

Title (en)
PLANAR HEATING ELEMENT

Title (de)
FLÄCHIGES HEIZELEMENT

Title (fr)
ÉLÉMENT CHAUFFANT PLAN

Publication
EP 4033856 A1 20220727 (EN)

Application
EP 22151874 A 20220117

Priority
JP 2021010499 A 20210126

Abstract (en)
There is provided a technique that can radiate heat uniformly and efficiently from the front surface of a planar heating element (10) while suppressing the dissipation of heat from the back surface, the planar heating element (10) including a thin-film heating layer (11) arranged in a pattern of a thin-film line. A planar heating element (10) includes a thin-film heating layer 11 configured to provide a pattern of a line 11a, a front-surface member 12 serving as a surface that radiates heat from the thin-film heating layer 11, and the back-surface member 13 located across the thin-film heating layer 11 from the heat-radiating surface, in which expression (1) below holds: $0.006 < R1/R2 < 0.7$ where R1 is thermal resistance of the front-surface member 12, and R2 is thermal resistance of the back-surface member 13.

IPC 8 full level
H05B 3/28 (2006.01); **H05B 3/34** (2006.01)

CPC (source: EP)
H05B 3/286 (2013.01); **H05B 3/347** (2013.01); **H05B 2203/003** (2013.01); **H05B 2203/013** (2013.01)

Citation (applicant)
• JP 2010091185 A 20100422 - PANASONIC CORP
• WO 2017130541 A1 20170803 - DENSO CORP [JP]

Citation (search report)
• [XY] WO 2020022521 A1 20200130 - NIFCO INC [JP]
• [XY] JP 2010052710 A 20100311 - PANASONIC CORP
• [Y] US 2016144690 A1 20160526 - WITTKOWSKI THOMAS [DE], et al
• [Y] JP 2010169303 A 20100805 - PANASONIC CORP

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 4033856 A1 20220727; JP 2022114269 A 20220805

DOCDB simple family (application)
EP 22151874 A 20220117; JP 2021010499 A 20210126