

Application

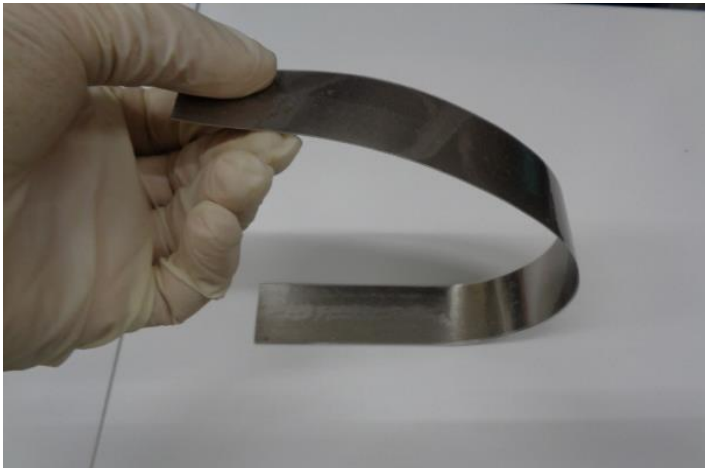
Magnetic shield yoke sheet for wireless charging system in mobile phones, vehicles, etc.

Feature

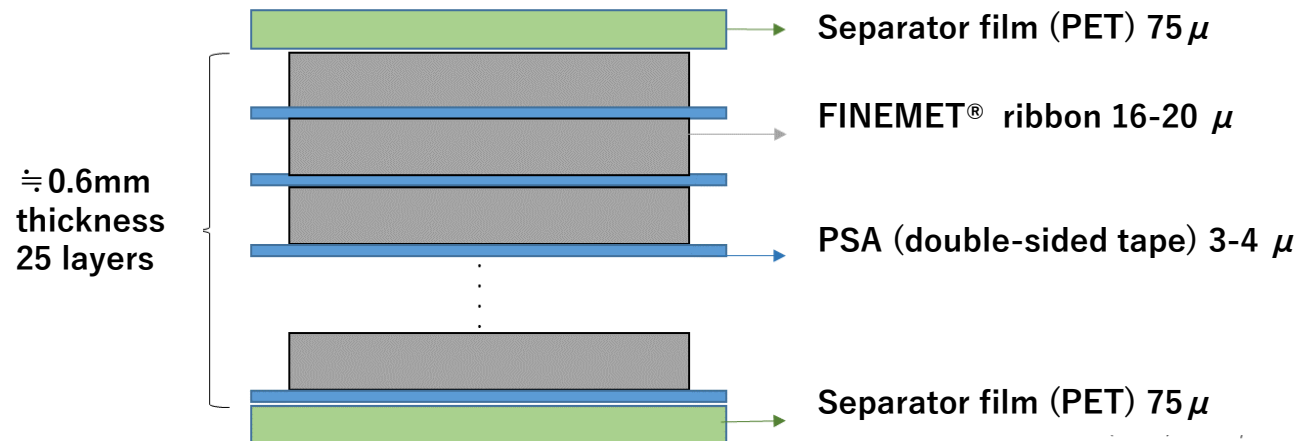
- To improve charging efficiency, the Q value of the conventional MS series has been significantly improved, using the following proprietary technologies.
 - The Q value in the longitudinal direction of the ribbon is improved by applying tension in the longitudinal direction of the ribbon during heat treatment to give it anisotropy.
 - The panel structure has arranged radially so that the longitudinal direction of the ribbons and the direction of the magnetic lines of force generated by the coils are aligned, improving the Q value.
- Achieved high mechanical reliability with excellent flexibility and impact resistance.
- Achieved thinner and lighter sheet with the high saturation magnetic flux density of our FINEMET® sheet(1.23T).

Structure

Photograph of our sheet

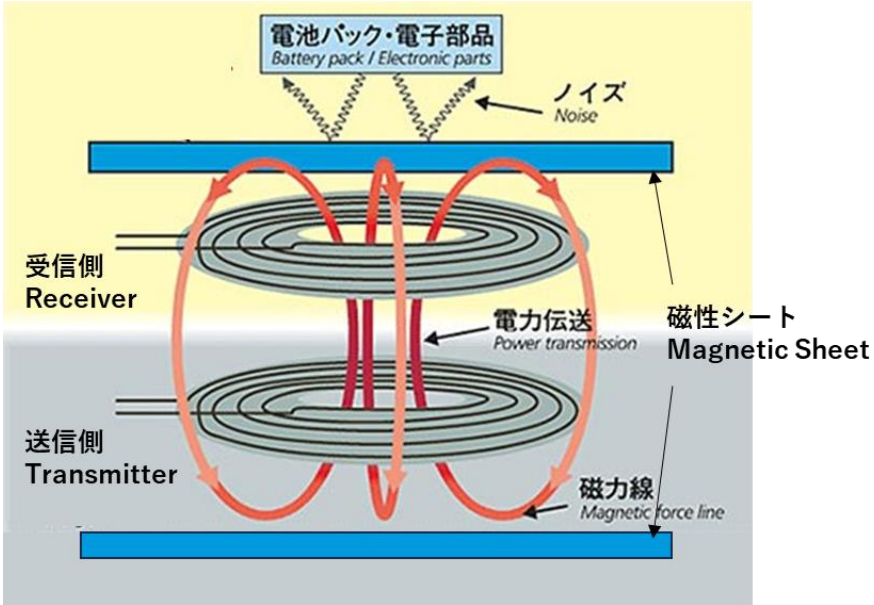


Sheet configuration (example)



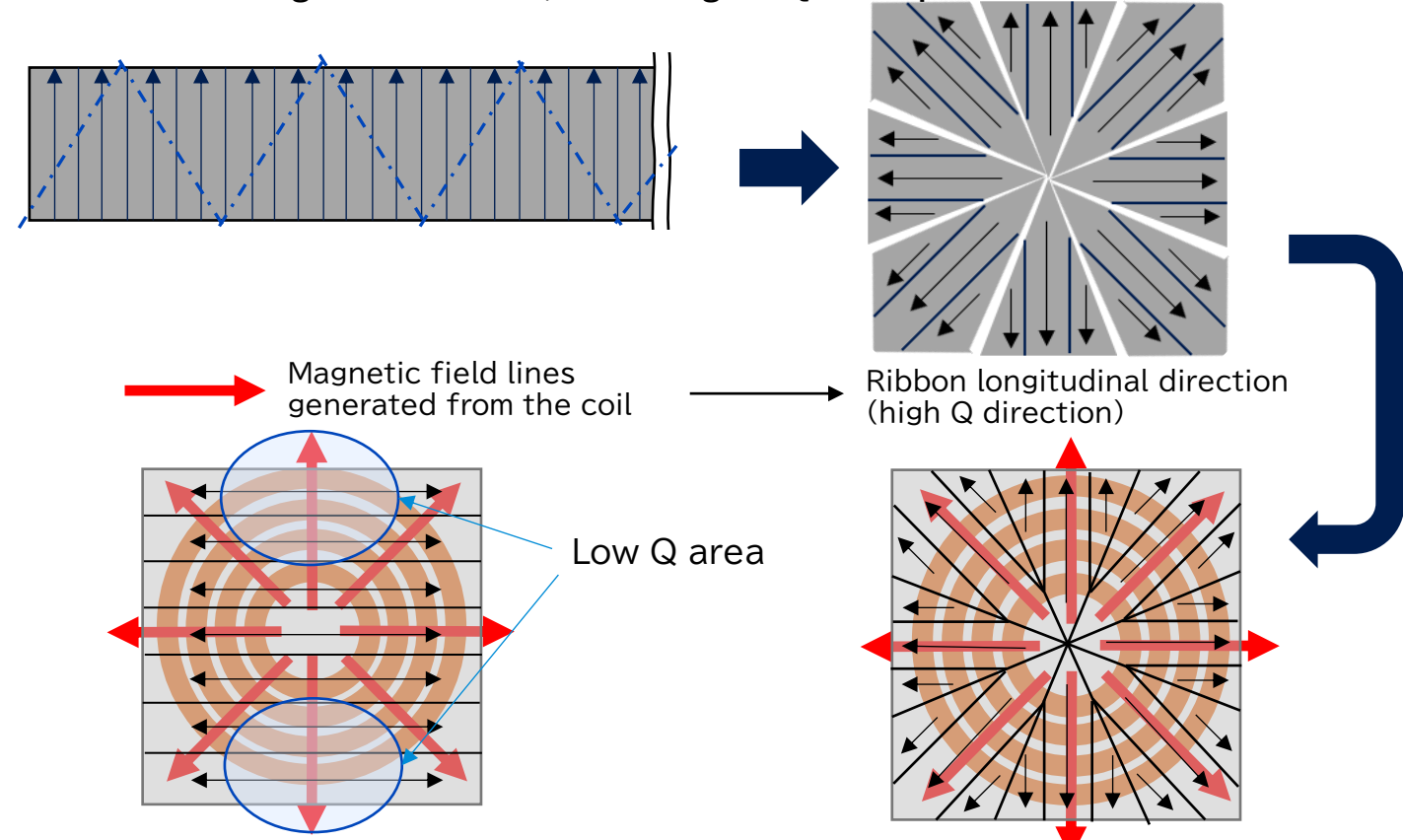
Note: Sheet size and number of layers differs by the required customer specification.

Schematic diagram of a wireless charging system



Magnetic sheet panel schematic diagram

During the heat treatment, the ribbon is made anisotropic in the longitudinal direction, giving it a high Q value in the longitudinal direction, and then stacked in parallel and cut. The ribbons are arranged radially so that the longitudinal direction coincides with the direction of the magnetic field lines, increasing the Q of the panel.

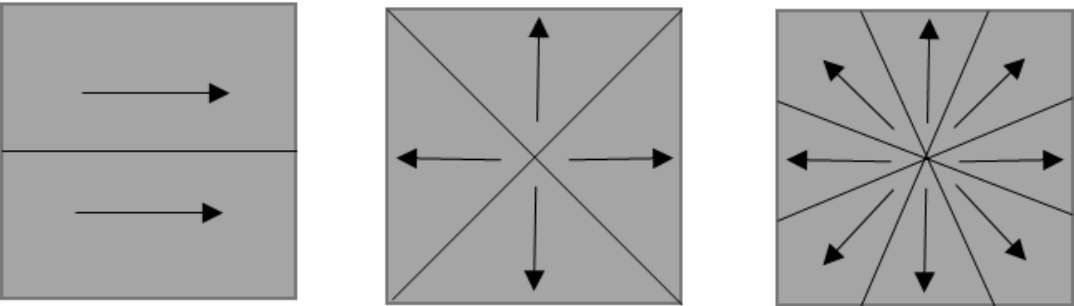


The angle between the magnetic field line direction and the ribbon longitudinal direction becomes large, creating an area where Q drops.

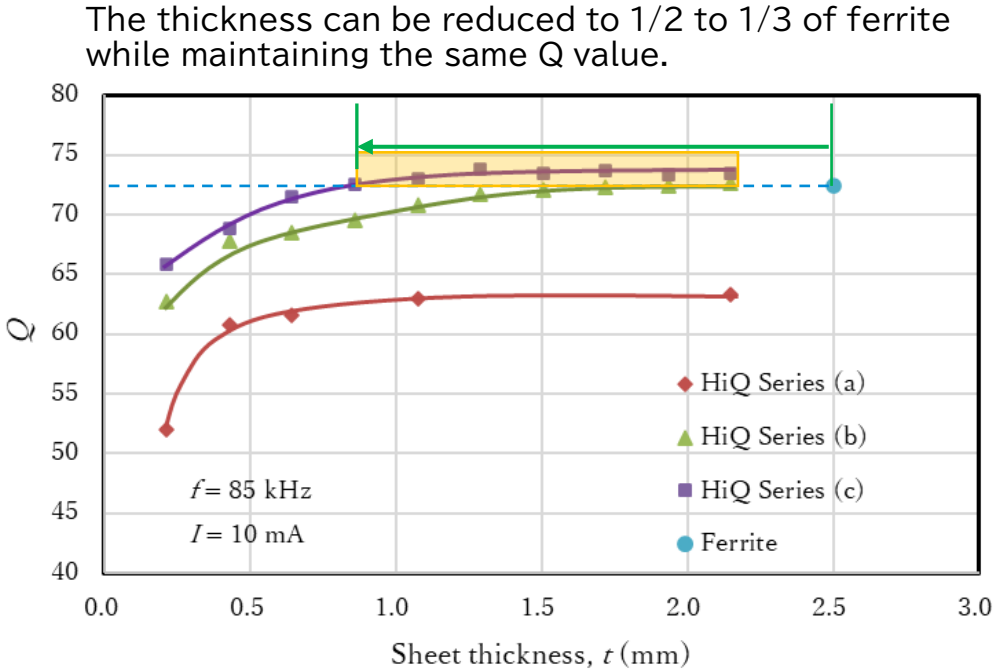
By aligning the magnetic field line direction with the ribbon longitudinal direction, the characteristics of the high-Q sheet can be effectively utilized to increase the Q of the panel.

Characteristic (reference*)

Sample shape (panel structure)

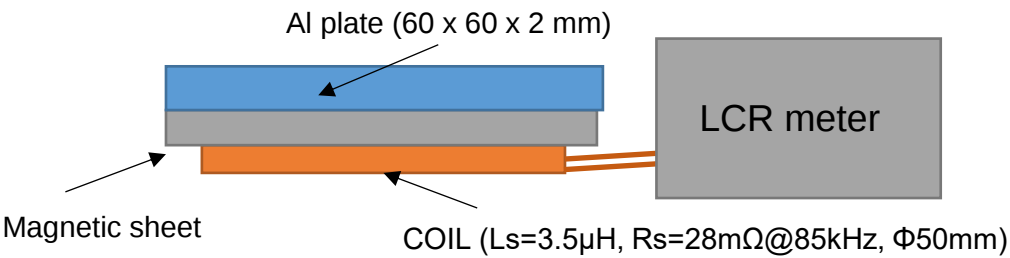


(a) 2 parallel pieces (b) Radial 4 pieces (c) Radial 8 pieces



How measure COIL (Ls, Rs)

Test condition: f=85kHz, I=10mA



Item	permeability	Ls (μH)	Rs (mΩ)	Q
Coil	-	1.0	71.0	7.7
MS-HiQ series	1100	5.6	48.0	62.6
		5.2	40.1	68.5
		5.2	38.7	71.5
MS series	13000	5.7	61.8	49.7

* Magnetic sheet size 60 x 60 mm x 15 layers

*Since this product is under development, the data may be subject to revision.