Resonant topologies like those used in induction cooking appliances have special requirements for power components. They need an IGBT that performs best at switching frequencies from 18 kHz–40 kHz and has low losses to meet energy efficiency standards, but at the most competitive price. However, unlike motor drive applications, induction cooking appliances don’t need hard switching capabilities, short circuit ratings, or special package types.

The new RC-E IGBTs build on a long tradition of application specific technologies. They are cost- and feature-optimized specifically for low- to mid-range induction cookers and other resonant applications. The RC-E technology uses an IGBT with monolithically integrated reverse conduction diode to set the new benchmark for price/performance and ease-of-use in the industry. This new family offers Infineon’s proven quality in RC IGBTs and meets all the needs of soft switching applications, including attractive pricing compared to other general purpose IGBTs.

**Soft switching trade-off – optimized for induction cooking appliances**

\[ I_s = 15 \text{ A}, T_s = 25^\circ \text{C}, R_g = 10 \Omega, V_{ce} = 18 \text{ V} \]

### Key features
- Low E\(_{\text{off}}\) and V\(_{\text{ce(sat)}}\)
- Designed for soft switching applications
- Optimized for performance with switching frequencies from 18 kHz–40 kHz
- Most commonly used blocking voltage, 1200 V
- Price versus performance leader for cost-effective designs
- Low losses help designs meet energy efficiency standards
- Drop-in replacement for existing designs
- Soft switching for good EMI behavior

### Key benefits
- Price versus performance leader for cost-effective designs
- Low losses help designs meet energy efficiency standards
- Drop-in replacement for existing designs
- Soft switching for good EMI behavior

[Diagram showing E\(_{\text{off}}\) and V\(_{\text{ce(sat)}}\) values for different IGBTs]
1200 V RC-E Reverse Conducting IGBT
Economical and efficient IGBT for induction cooking appliances

Key highlights of the RC-E family
› Low switching and conducting losses, similar to Infineon’s RC-H3 family
› Based on the technology used in the worldwide number 1 discrete IGBT family, RC-H
› Standard TO-247 package for simple replacement in existing designs

IGBT power losses – IHW15N120E1 versus competitors
Output power = 2.1 kW, T_c = 25°C

<table>
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<th>Part number</th>
<th>I_{at 100°C} [A]</th>
<th>V_{br} [V]</th>
<th>V_{CE(sat)} [V]</th>
<th>E_{off} [mJ]</th>
<th>V_{f} [V]</th>
<th>I_{at 100°C} [A]</th>
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<tr>
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RC-E product family key parameters

Additional information
For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings
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