

TOTOKU Has Developed Highly Thermal Resistance Tape Winding Wire with Thin Film and Excellent Insulation Performance

— Contributing to the miniaturization and increased efficiency of in-vehicle coils, transformers and increased working efficiency —

TOTOKU ELECTRIC CO., LTD. (HQ : Minato-ku, Tokyo, President : Hiroshi Kawaguchi) is pleased to announce that it has developed the Thin Film Insulation Wire (TFIW) thermal resistance tape winding for automobile coils and transformers featuring coating as thin as 20 μm while providing excellent insulating capacity.

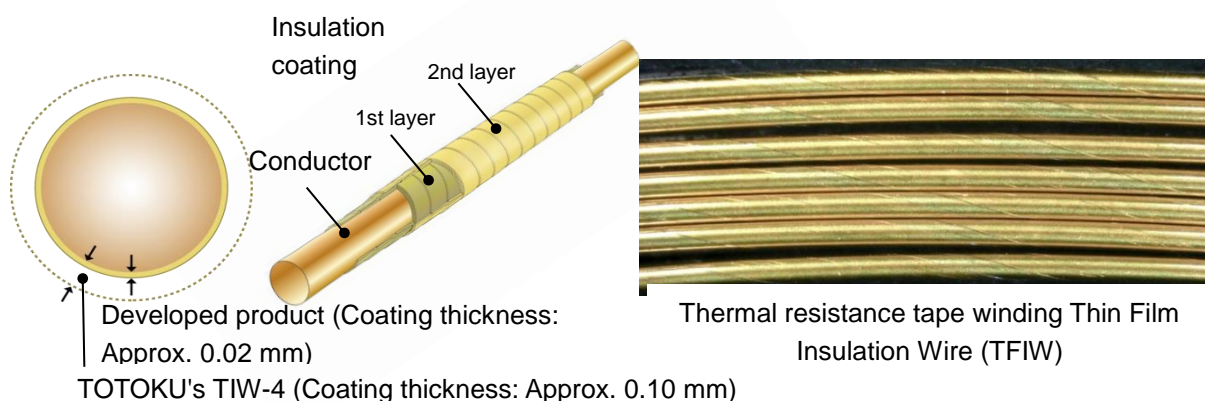
Enameled wires are generally used for automobile coils and transformers that require thermal resistance. Enameled wires are coated with a layer of insulation and annealed, so there is inevitably unevenness in the thickness and pinholes in the coating, which may cause a partial discharge during energization and thus degrade over time, carrying the risk of short circuits. Moreover, as the coating adheres closely to the conductor, removing it requires machine processing or chemical treatment when connecting to a terminal or soldering.

The new product is an insulated wire wound with a tape made of highly thermal resistant polyimide film using TOTOKU's proprietary technology. The coating can be made as thin as 20 μm , approximately one fifth the thickness of the coating on TIW-4, TOTOKU's triple insulated winding wires, with an equivalent thermal resistance, contributing to the miniaturization and increased efficiency of coils and transformers. In comparison with thermal-resistant enameled wire with the same coating thickness, there are no pinholes and the thickness is even, which enables insulation to be ensured. The new product is characterized by its excellent electrical properties. As the conductor and film are not bonded together, the coating can be removed easily, contributing to increased working efficiency.

Boasting a thin coating with high insulating capacity and thermal resistance, TFIW is an optimal product for the coils and transformers used in automobile motors, inverters and converters.

Use Coils and transformers used in in-vehicle motors, inverters and converters

Features (1) Insulation coating thickness: 0.02 mm (No pinholes, even thickness)
 (2) Electrical properties: Insulator breakdown voltage: 5 kV, Partial discharge inception voltage: 450 V
 (3) Thermal resistance: 210 $^{\circ}\text{C}$, 40,000 hours
 (4) Workability: Insulation is removable, making soldering easy
 (5) Diameter of applicable conductor: 0.6mm–1.2mm



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