

# High frequency silicon steel sheet inverter





## Overview

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Are high silicon electrical steel sheets suitable for high frequency reactors?

This paper examines the magnetic properties of JFE Steel's high silicon electrical steel sheets (Super Core series) as outstanding materials for high frequency reactors, which are important components for realizing energy saving in power equipment, and describes reactor performance when these materials were used in the reactor cores. 2.

What type of steel is suitable for high frequency applications?

JFE Steel has developed two types of high silicon steel sheets suitable for high frequency applications, JFE Super Core "JNEX-Core" and "JNHF-Core."

Why is silicon added to electrical steel sheets?

Silicon is added to electrical steel sheets in order to increase their resistivity. In particular, because the eddy current loss in iron cores rises rapidly as the frequency increases, Si addition is extremely effective in improving the high frequency magnetic properties of electrical steel sheets.

Which steel is used for high frequency transformers?

The Fe-Si alloy sheets included the GT-series of Nikkin Denji and JFE SUPERCORE [ 20, 21 ], which are commercially available steel for high frequency devices. We compared the magnetic flux density ( $B_8$ ) and core loss ( $P_{0.5/20,000}$ ), which are magnetic properties that are widely considered for high frequency transformer design.



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Recent Progress of High-Silicon Electrical Steel Sheets in ...

Apr 3, 2024 · 1. Introduction In core materials of electrical equipment, low iron loss for high efficiency and high saturation magnetization to enable downsizing are generally required. ...

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Silicon steel sheets and cores in high and low frequency ...

Top Benefits of Using Frequency Inverters in Energy Management Introduction to Frequency Inverters: A Game-Changer in Energy Management In today's rapidly evolving industrial ...

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JFE Steel JNRF High frequency low iron loss ...

Sep 19, 2025 · JFE Steel Corporation announced today its recently developed JNRF(TM) silicon-gradient steel sheet for use in high-speed ...

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JFE Steel JNRF High frequency low iron loss and high ...

Sep 19, 2025 · JFE Steel Corporation announced today its recently developed JNRF(TM) silicon-gradient steel sheet for use in high-speed motors, which the company produces using ...

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High-Performance Silicon Steel Sheets: Advanced Magnetic ...

Premium silicon steel sheets featuring superior magnetic properties, advanced thermal management, and sustainable manufacturing. Ideal for transformers, motors, and high ...

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JFE Technical Report No.6

Apr 3, 2019 · This paper examines the magnetic properties of JFE Steel's high silicon electrical steel sheets (Super Core series) as outstanding materials for high frequency reactors, which ...

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JFE Super Core 10JNEX900 10JNHF600 ...

Nov 24, 2025 · In order to meet new demands, this technology has continued to be developed, leading to the commercial production of gradient high ...

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Oriented Silicon Steel in High-Frequency Applications

Inductive Components in Power Electronics: High-frequency inductors and chokes used in power electronics circuits, including converters and inverters, could benefit from oriented silicon steel ...

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Silicon steel

Feb 26, 2025 · Compared to high-frequency and high-power application scenarios, string inverters are difficult to meet the frequency requirements with silicon steel sheets. Metal soft magnetic ...

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JFE Super Core 10JNEX900 10JNHF600 08JNHF500 ...

Nov 24, 2025 · In order to meet new demands, this technology has continued to be developed,



leading to the commercial production of gradient high-silicon steel sheets with superior high ...

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Ultra-thin Fe-Si alloy sheet with excellent high frequency ...

Feb 1, 2023 · The Fe-Si alloy sheets included the GT-series of Nikkin Denji and JFE SUPERCORE [20, 21], which are commercially available steel for high frequency devices. We ...

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New Silicon Steel Sheet 10kv Three Phase High Voltage Transformer Inverter

Oct 21, 2025 · 1. The transformer core is made of imported high quality cold rolled silicon steel sheet stacked together, which greatly reduces the no-load loss and no-load current, and the ...

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