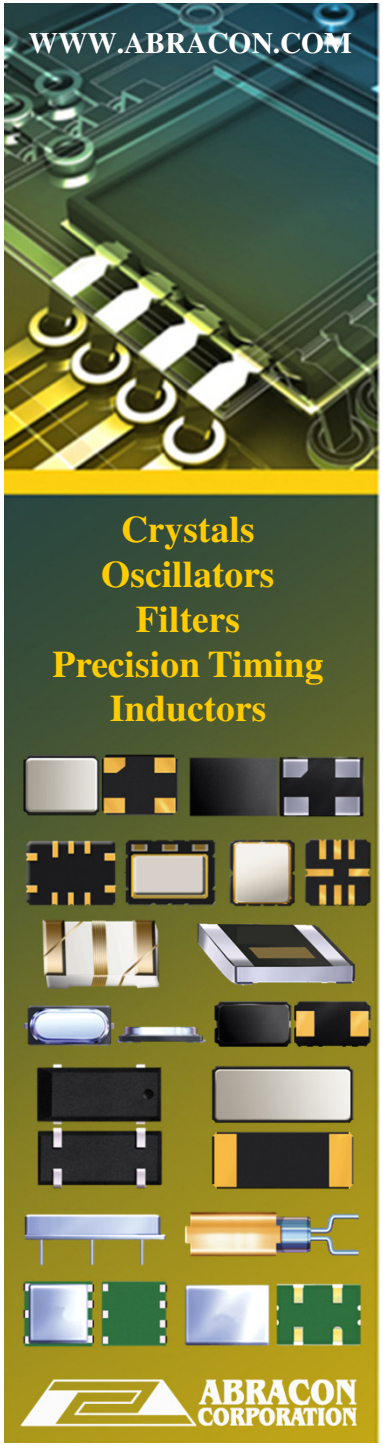
L: Inductance
The property of a circuit element which tends to oppose any change in the current flowing through it.

Q: Quality Factor
The Q value of an inductor is a measure of the relative losses in an inductor.

SRF: Self-Resonant Frequency
It is at this frequency that the inductance is equal to the capacitance and they cancel each other. The Q of the inductor is equal to zero.

DCR: DC Resistance
The resistance of the inductor measured with direct current.

IDC: Rated Current
The level of continuous DC current that can be passed through the inductor. This DC current level is based on a maximum temperature rise of the inductor at the maximum rated ambient temperature.



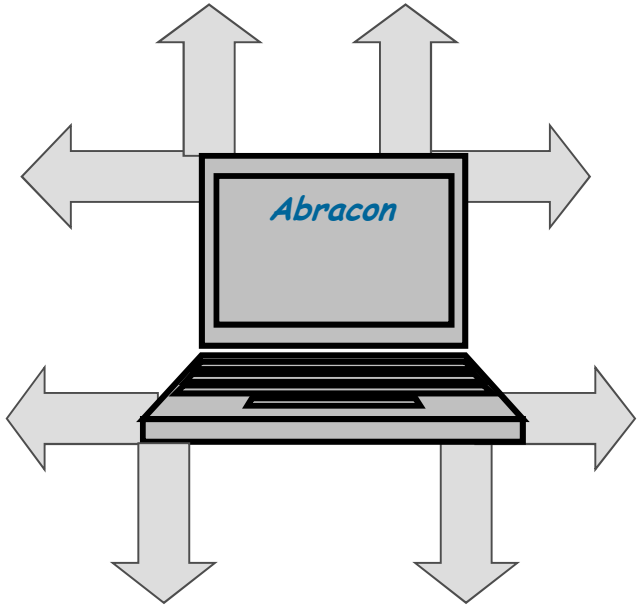
Why Choose Abracon?

High-Level Technologies

Low Profile to meet the market demand

Wide range of inductance with tight tolerance available

High current, Q factor for better performance



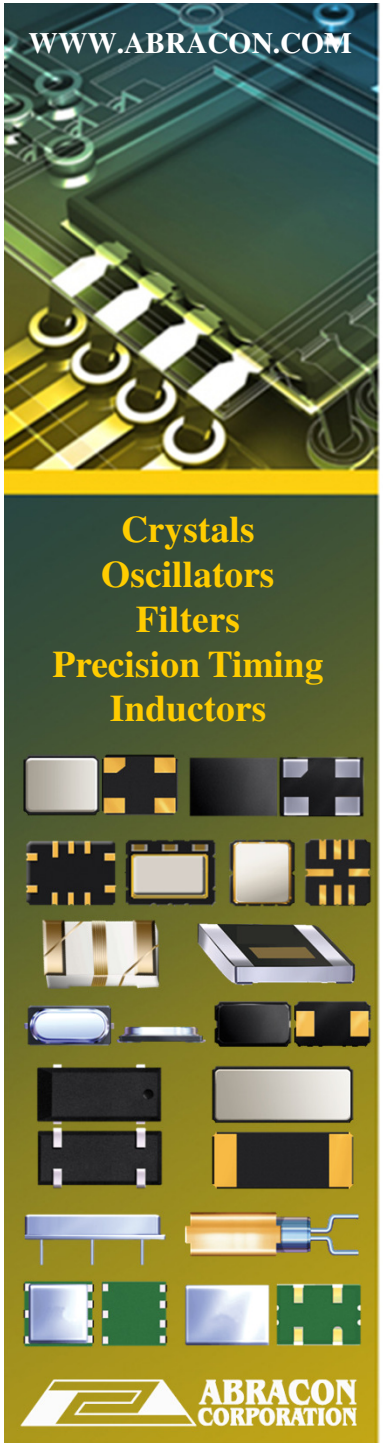
Competitive Cost

Multiple sizes are available

Available in Distribution channel.

Free Sample for evaluation

Aggressive R&D Team.
Prompt technical support.
New Product Development



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