



ERICSSON

# HISTORY AND TIMELINE

Ericsson Power Modules

# COMPANY EVOLUTION



1977

Ericsson Power Division begins research into high frequency switching DC/DC converters.

1981

Power Modules operation established within Ericsson.

1983

World's first high frequency switching DC/DC power modules launched.

1988

Development of first true component power supply starts.

1993

First miniaturized DC/DC converter launched.

1996

Joint venture established in Shanghai, China – Shanghai Ericsson Simtec Electronic Company Ltd.

# COMPANY EVOLUTION



1997

High-efficiency platform development aiming to break the 90% barrier in Ultra Low Profile packaging (ULP).

1999

High-power, high density standard brick launched.

2001

World's first DC/DC converter intended for lead-free soldering.

2002

Ericsson Power Modules AB formed as an autonomous company.

2003

World's first 80 A quarter brick launched.

2004

30 millionth MacroDens PKF product shipped to market. Membership of DOSA and POLA.

# COMPANY EVOLUTION



2005

Membership of PMBus Group. Introduction of very high efficiency IBCs with wide range fo POL.

2006

Driving implementation of Digital Power concept. 60 millionth MacroDens shipped to market.

2007

Ericsson Power Modules merged into Business Unit Networks. Divesture of Kalmar plant to the Swedish company Proxy Electronics AB. Introduction of MicroTCA power module.

2008

Introduction of the first fully digitally controlled and programmable quarter brick DC/DC converter and 20 A and 40 A digitally controlled POL regulators.

2009

Received the 2008 “Product of the year” award of Electronic Products US for the BMR 453.

2010

Introduction of full read and write capability in POL regulators.

# COMPANY EVOLUTION



2011

Introduction of the second generation 3E POL regulators.

2012

Introduction of the second generation 3E Advanced Bus Converters.

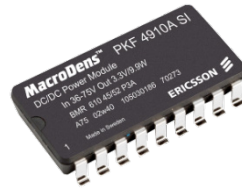
# A HISTORY OF SUCCESSFUL DEVELOPMENT (1977-1999)



**PKA**  
Ericsson's first on-board DC/DC power module, elected Product of the Year 1983; 5 times smaller and 20 times higher reliability with MTBF > 2 million hours.



**PKC**  
First high density, low profile DC/DC power modules. 1/2 size of conventional products and up to three regulated outputs.



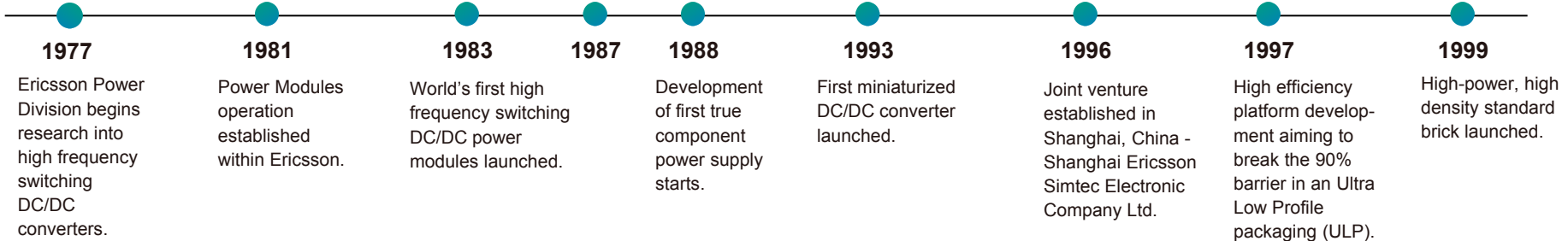
**PKF MacroDens™**  
5-15 W product platform. The first true component SMD DC/DC converter for highly automated manufacturing processes. MTBF > 4.9 million hours.



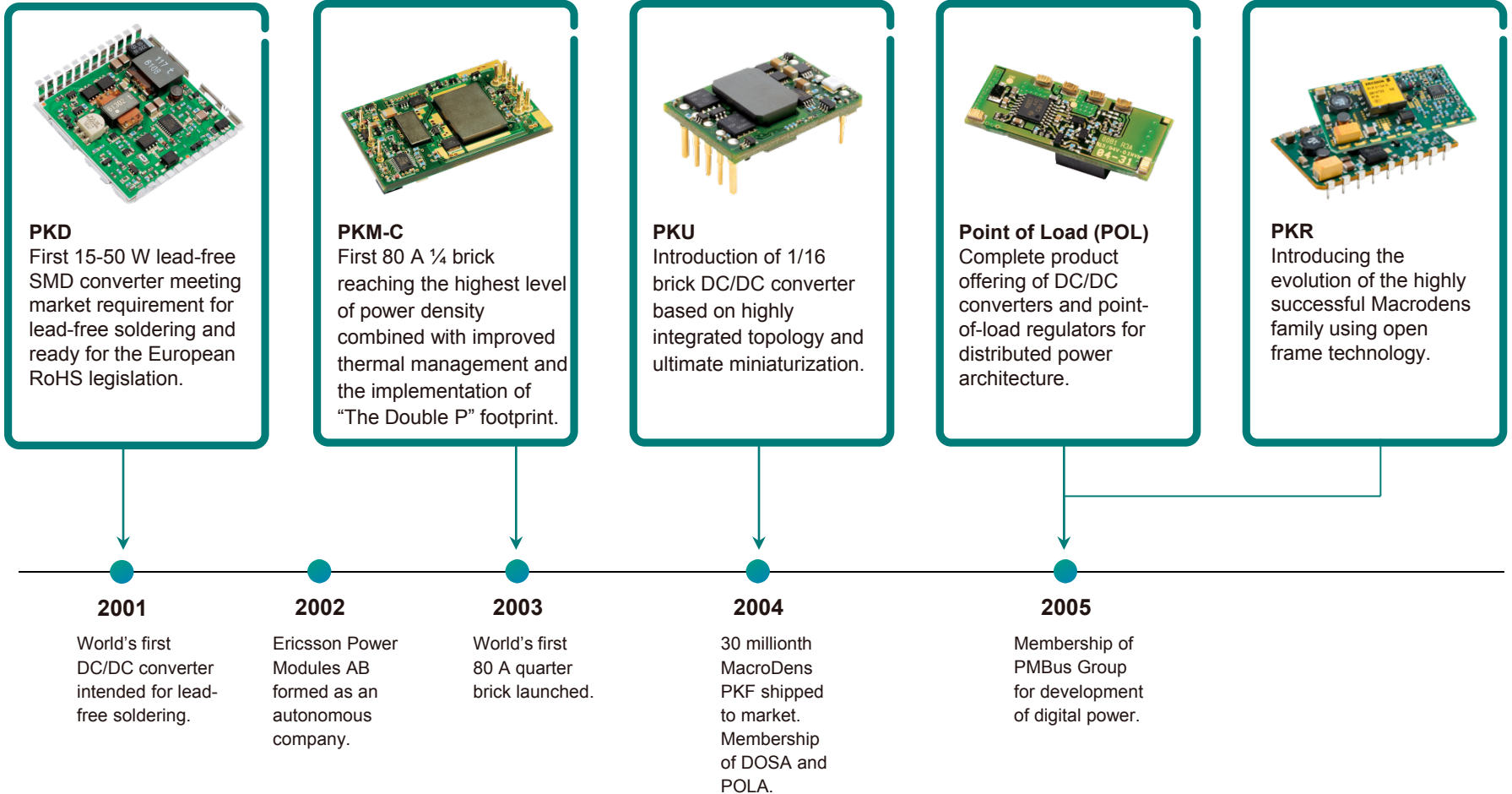
**PKG**  
First standard on-board DC/DC converter to use high power direct die-bonding. Takes power density and thermal performances to an unprecedented level.



**PKJ 4000**  
The result of High Efficiency platform development. Awarded Product of the Year 1999 as "The highest Power Density in the market."



# A HISTORY OF SUCCESSFUL DEVELOPMENT (2001-2005)



# A HISTORY OF SUCCESSFUL DEVELOPMENT (2006-2007)



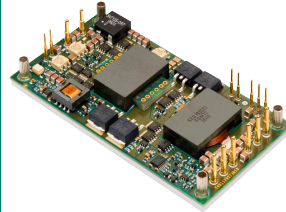
## Intermediate Bus Converters (IBC)

Introduction of ultra high efficiency, high power density IBCs for wide and narrow input voltages applications.



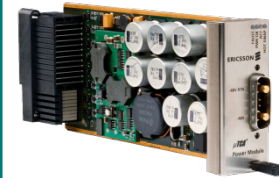
## High power drop-in replacement

Introduction of high efficiency, high power density eighth brick for direct replacement of ¼ bricks.



## Full Brick Power Amplifier Converter

Introduction of high efficiency, high power density full brick for powering of Power Amplifiers.



## MicroTCA power module

Introduction of a new revolutionary power module designed for use in MicroTCA rack systems.



## Third-generation POLA™ products.

Introduction of point-of-load modules with TurboTrans™ functionalities.

2006

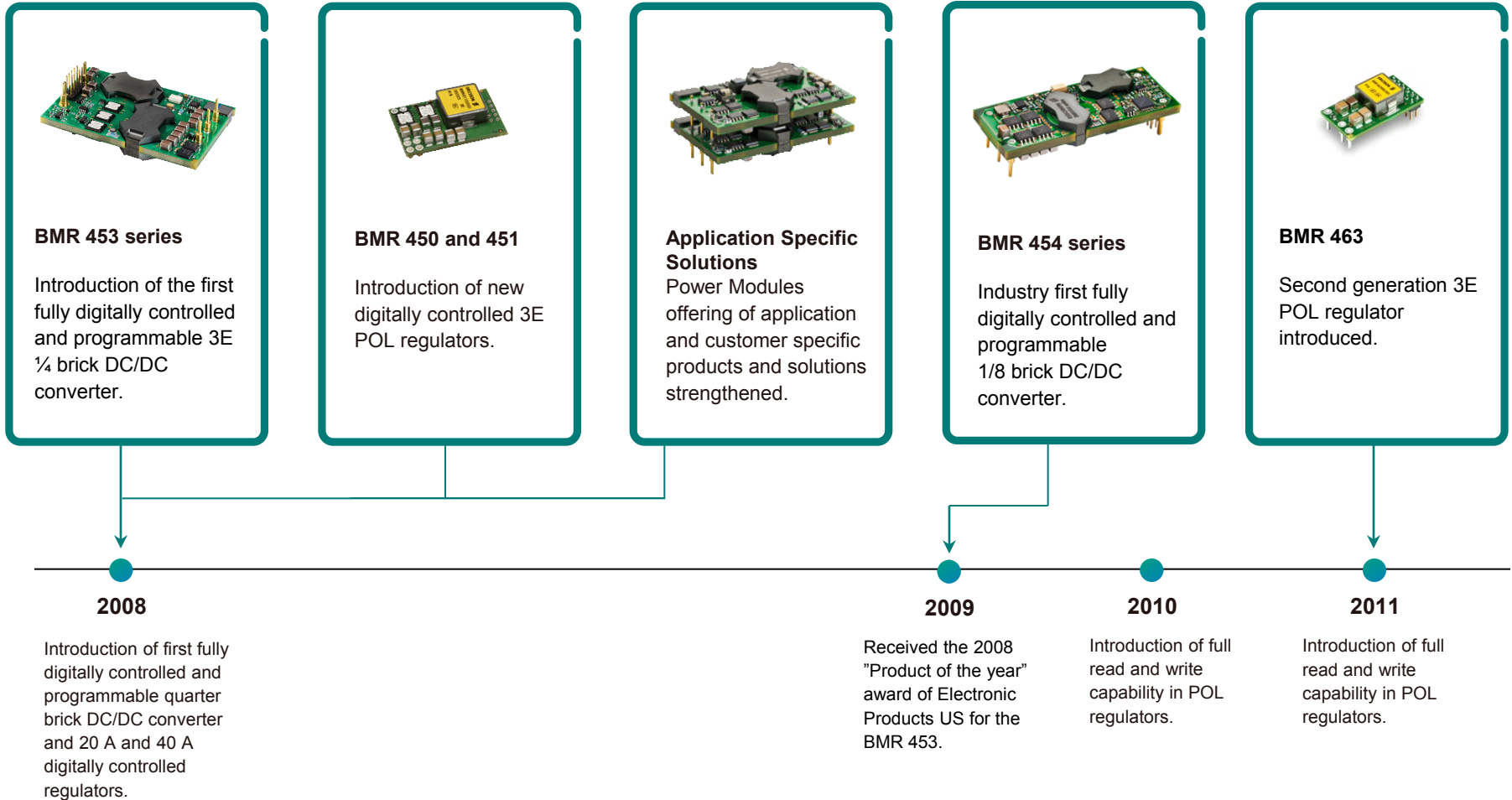
Driving implementation of Digital Power concept. 60 millionth MacroDens shipped to market from 1983.

2007

Ericsson Power Modules merged into Business Unit Networks. Divestiture of Kalmar plant to the Swedish company Proxy Electronics AB. Introduction of MicroTCA power module.



# A HISTORY OF SUCCESSFUL DEVELOPMENT (2008-2011)





**ERICSSON**



**ERICSSON**