



# Press Release

Nippon Chemi-Con Corporation  
September 30, 2014

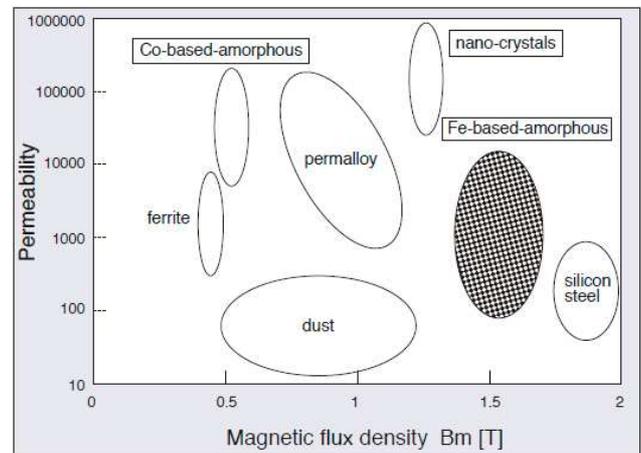
## New Design Amorphous Coil "New Non-wire Wound 2T Coil Product"

Nippon Chemi-Con has developed the "Non-wire Wound 2T Coil" that is a low-resistance amorphous coil that does not use winding wire. This product uses an amorphous core that is a magnetic material with high magnetic permeability. This product has been developed for use in automobiles and for the industrial equipment industry, both of which require high electrical currents and high reliability.

Coils that are electronic parts used to remove noise usually have a wire wound construction using coated copper wire around the core which is made of magnetic material. This is necessary to acquire the required inductance properties. If the magnetic permeability of the core that is made of magnetic material is low, it is necessary to increase the number of coated copper wire turns in order to achieve the required inductance. Because this meant that the length of coated copper wire had to be long, this was the cause of deterioration of properties due to high resistance and short-circuiting of the coated copper wire.

The market trends are towards high current (high output) products in the automobile electrical component industry and greater reliability in high temperature environments because of combined machine-electric products. Nippon Chemi-Con has been making the SM series (1T) amorphous coil that is a low-resistance non-wire wound coil, but it had low inductance that was not suitable for high current (high output) requirements.

Therefore, we worked on and achieved <1> to <3> below in order to develop the non-wire wound 2T coil that meets the market requirements for low resistance and high reliability.



- <1> Achieved a structural design in which the core (magnetic material) and lead wires (copper wires) are insulated from one another.
- <2> Established a bonding method (structure) for lead wire (copper wire) combinations.
- <3> Optimized magnetic permeability of the amorphous core.

Because we are making the amorphous cores internally, we can meet our customers' requirements for inductance performance and product size within the indicated ranges.

### Sample Availability and Mass Production Schedule

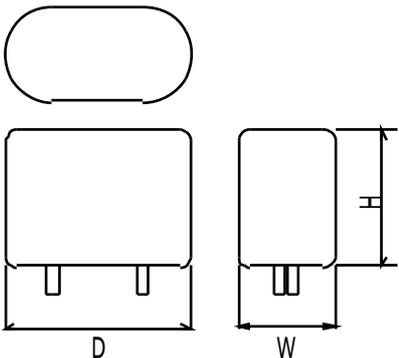
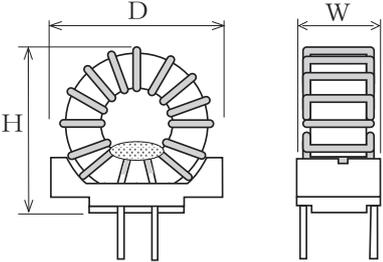
Sample availability: We plan to be able to provide mass production samples from March 2015.  
(We can already provide samples for evaluation.)

Mass production date: We shall start mass production from August 2015.

### Main Specifications

- Category temperature range: -40°C to +150°C
- Endurance: High temperature durability 2,000 hours at 150°C  
High temperature, high humidity durability 2,000 hours at 85°C, 85%RH
- Rated voltage: 40A
- Rated inductance ( $\mu\text{H}$ ): 3 $\mu\text{H}$

### Comparison between the Non-wire Wound 2T Coil and Toroidal Coil (Conventional Product)

	Non-wire Wound 2T Coil	Toroidal Coil (Conventional Product)
Rated inductance	3 $\mu\text{H}$ /40A	3 $\mu\text{H}$ /40A
Peak current	100A	100A
Core material	Ferrite amorphous	Ferrite dust
Wind specifications	Non-wire wound (Lead diameter: $\phi 2.0$ )	$\phi 1.8$ -2P-11T
DC resistance	<b><i>0.8m<math>\Omega</math></i></b> <b><i>(-39% compared with toroidal coil)</i></b>	<b>1.3m<math>\Omega</math></b>
Coil illustration		
Coil dimensions (D×W×H)	34.0mm×17.5mm×25.5mm	31.0mm×20.0mm×31.0mm
Coil volume	<b><i>15.2cm<sup>3</sup></i></b> <b><i>(-21% compared with toroidal coil)</i></b>	<b>19.2cm<sup>3</sup></b>

\*Comparisons with the toroidal coil are in-house comparisons.



NIPPON CHEMI-CON CORP.