

## European Solar Energy Storage

# Who has solid state rf energy



## Overview

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Magnetrons deliver open-loop, crudely-averaged energy output, whereas with multi-antenna, solid-state RF energy sources, forward and reflected power levels can be easily assessed and adapted to with closed-loop, precision control over the frequency, output power, phase and RF signal modulation.

Abstract This chapter is intended to provide an overview of the benefits that solid-state RF generators can provide to industrial, scientific, and medical (ISM) 'RF energy' applications, and the technologies, architectures, and design philosophies used in such generators. Our intention is to look.

RF energy denotes a novel energy source making use of high frequency electromagnetic energy to power all kinds of applications in a VERY controlled way. This is in contrast to "ordinary" energy sources like infrared radiation or convection heaters or microwave ovens where the control of energy is.

MIAMI, June 20, 2017 (GLOBE NEWSWIRE) -- IMPI ANNUAL MICROWAVE POWER SYMPOSIUM -- NXP Semiconductors N.V. (NASDAQ:NXPI), the number one supplier of RF power transistors, today announced the industry's highest power transistor for 915 MHz applications. The MRF13750H transistor delivers 750 W.

Magnetrons will eventually be replaced by solid-state RF power amplifier modules and controllers within the following applications: industrial heating and drying, plasma generation, chemical processing, commercial cooking (restaurants, fast re-heat and thawing) and, last but not least, consumer.

What is solid-state RF energy technology?

Can you answer this question?

The ability to generate and amplify RF signals using solid-state semiconductor devices is nothing new – this technology is the cornerstone of modern wireless communications. But solid-state RF energy has enormous potential beyond data transmission applications.

What is a solid-state RF generator?

The basic solid-state building block for power amplification and generation at RF and microwave frequencies is the RF power transistor. But before we look at details of its operation and use, let us take a high-level look at the potential benefits of solid-state RF generators for ISM applications.

What are the applications of solid-state RF?

Magnetrons will eventually be replaced by solid-state RF power amplifier modules and controllers within the following applications: industrial heating and drying, plasma generation, chemical processing, commercial cooking (restaurants, fast re-heat and thawing) and, last but not least, consumer microwave ovens. What is Solid-State RF Energy?

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What is the difference between solid state RF and RF power?

Solid state generated RF power on the other hand has much better control, it's very robust and barely degrades over time and it has become economical to implement. This added controllability is really the core advantage of the new technology.

What is RF energy?

RF energy denotes a novel energy source making use of high frequency electromagnetic energy to power all kinds of applications in a VERY controlled way. This is in contrast to "ordinary" energy sources like infrared radiation or convection heaters or microwave ovens where the control of energy is LIMITED when compared to a RF Energy source.

Can solid-state generators be used in ISM applications?

Nevertheless, as we shall see, the benefits they have ascribed to solid-state generators are (mostly) valid and can be valuably and immediately applied to a wide range of ISM applications. The basic solid-state building block for power amplification and generation at RF and microwave frequencies is the RF power transistor.

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### Making the Switch at Speed

Over the past 20 years, we've shipped more than 20,000 RF delivery systems with integrated solid-state matching networks built into those systems. These innovations met ...

### Solid-State RF Power Generators

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### **Transition from Tubes to Transistors: RF Power ...**

Solid-state RF power transistor devices represent the future of RF power generation. The end applications range from cooking to industrial heating, welding, drying and sealing equipment.

### What is solid state RF Energy

Solid-state RF systems have started to replace magnetrons within the following applications:  
Industrial heating and drying, Chemical

processing, Plasma generation, Commercial cooking ...



## NXP Pushes the Limits of Solid-State RF Energy

Based on 50 V silicon LDMOS, this transistor extends the limits of solid-state RF generation, making the MRF13750H an attractive alternative to vacuum tubes for very high ...

## What is Solid-State RF Energy?

What is the RF Energy Alliance's role in advancing solid-state RF energy? The organization strives to monitor relevant existing and emerging markets, educate companies along the value chain and standardize relevant ...



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## Transition from Tubes to Transistors: RF Power Closes the Loop

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## High power experiments of the Prototype Solid State RF

Achieving the same power levels as vacuum tubes requires combining the RF power of many transistors outputs. The RF combination strategy in SSPAs is traditionally ...

## Here Comes the Solid-State RF Energy Evolution

For a wide range of applications spanning from cooking and lighting, to medical and automotive and beyond, parallel advances in solid-state RF energy systems and ...



## Here Comes the Solid-State RF Energy Evolution

For a wide range of applications spanning from cooking and lighting, to medical and automotive and beyond, parallel advances in solid-state RF energy systems and semiconductors are poised



## Consortium facilitates adoption of solid-state RF energy techno

A consortium that intends to advance today's power and heating solutions by equipping engineers and designers with a transformative, cost-effective and highly efficient ...



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## Solid-State RF Power Generators

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Over the past 20 years, we've shipped more than 20,000 RF delivery systems with integrated solid-state matching networks built into those systems. These innovations met the critical industry need for ultra-fast tuning ...

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