

Title (en)

Surface mount electronic component with a grooved core and a method for making

Title (de)

Oberflächenmontiertes elektronisches Bauelement mit gerilltem Kern und Verfahren zu seiner Herstellung

Title (fr)

Composant électronique à montage en surface avec noyau rainuré et procédé pour sa fabrication

Publication

EP 0747913 A1 19961211 (EN)

Application

EP 96108606 A 19960530

Priority

US 46442195 A 19950605

Abstract (en)

A method for fabricating electronic components such as transformers and inductors having wire windings formed from a metal sheet rather than from manual winding of wire. Grooves (12 and 17) are formed in the surface of a core (11) during a molding process. The core (11) is then covered with an insulating layer and a metal film. Metal windings (13 and 18) are carved with one of several methods that rely on parallel grooves (12 and 17) to isolate and pattern each continuous winding. An additional embodiment describes the use of a second insulating layer (14) and a second metal film (16) to modify a component such that the component operates in re-entrant mode. This additional embodiment widens the operational bandwidth of any electronic component with at least two metal windings such as a transformer or coupled inductors. <IMAGE>

IPC 1-7

H01F 17/06; **H01F 27/36**

IPC 8 full level

H01F 17/00 (2006.01); **H01F 17/06** (2006.01); **H01F 27/36** (2006.01); **H01F 41/08** (2006.01)

CPC (source: EP US)

H01F 17/0033 (2013.01 - EP); **H01F 17/062** (2013.01 - EP); **H01F 27/36** (2013.01 - EP); **H01F 27/363** (2020.08 - EP US); **H01F 2017/004** (2013.01 - EP)

Citation (search report)

- [X] US 3319207 A 19670509 - JESSE DAVIS
- [A] GB 1243495 A 19710818 - INT STANDARD ELECTRIC CORP [US]
- [A] US 4748430 A 19880531 - GUAIS NOEL [FR]
- [A] DE 2424715 A1 19751204 - MESSERSCHMITT BOELKOW BLOHM
- [X] PATENT ABSTRACTS OF JAPAN vol. 007, no. 170 (E - 189) 27 July 1983 (1983-07-27)
- [A] CARR J J: "BUILDING YOUR OWN TOROID CORE INDUCTORS AND RF TRANSFORMERS", ELEKTOR ELECTRONICS, vol. 20, no. 219, 1 February 1994 (1994-02-01), pages 52 - 58, XP000430260

Cited by

EP2105937A1; JP2016025150A; EP3754677A1; FR3097366A1; WO03005579A1

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