

Title (en)

HIGH QUALITY FACTOR FILTER IMPLEMENTED IN WAFER LEVEL PACKAGING (WLP) INTEGRATED DEVICE

Title (de)

IN EINER INTEGRIERTEN VORRICHTUNG ZUM WAFER LEVEL PACKAGING (WLP) IMPLEMENTIERTER FILTER MIT HOHEM QUALITÄTSFAKTOR

Title (fr)

FILTRE DE FACTEUR HAUTE QUALITÉ MIS EN UVRE DANS UN DISPOSITIF INTÉGRÉ D'ENCAPSULATION SUR TRANCHE (WLP)

Publication

**EP 3164888 A1 20170510 (EN)**

Application

**EP 15738228 A 20150701**

Priority

- US 201414323907 A 20140703
- US 2015038895 W 20150701

Abstract (en)

[origin: WO2016004245A1] Some implementations provide an integrated device that includes a capacitor and an inductor. The inductor is electrically coupled to the capacitor. The inductor and the capacitor are configured to operate as a filter for an electrical signal in the integrated device. The inductor includes a first metal layer of a printed circuit board (PCB), a set of solder balls coupled to the PCB, and a second metal layer in a die. In some implementations, the capacitor is located in the die. In some implementations, the capacitor is a surface mounted passive device on the PCB. In some implementations, the first metal layer is a trace on the PCB. In some implementations, the inductor includes a third metal layer in the die. In some implementations, the second metal layer is an under bump metallization (UBM) layer of the die, and the third metal is a redistribution layer of the die.

IPC 8 full level

**H01L 23/64** (2006.01); **H01F 17/00** (2006.01); **H01L 23/522** (2006.01); **H05K 1/16** (2006.01)

CPC (source: CN EP)

**H01F 17/0013** (2013.01 - EP); **H01L 23/5223** (2013.01 - CN EP); **H01L 23/5227** (2013.01 - CN EP); **H01L 23/645** (2013.01 - CN EP); **H01F 2017/0086** (2013.01 - EP); **H01L 23/3128** (2013.01 - EP); **H01L 23/525** (2013.01 - EP); **H01L 2224/0401** (2013.01 - EP); **H01L 2224/05008** (2013.01 - EP); **H01L 2224/05147** (2013.01 - EP); **H01L 2224/05569** (2013.01 - EP); **H01L 2224/05572** (2013.01 - EP); **H01L 2224/131** (2013.01 - EP); **H01L 2224/13147** (2013.01 - EP); **H01L 2224/16145** (2013.01 - EP); **H01L 2224/16227** (2013.01 - EP); **H01L 2224/32145** (2013.01 - EP); **H01L 2224/32225** (2013.01 - EP); **H01L 2225/1023** (2013.01 - EP); **H01L 2225/1058** (2013.01 - EP); **H01L 2924/1431** (2013.01 - EP); **H01L 2924/1433** (2013.01 - EP); **H01L 2924/1434** (2013.01 - EP); **H01L 2924/15311** (2013.01 - EP); **H01L 2924/15331** (2013.01 - EP); **H01L 2924/19015** (2013.01 - EP); **H01L 2924/19041** (2013.01 - EP); **H01L 2924/19042** (2013.01 - EP); **H01L 2924/19105** (2013.01 - EP); **H01L 2924/30107** (2013.01 - EP); **H05K 1/111** (2013.01 - EP); **H05K 1/165** (2013.01 - EP); **H05K 2201/10674** (2013.01 - EP)

Citation (search report)

See references of WO 2016004245A1

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)

**WO 2016004245 A1 20160107**; CN 106663671 A 20170510; CN 106663671 B 20210122; EP 3164888 A1 20170510

DOCDB simple family (application)

**US 2015038895 W 20150701**; CN 201580035741 A 20150701; EP 15738228 A 20150701