3rd Generation Reverse Conducting IGBT
Higher Efficiency and Better Reliability

The 3rd generation of reverse conducting IGBTs has been optimized for lower switching and conduction losses. Reduced power dissipation together with soft switching behavior allows better thermal performance and EMI behavior resulting in lower system costs. Excellent performance can be achieved at lower costs.

Infineon RC-H technology has set the benchmark of $T_{j\text{\,(max)}}$ of 175°C to offer higher lifetime reliability. Recent portfolio extension to 30A and 40A at 1200V and 1350V defines the new trend for higher power density and better reliability devices.

40A 1350V device is capable for switching up to 50kHz with $V_{\text{CE\,(sat)}}$ value of 1.65V at 25°C – a staggering 5% lower loss than the next best competitor.

### Features
- Best-in-Class conduction properties in $V_{\text{CE\,(sat)}}$ and $V_{f}$
- Lowest switching losses, highest efficiency
- $T_{j\text{\,(max)}} = 175°C$
- Soft current turn-off waveforms for low EMI
- Higher breakthrough voltage $V_{\text{BR\,(min)}} = 1350V$

### Benefits
- Lowest power dissipation
- Better thermal management
- Surge current capability
- Lower EMI filtering requirements
- Reduced system costs
- Excellent quality
- Highest reliability against peak currents

### Applications
- Induction cooking stoves
- Microwave ovens
- Rice cookers
- Solar
- Other soft switching applications

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Comprehensive Best-in-Class Portfolio

<table>
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<tr>
<th>Partnumber</th>
<th>Package</th>
<th>$V_{CE}$ [V]</th>
<th>$I_c$ [A]</th>
<th>$V_{CE(sat)}$ [V]</th>
<th>$V_{f typ}$ [V]</th>
<th>$E_{off}$ @ 600V /μs [mJ]</th>
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</table>

* Wider power range, enhanced reliability

Performance: 1200V class devices offer Best-in-Class efficiency and thermal performance. 1350V IGBTs provide higher breakdown margin while keeping similar $V_{CE(sat)}$ value as competitor 1200V devices.

Reliability: All the RC-H3 products are qualified with $T_{j(max)}$ of 175°C while extended portfolio in 20A, 30A and 40A with $V_{BR(min)}$ of 1350V provides designers higher reliability.

Logistics & Quality: Infineon is proven logistics partner, able to fulfill the highest demand requests.