

Title (en)
UNIDIRECTIONAL MAGNETIC STEEL SHEET EXCELLENT IN IRON LOSS CHARACTERISTIC

Title (de)
UNIDIREKTIONALES MAGNETISCHES STAHLBLECH MIT HERVORRAGENDER EISENVERLUSTCHARAKTERISTIK

Title (fr)
TÔLE MAGNÉTIQUE UNIDIRECTIONNELLE EN ACIER PRÉSENTANT D'EXCELLENTE CARACTÉRISTIQUES DE PERTES DANS LE FER

Publication
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Application
EP 07830241 A 20071016

Priority
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• JP 2006287709 A 20061023

Abstract (en)
[origin: US2009272464A1] The present invention provides grain-oriented electrical sheet more superior in watt loss compared with the past by dividing the watt loss of grain-oriented electrical sheet introducing strain by firing of a laser beam etc. into hysteresis loss and eddy current loss and, in particular from the viewpoint of the eddy current loss, quantitatively suitably controlling the distribution of the strain and residual stress in the sheet thickness direction, that is, grain-oriented electrical sheet obtained by firing a laser beam etc. to introduce lines of strain substantially perpendicular to the rolling direction uniformly in a sheet width direction and cyclically in the rolling direction for magnetic domain control, characterized in that in the two-dimensional distribution of a rolling direction compressive residual stress occurring near one location of the introduction of strain in a cross-section perpendicular to the sheet width direction, the value of the rolling direction compressive residual stress integrated in the region of the cross-section where there is compressive residual stress is within a predetermined range.

IPC 8 full level
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Citation (search report)
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• [X] EP 1607487 A1 20051221 - NIPPON STEEL CORP [JP]
• [X] SATISH V PONNALURI ET AL: "Core loss reduction in grain-oriented silicon steels by excimer laser scribing", JOURNAL OF MATERIALS PROCESSING TECHNOLOGY, vol. 112, no. 2-3, 1 May 2001 (2001-05-01), pages 199 - 204, XP055029815, ISSN: 0924-0136, DOI: 10.1016/S0924-0136(01)00573-8
• See references of WO 2008050700A1

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JP 5613972 B2 20141029; KR 20090064419 A 20090618; PL 2083091 T3 20210614; RU 2400542 C1 20100927; TW 200831676 A 20080801;
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