

Title (en)  
TRANSFORMER FOR VEHICLES

Title (de)  
TRANSFORMATOR FÜR FAHRZEUGE

Title (fr)  
TRANSFORMATEUR POUR VÉHICULES

Publication  
**EP 3511961 A4 20190904 (EN)**

Application  
**EP 16915745 A 20160912**

Priority  
JP 2016076776 W 20160912

Abstract (en)  
[origin: EP3511961A1] A vehicular transformer is mounted on the roof of a vehicle. The vehicular transformer includes a tank (110) configured to house a transformer body and filled with refrigerant, a plurality of cooling pipes (120) arranged above the tank (110) and configured to cool the refrigerant by heat exchange between the refrigerant and the outside air, and a conservator (140) arranged laterally to the tank (110) in alignment with the tank (110) along a travelling direction (1) of the vehicle and configured to be in communication with the tank (110).

IPC 8 full level  
**H01F 27/14** (2006.01); **H01F 27/02** (2006.01); **H01F 27/08** (2006.01); **H01F 27/12** (2006.01)

CPC (source: CN EP)  
**H01F 27/025** (2013.01 - EP); **H01F 27/06** (2013.01 - CN); **H01F 27/085** (2013.01 - CN); **H01F 27/12** (2013.01 - CN);  
**H01F 27/14** (2013.01 - CN EP)

Citation (search report)

- [Y] JP 2007273777 A 20071018 - TOSHIBA CORP, et al
- [Y] CN 204229989 U 20150325 - ZHANG WEIQI
- [Y] CN 201773670 U 20110323 - DALIAN LOCOMOTIVE & ROLLING ST
- [Y] JP S5660765 A 19810525 - MITSUBISHI ELECTRIC CORP
- [Y] JP 2013178018 A 20130909 - SUMITOMO PRECISION PROD CO
- [A] JP 2006240614 A 20060914 - MITSUBISHI ELECTRIC CORP
- See references of WO 2018047327A1

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 3511961 A1 20190717; EP 3511961 A4 20190904; EP 3511961 B1 20211103**; CN 109643601 A 20190416; CN 115424825 A 20221202; JP 6143983 B1 20170607; JP WO2018047327 A1 20180906; WO 2018047327 A1 20180315

DOCDB simple family (application)  
**EP 16915745 A 20160912**; CN 201680088882 A 20160912; CN 202211197475 A 20160912; JP 2016076776 W 20160912; JP 2016574291 A 20160912