

Title (en)
MOSFET WITH INTEGRATED FIELD EFFECT RECTIFIER

Title (de)
MOSFET MIT INTEGRIERTEM FELDEFFEKTTGLEICHRICHTER

Title (fr)
MOSFET A REDRESSEUR A EFFET DE CHAMP INTEGRE

Publication
EP 2274770 A4 20121226 (EN)

Application
EP 09739614 A 20090428

Priority
• US 2009041996 W 20090428
• US 4833608 P 20080428

Abstract (en)
[origin: WO2009134812A1] A modified MOSFET structure comprises an integrated field effect rectifier connected between the source and drain of the MOSFET to shunt current during switching of the MOSFET. The integrated FER provides faster switching of the MOSFET due to the absence of injected carriers during switching while also decreasing the level of EMI relative to discrete solutions. The integrated structure of the MOSFET and FER can be fabricated using N-, multi-epitaxial and supertrench technologies, including 0.25µm technology. Self-aligned processing can be used.

IPC 8 full level
H01L 29/78 (2006.01)

CPC (source: EP US)
H01L 29/7803 (2013.01 - EP); **H01L 29/7805** (2013.01 - EP); **H01L 29/7813** (2013.01 - EP US)

Citation (search report)
• [X] EP 0807979 A2 19971119 - SILICONIX INC [US]
• [X] US 6281547 B1 20010828 - SO KOON CHONG [US], et al
• [A] US 2002177324 A1 20021128 - METZLER RICHARD A [US]
• See references of WO 2009134812A1

Citation (examination)
US 2008073707 A1 20080327 - DARWISH MOHAMED N [US]

Designated contracting state (EPC)
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 SE SI SK TR

DOCDB simple family (publication)
WO 2009134812 A1 20091105; CN 102037548 A 20110427; CN 102037548 B 20140423; EP 2274770 A1 20110119; EP 2274770 A4 20121226

DOCDB simple family (application)
US 2009041996 W 20090428; CN 200980115255 A 20090428; EP 09739614 A 20090428