

Extreme energy. Ultimate run. Infineon Prime Switch



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가상부스에 오신 걸 환영합니다!



Infineon Technologies Bipolar



Infineon Technologies Bipolar

Eco Line

straight, efficient, functional

Modules
Eco Block



Solder Bond



Pressure Contact

Power Line

reliable, powerful, valuable

Modules
Power Block



Diodes
Power Chip



Soft Starters
Power Start



Discs
Power Disc



Prime Line

unique, optimized, leading

Modules
Prime Block



Solder Bond



Pressure Contact

Diodes
Prime Soft



Discs
Prime Disc



Press Pack IGBT
Prime Switch



System Line

specific, complete, versatile

Stacks/Assemblies
Power Stack



Fittings
Power Fit



Infinite Prime Switch

Product / system overview

Description

New direct press pack 4500 V/3000 A IGBT with and without internal freewheeling diodes based on Infineon's 4.5 kV trench IGBT chips. Using low-temperature sintering technology, the IGBT chips are sintered and directly connected to the pole pieces to enable double side cooling.

P3000Z45X168



Main features

- › 4.5 kV trench IGBT chip
- › Full long-term short-on-fail; pressure contact technology, no springs
- › Hermetically sealed explosion-proof housing

Applications

- › HVDC & FACTS
- › DC breakers
- › MV drives

Contact

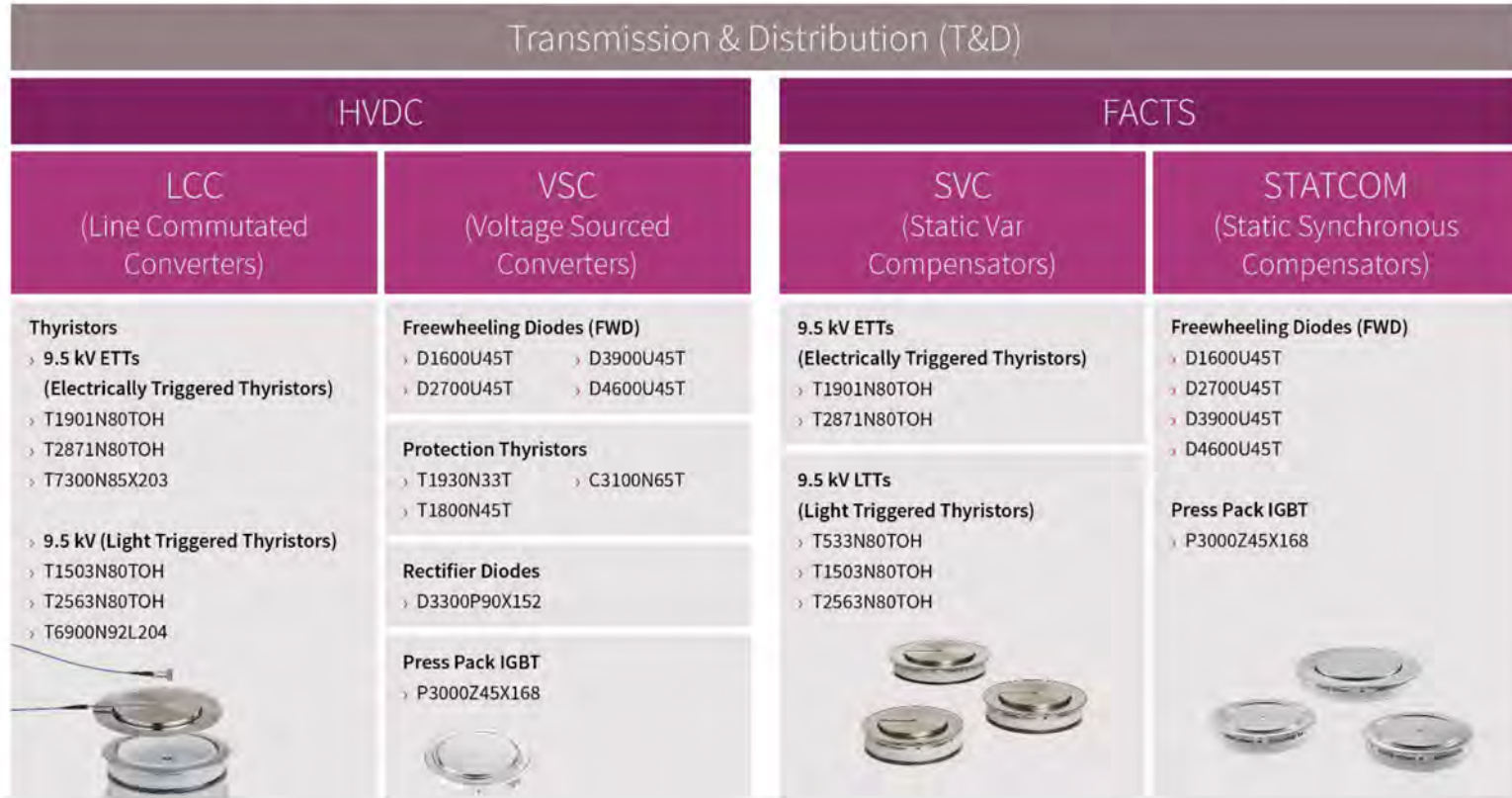
Jens Przybilla



Chen Pan



Solution tree: Infineon devices offer highest quality and reliability



Target applications

Prime Soft diodes



Perfect fit

- › For IGCT and modern IGBT applications such as HVDC voltage source converters and medium voltage drives

Basic product features

- › **Robust design**
Enabling pulse turn-off losses up to 12 MW at a maximum junction temperature of 140°C
- › **Lowest thermal resistance**
Compared with a free-floating contact, the thermal resistance of the sintered device is about 15% lower and the surge current capability is much higher

Medium-voltage drives for high-power applications

Medium-voltage IGCT inverter

Freewheeling or clamping diodes (SH)

Medium-voltage Press Pack IGBT inverter

Freewheeling or clamping diodes (U)

Super-low-loss
freewheeling diodes (W)

- › Excellent soft recovery behavior even under the most demanding turn-off conditions to avoid overvoltage at the switching device
- › High-tech production processes deliver outstanding dynamic parameters for best cost

Benefits

- › Soft switching behavior optimized for IGCT devices
- › Current turn-off capability up to 5 kA/μs

Benefits

- › Soft switching behavior optimized for IGCT or IGBT devices
- › Current turn-off capability up to 5 kA/μs
- › Less snubber effort

Benefits

- › Soft switching behavior optimized for IGBT devices
- › On-state losses reduced by 25% (comp. with "U", target)
- › Current turn-off capability up to 5 kA/μs
- › Less snubber effort

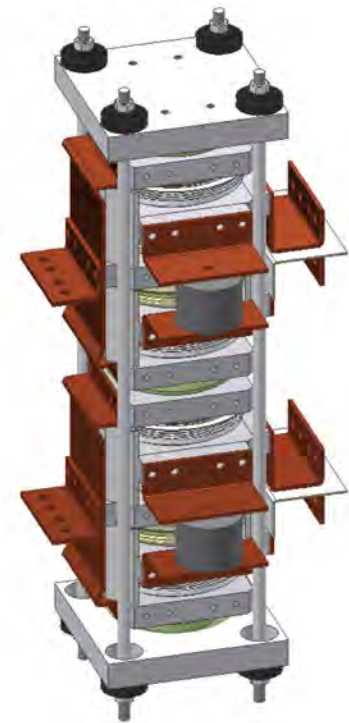
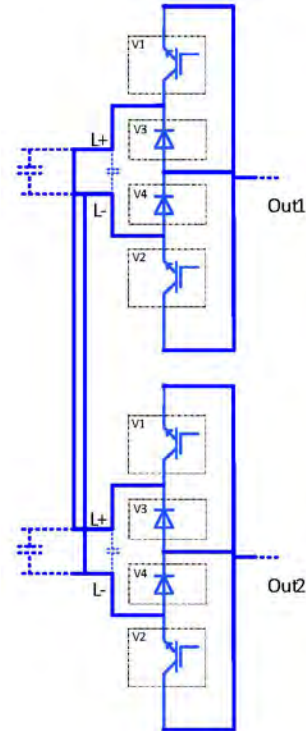
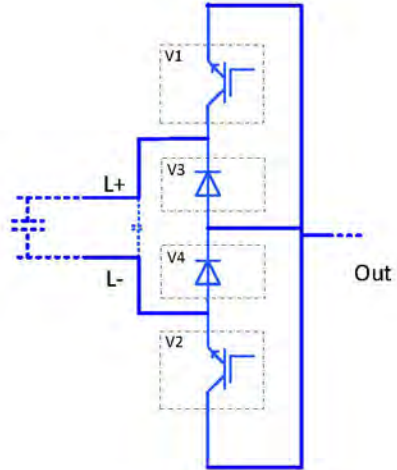
When quality and performance matter



- › Over 75 HVDC-served projects are installed under extreme conditions – all around the globe from the Middle East to Polar regions.
- › We served 15 HVDC projects to transmit hydro power with nearly 50 GW transmission power.
- › We served 8 HVDC offshore wind power projects with more than 5 GW transmission power.
- › Infineon devices for HVDC applications offer the highest quality and reliability due to robust design and outstanding production processes.

Blueprints for stacks with Prime Switch

Press Pack IGBT with separate freewheeling diode



Overview stacks and assemblies

System line

Infineon Power Stack

Blocks for modules



Power Block 20, 34, 50, 60, 70 mm

Blocks for discs



41, 50, 60, 75, 100, 110, 120, 150 mm

Infineon Power Fit










- › Clamps
- › Protection circuits
- › Fuses
- › Hoses
- › Firing circuits
- › Optical fibers
- › Sensors, etc.

Liquid- or air-cooled **Power Stacks** for all converter circuits and applications





Stacks from blocks

General stack concepts

Stack concept →	Compact Stack (KM, KW)	Frame Stack (Kx)	Tower Stack
Stack package	 3KM17	 3K017	 2K54
Block package (embedded, example)	Compact Block	Frame Block	Tower Block
	 KM14	 K017	 K54
Semiconductor package			
Coolant	Air or liquid	Air	Air or liquid
Operating voltage	Up to 1.2 kV AC	Up to 2.5 kV AC	Up to 20 kV AC
Insulation	Like module	FRP*, plastics	FRP*, AlN, coolant

* FRP = fiberglass reinforced plastic

Overview: Possible basic block and basic stack variant

System Line						
Power Stack						
Blocks for modules			Blocks for discs			
						
Power Block 20, 34, 50, 60, 70 mm			41, 50, 60, 75, 100, 110, 120, 150 mm			
Air	Liquid		Air	Liquid	Special	
3	2		5	3	9	22 heatsink designs
7	9		22	19	18	75 block designs
>1927	732		>2478	>2105	>1392	>8634 block variants
>6000	>3000		>15268	>2105	>1392	>25765 stack designs

Key benefits

- › Proven heatsink and mounting concepts for all bipolar semiconductors, circuits and applications
- › Proven building block systems
- › Proven complex stack assembly solutions
- › Cost-effective, fast and flexible Power Stacks
- › Short time-to-market

Fast and direct technical support

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