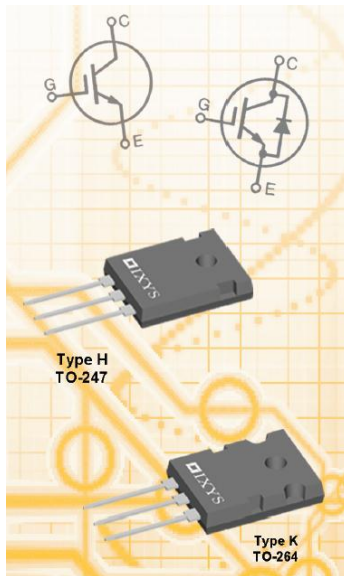


600V XPT IGBTs

IXYS Introduces New Discrete 600V Extreme Light Punch Through (XPT) IGBTs



Milpitas, Ca. and Biel, Switzerland. January 31st, 2011 – IXYS Corporation (NASDAQ: IXYS) is pleased to announce the expansion of its benchmark XPT IGBT product line with new 600V discrete additions. These new discrete IGBTs are tailored to address market demands for highly rugged, low loss semiconductor devices that offer the ability to be easily configured in parallel. The featured devices demonstrate superior performance and exceptional ruggedness in applications such as power inverters, uninterruptible power supplies, motor drives, switch mode power supplies, power factor correction circuits, battery chargers, welding machines, and lamp ballasts.

Initial release of these new discrete XPT IGBTs will include devices that are available with current ratings from 100A to 210A. Developed using IXYS' extreme light PT (XPT) design platform, these new devices feature excellent electrical characteristics which include low typical V_{cesat} as low as 1.8V, low typical current fall times (t_{fi} as low as 42ns), and low typical turn-off energy per pulse values (E_{off} as low as 0.33mJ). In addition, they demonstrate exceptional ruggedness during switching and under short circuit conditions, establishing a new benchmark in device ruggedness. This is achieved through a 10us short circuit safe operating area (SCSOA), dynamic avalanche ratings, and a square reverse bias safe operating area (RBSOA) rated up to the device's blocking voltage. Furthermore, these devices feature an extended forward bias safe operating area (FBSOA), allowing for a "wider operating window" as dictated by the power limitations of the device, resulting in improved ruggedness and reliability.

IXYS XPT IGBTs are available in two distinctive speed classifications; the B3 and C3 Classes respectively. The B3 and C3 speed classifications offer designers with a more flexible approach to device selection regarding critical requirements such as switching frequency, saturation voltage, and cost. B3-Class devices feature an excellent balance between conduction and switching losses and are optimized for hard switching frequencies from 10 kHz to 30 kHz. C3-Class devices are optimized for minimal switching losses and are recommended for hard switching frequencies from 20 kHz to 60 kHz.

The featured devices are also available with IXYS' Sonic-FRDTM and HiPerFREDTM anti-parallel ultra-fast diodes (Sonic-FRDTM – Suffix H1, ie. **IXXK100N60C3H1**) (HiPerFREDTM - Suffix D1, ie. **IXXH50N60C3D1**). The combination of XPT IGBT and IXYS' Sonic-FRDTM or HiPerFREDTM result in an optimal match for reduced turn-off losses. Furthermore, the soft recovery characteristics of the Sonic-FRDTM and HiPerFREDTM diode allows the XPT IGBT to be switched on at very high di/dt 's regardless of low current and temperature conditions and provides excellent EMI performance despite the level of the switched current. Additional features include a maximum operating temperature of 175 degree Centigrade and a positive forward voltage coefficient, which enables parallel operation, allowing designers the ability to utilize multiple XPT discrete devices in parallel to achieve the desired high current requirements of their application.

Both co-packed and non co-packed versions are available in industry standard discrete packages (ie. TO-247, TO-264, etc.). Initial device offerings include part numbers: [IXXH100N60B3](#), [IXXK100N60B3H1](#), [IXXH50N60C3](#), [IXXH50N60C3D1](#), [IXXK100N60C3H1](#), and [IXXH100N60C3](#). Additional product line offerings are in process, including new current and package options that will be made available in the near future.

600V XPT IGBT Summary Table

Part Number	V _{CE(S)} (V)	I _{C25} T _c =25°C (A)	I _{C110} T _c =110°C (A)	V _{ce(sat)} max (V)	t _{fi} typ (ns)	E _{off} typ T _J =125°C (mJ)	R _{thJC} max (°C/W)	Configuration	Package Style
IXXH100N60B3	600	210	100	1.8	150	2.80	0.18	Single	TO-247
IXXK100N60B3H1	600	190	N/A	1.8	150	2.80	0.18	Co-pack (Sonic-FRD)	TO-264
IXXH50N60C3	600	100	50	2.3	42	0.48	0.25	Single	TO-247
IXXH50N60C3D1	600	100	50	2.3	42	0.48	0.25	Co-pack (HiPerFRED)	TO-247
IXXH100N60C3	600	190	100	2.2	75	1.40	0.18	Single	TO-247
IXXK100N60C3H1	600	170	N/A	2.2	75	1.40	0.18	Co-pack (Sonic-FRD)	TO-264

[IXYS 600V Discrete XPT IGBT Parametric Data and Datasheets](#)

**Select "XPT IGBTs 600V" to configure the product table to display all discrete 600V XPT devices.*

[New Product Brief](#)

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Additional information may be obtained by visiting IXYS website at <http://www.ixys.com>, or by contacting the company directly.