

4500V Power MOSFETs

Ideal for Very High Voltage Power Conversion Applications



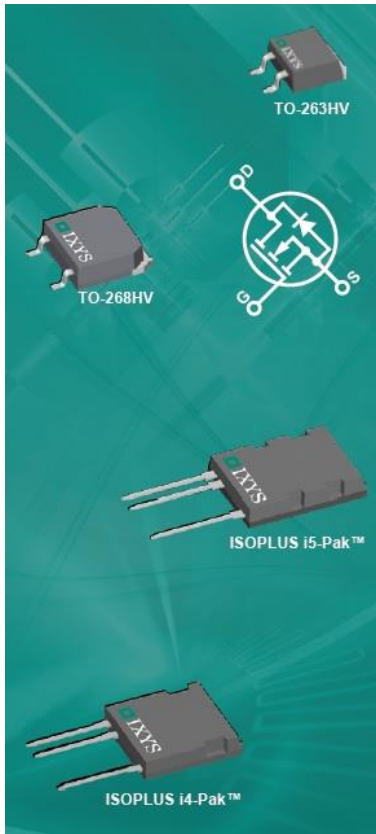
IXYS Corporation

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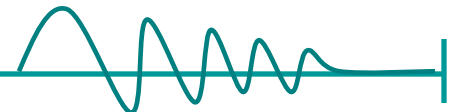
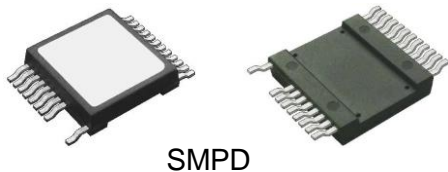
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Product Line Introduction (4500V Power MOSFETs)



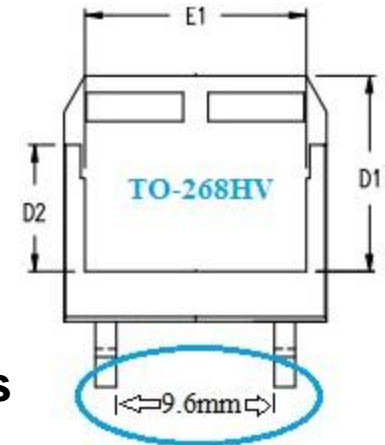
- Highest voltage, discrete Power MOSFETs in the industry (6 parts available so far)
- Current ratings: 200mA to 2A
- Designed for very-high voltage, high-efficiency power conversion applications
- Easy mounting
- High power density
- UL 94 V-0 flammability qualified (molding epoxies)
- Proprietary High-Voltage and ISOPLUS™ packages (TO-263HV, TO-268HV, ISOPLUS i4-Pak™, ISOPLUS i5-Pak™)
- Also available (upon request) in surface-mountable, ultra-low profile SMPD and Mini-SMPD packages



Technology Advantages and Benefits

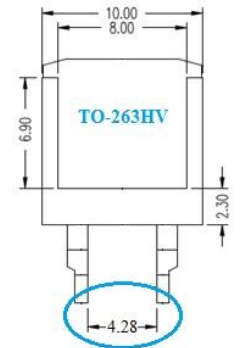
Increased creepage distance between leads

- Prevents arcing in high voltage applications
- 2 times greater creepage distance of TO-263HV (4.28mm) and TO-268HV (9.6mm), compared to the standard version packages



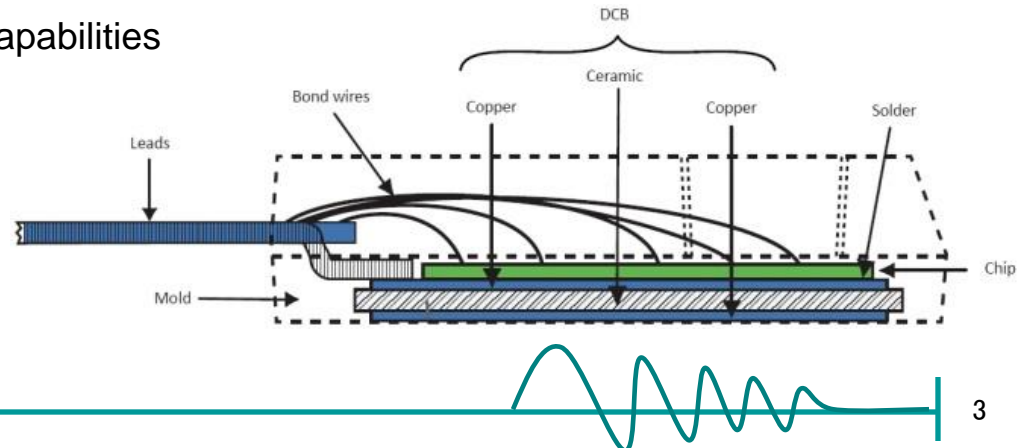
Elimination of multiple series-connected lower-voltage devices

- Simplification and reduction in gate drive circuitry
- PCB space savings
- Parallel operation possible thanks to positive temperature coefficient of $R_{DS(on)}$



Up to 4500V Direct Copper Bond (DCB) isolation

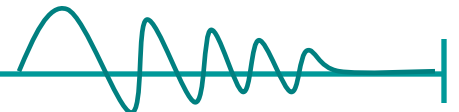
- Electrically isolated tab for heat sinking
- Provides excellent thermal performance
- Best-in-class power and temperature cycling capabilities



4500V Power MOSFETs Summary Table

The highest voltage discrete Power MOSFETs available in the power semiconductor industry!

Part Number	V_{DS} (V)	$I_{D(sat)}$ TC = 25°C (A)	$R_{DS(on)}$ max. $T_J = 25°C$ (Ω)	C_{iss} typ. (pF)	Q_r typ. (nC)	t_{rr} typ. (μ s)	$R_{\theta(jc)}$ max. (°C/W)	P_D (W)	Package Type
IXTA02N450HV	4500	0.2	750	256	10.4	1.6	1.1	113	TO-263HV
IXTF02N450	4500	0.2	750	256	10.4	1.6	1.6	78	ISOPLUS i4-Pak™
IXTT02N450HV	4500	0.2	750	256	10.4	1.6	1.1	113	TO-268HV
IXTF1N450	4500	0.9	85	1730	40	1.75	0.77	165	ISOPLUS i4-Pak™
IXTT1N450HV	4500	1	85	1730	40	1.75	0.24	520	TO-268HV
IXTL2N450	4500	2	23	6900	156	1.75	0.56	220	ISOPLUS i5-Pak™



Applications

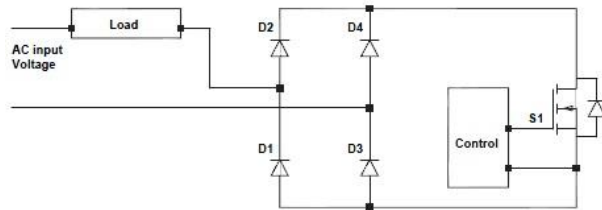
Designed for very high voltage efficient power conversion applications.

semiconductor equipment

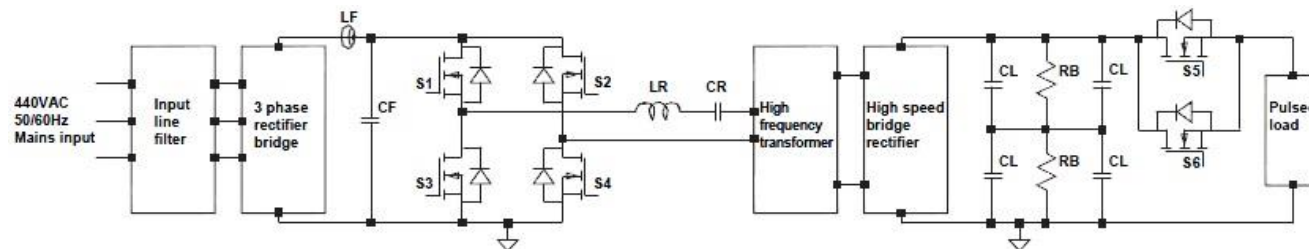


- capacitor discharge circuits
- high voltage power supplies
- semiconductor manufacturing equipment

AC switch



- laser and X-ray generation systems
- high voltage relay disconnect circuits
- energy tapping applications from the power grid



capacitor-charging power supply circuit



Competitive Landscape

Very few discrete Power MOSFET competitors above 1700V!

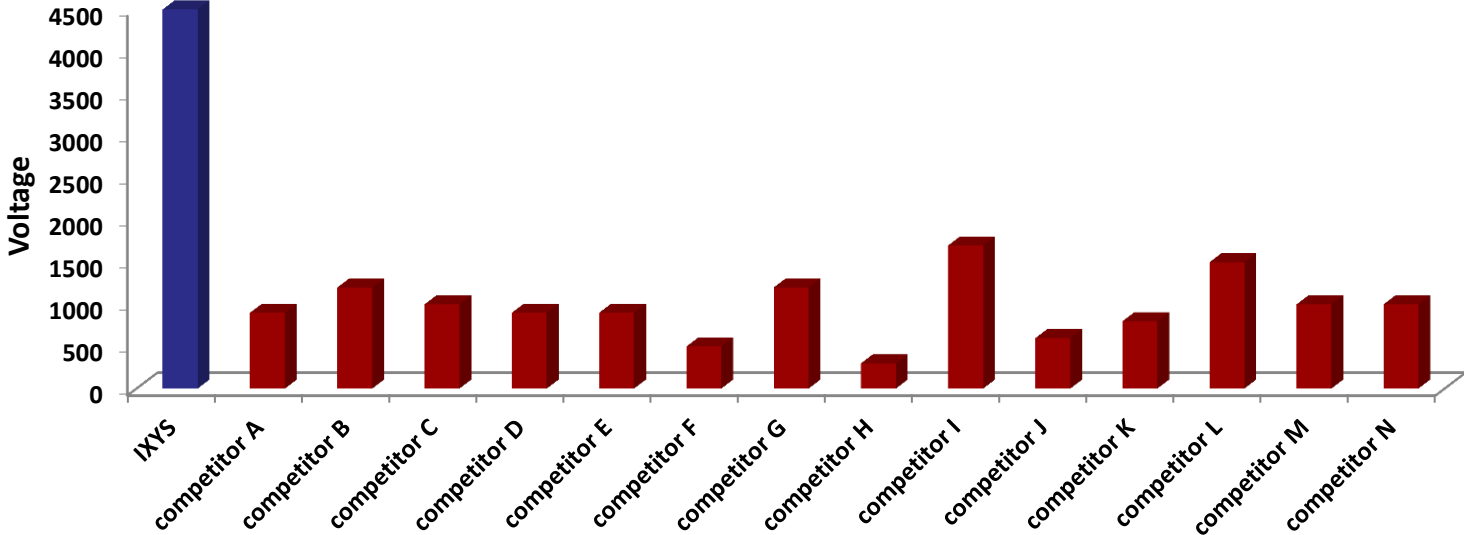


Figure 1: Comparison of blocking voltages among major power semiconductor companies

