Breaking the switching-speed-limits in various topologies
The new 1200V and 600V IGBT HighSpeed 3 family, optimized in every respect

The new 1200V and 600V 3rd Generation HighSpeed IGBT family is optimized for hard- and soft-switching topologies. The family sets a new benchmark for switching losses and is recommended for use in topologies switching at more than 20kHz.

The very short tail-current, and low turn off losses (25% less than the closest competitor) are the key features of this new family and up to 15% efficiency can be attained by implementing this family in your design.

Not only does the family offer very low switching losses, the conduction losses are also very low. This is thanks to the world famous TRENCHSTOP™ technology from Infineon that has an intrinsically very low $V_{ce(sat)}$ behavior.

Meanwhile the free wheeling diode in the duo packs is a 4th generation emitter controlled diode and is optimized for fast recovery whilst maintaining a high level of softness. This provides excellent complementary high speed switching performance, ruggedness and EMI behavior.

Paired with the HighSpeed 3 IGBT you have the best device on the market.

Infineon introduces a new family of 1200V and 600V IGBTs optimized for high-frequency applications which provide benchmark performance in terms of switching losses and efficiency.

![Trade-off Diagram @ 150°C](image)

Infineon’s new HighSpeed 3 IGBT is perfectly balanced between switching and conduction losses.

www.infineon.com/igbt

**Applications**
- UPS
- Welding
- Solar inverters

**Main Features and Benefits**
- Lowest switching losses for switching frequencies above 20kHz giving high efficiency
- Soft switching waveforms for excellent EMI behavior
- Low $V_{ce(sat)}$ giving low conduction losses
- Optimized diode for target applications meaning lower diode losses and fast recovery time
- RoHS compliant
- Positive $V_{ce(sat)}$ temperature coefficient meaning thermal runaway not an issue and paralleling is easy
- 10µs short circuit rating
Breaking the switching-speed-limits in various topologies

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Product Portfolio

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**Power Dissipation**

\[ P = V_{ce} \times I_c \times D + f_{sw} \times E_{sw,tot} \]

At 40A, Tj = 150°C, the IFX device provides 15% lower losses.

Thanks to the higher Tjmax and lower losses, for a fixed Tc = 100°C the KW device can run up to 50% higher Load Current than best competitor’s device.

**Warnings**

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office. Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of such life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

**Legal Disclaimer**

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**Information**

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (www.infineon.com).

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