

Title (en)
ELECTRICAL VEHICLE HEATING DEVICE

Title (de)
ELEKTRISCHE FAHRZEUG-HEIZVORRICHTUNG

Title (fr)
DISPOSITIF ÉLECTRIQUE DE CHAUFFAGE DE VÉHICULE

Publication
EP 2609376 A2 20130703 (DE)

Application
EP 11767612 A 20110802

Priority
• DE 102010037132 A 20100824
• DE 2011075184 W 20110802

Abstract (en)
[origin: WO2012025111A2] The invention relates to an electrical vehicle heating device (1) comprising: at least one substantially plate-shaped ceramic PTC heating element (2), which has a first main surface (2a) and a second main surface (2b) opposite the first main surface; a metal first contacting layer (4), which electrically contacts the first main surface (2a) substantially over the full area; a metal second contacting layer (3), which electrically contacts the second main surface (2b) substantially over the full area; an electrically insulating, ceramic first insulating structure (5), which covers a side of the first contacting layer (4) facing away from the first main surface (2a); and an electrically insulating, ceramic second insulating structure (6), which covers a side of the second contacting layer (3) facing away from the second main surface (2b). The PTC heating element (2), the first contacting layer (4), the second contacting layer (3), the first insulating structure (5), and the second insulating structure (6) are connected to each other in a bonded manner.

IPC 8 full level
F24H 3/04 (2006.01); **B60H 1/22** (2006.01); **H05B 3/14** (2006.01)

CPC (source: EP US)
B60H 1/2215 (2013.01 - EP US); **F24H 3/0405** (2013.01 - EP US); **F24H 3/0429** (2013.01 - EP); **F24H 9/1872** (2013.01 - EP); **H05B 3/14** (2013.01 - EP); **H05B 3/22** (2013.01 - EP); **H05B 2203/023** (2013.01 - EP)

Citation (search report)
See references of WO 2012025111A2

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
DE 102010037132 A1 20120301; CN 103228998 A 20130731; DE 202011110647 U1 20150702; EP 2609376 A2 20130703; WO 2012025111 A2 20120301; WO 2012025111 A3 20120426

DOCDB simple family (application)
DE 102010037132 A 20110802; CN 201180040965 A 20110802; DE 2011075184 W 20110802; DE 202011110647 U 20110802; EP 11767612 A 20110802