



# New Freescale RF Industrial Transistor

Freescale extends plastic packaging portfolio of RF LDMOS transistors to 915 and 1300 MHz for ISM applications

*Announcing:*

**MRF8VP13350N**

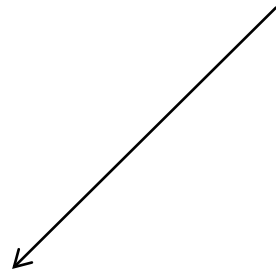


May 2015

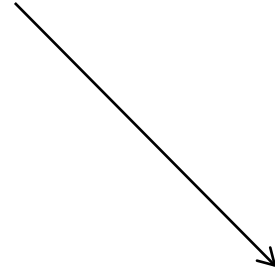
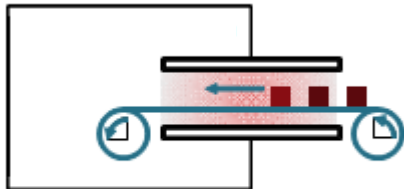




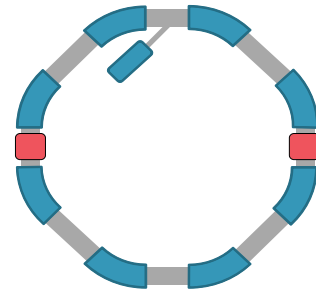
# 8VP13350N: 350 W for 915 and 1300 MHz Industrial, Scientific & Medical (ISM) applications



**915 MHz:**  
Industrial heating  
& welding systems



**1300 MHz:**  
Particle Accelerators



# Particle Accelerators

## What is this?

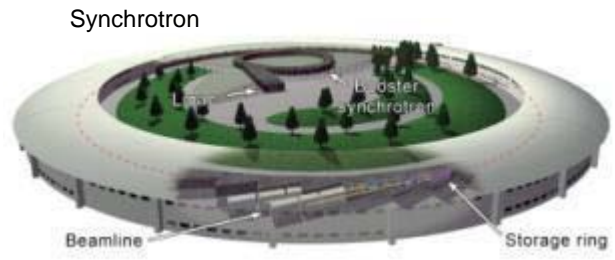
- Cyclotron:** charged particles are accelerated by an RF field and deviated along a spiral path by a static magnetic field
- Synchrotron:** charged particles are accelerated by RF fields and maintained in a circular ring by controlled magnetic fields.

## Applications

- Scientific:** Cyclotron are used for nuclear physics experiments and synchrotron are used for crystallography, chemicals and nuclear physics
- Medical:** imaging, proton therapy for cancer treatment (better body penetration than radiotherapy)



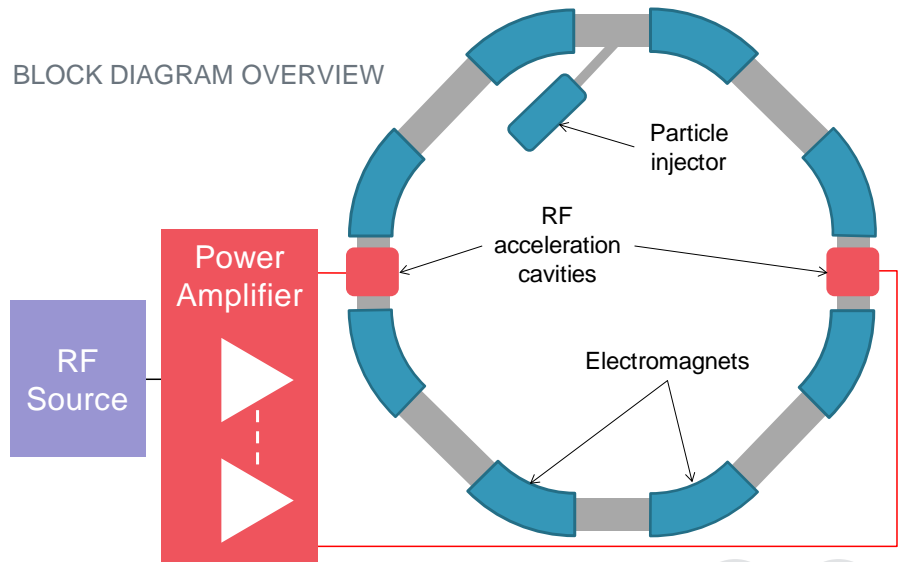
Cyclotron



Synchrotron



## BLOCK DIAGRAM OVERVIEW



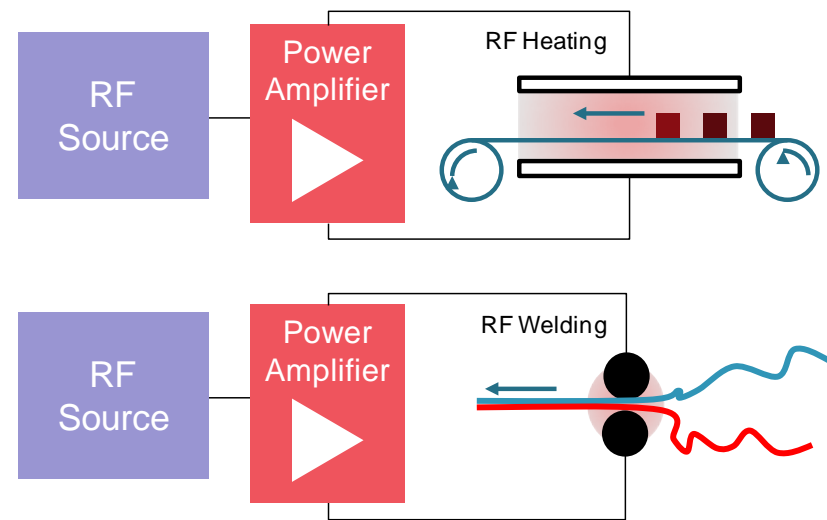
# Industrial RF Heating & RF Welding

## What is this?

RF can be used to send energy to various materials. If the material is a poor conductor of electricity, dielectric heating will occur.

For RF heating, the material to heat is placed into a high power RF field generated by two or more electrodes.

For RF welding, the sheets of plastic materials to solder are pressed between two electrodes. The most common materials used in RF welding are PVC and polyurethane.

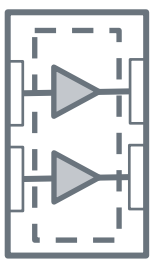


# MRF8VP13350N: 350 W LDMOS Transistor in Plastic



Designed for industrial heating/welding at 915 MHz and particle accelerators at 1300 MHz.

- Input pre-matched
- Housed in OM-780 over-molded plastic package
- High ruggedness: > 10:1 VSWR
- Product Longevity Program: warranted availability until 2030
- Recommended driver: MRFE6VS25N (25 W)



Board Frequency (MHz)	Schedule	Power (W P1dB)	Gain (dB)	Drain Eff. (%)	Size (inch)
915 MHz	Available	350 CW	20.7	6	5x4" (13x 10 cm)
1300 MHz	Planned	350 CW			

# more Information

## From the Product Summary Pages

- Data sheets
- Simulation models – ADS and AWR
- MTTF calculators
- S-parameters

*MRF8VP13350N:*

## From [www.freescale.com/RFpower](http://www.freescale.com/RFpower)

- Product Selector Guide
- Parametric search
- App notes – > 30 available
- White papers & webinars
- Freescale Product Longevity Program

## On the web

- Blogs & Twitter – @RFLeonard
- YouTube.com/Freescale
- RF Engineering Tools App   
for Android & iOS
- On eTailers & Freescale Approved Distributors



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