

Title (en)

A PROGRESSIVE START-UP CHARGE PUMP AND METHOD THEREFOR

Title (de)

LADUNGSPUMPE MIT PROGRESSIVEM ANLAUF UND VERFAHREN DAFÜR

Title (fr)

POMPE DE CHARGE A DEMARRAGE PROGRESSIF ET PROCEDE CORRESPONDANT

Publication

**EP 0925635 A4 20000112 (EN)**

Application

**EP 97949816 A 19971129**

Priority

- US 9723066 W 19971129
- US 89134397 A 19970710

Abstract (en)

[origin: WO9903192A1] A progressive start-up charge pump (10) that eliminates the start-up problems of p-channel charge pump stages (12) by starting the charge pump (10) one stage (12) at a time. The charge pump (10) has a plurality of charge pump stages (12) wherein each of the plurality of charge pump stages (12) are coupled to a successive charge pump stage (12) in a cascade mode. An enabling circuit (14) is coupled to each of the plurality of charge pump stages (12) for individually starting each of the plurality of charge pump stages (12) one charge pump stage (12) at a time starting with a last charge pump stage (12) and successively turning on a directly previous charge pump stage (12) until the first charge pump stage (12) is started. This will ensure that the voltage output node (12B) is at a greater potential than the voltage input node (12A) for each of the plurality of charge pump stages (12) during start-up.

IPC 1-7

**H02M 3/18**; **G05F 3/02**; **H02M 3/07**

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**G05F 3/02** (2006.01); **H02M 1/00** (2006.01); **H02M 1/36** (2007.01); **H02M 3/07** (2006.01)

CPC (source: EP KR)

**H02M 1/36** (2013.01 - EP); **H02M 3/073** (2013.01 - EP); **H02M 3/18** (2013.01 - KR); **H02M 1/007** (2021.05 - EP)

Citation (search report)

- No further relevant documents disclosed
- See references of WO 9903192A1

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