Be smart. Prototype online.

Prototyping Made Easy with Infineon's Online Engineering Tools

www.infineon.com/tools

Digital Demand Generation
Jianan Shen
Online Engineering & Marketing Manager
2019-Jan-11

Agenda

1. Online Engineering Tools Overview
2. How to select a product? Use our Product Finders!
3. How to select a solution? Use our Solution Finder!
4. How to check a solution? Use our Design Tools!
5. How to get support? Use www.infineon.com/support

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Online Tools Overview
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Aware (Interest) | **Select** (Learn) | **Check** (Evaluate) | **Buy Sample** (Purchase) | **Design-in** (**Justify**) | **Purchase Volume** (Use) | **After Sales** (Get help)

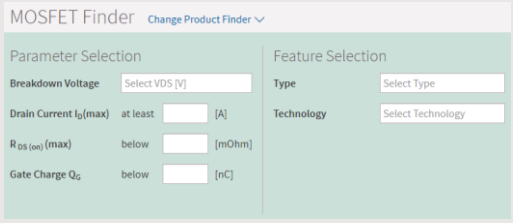
7 minutes

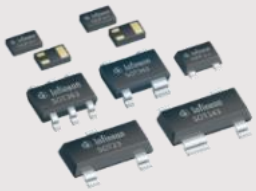
www.infineon.com/tools

Infineon Toolbox: focus on Design-in

Coming soon

How to select a Product?





Product Finders (e.g., IGBT, MOSFET, IPM, Gate Driver, Simulation Models, etc.)

How to select a Solution?

Use our Solution Finder

(e.g.: Motor Control, SMPS, LED Lighting, PoL)

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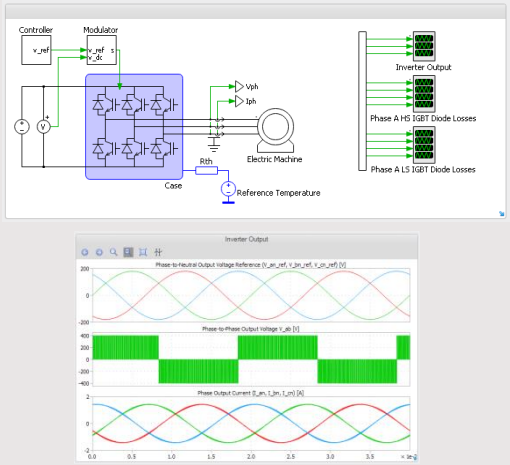

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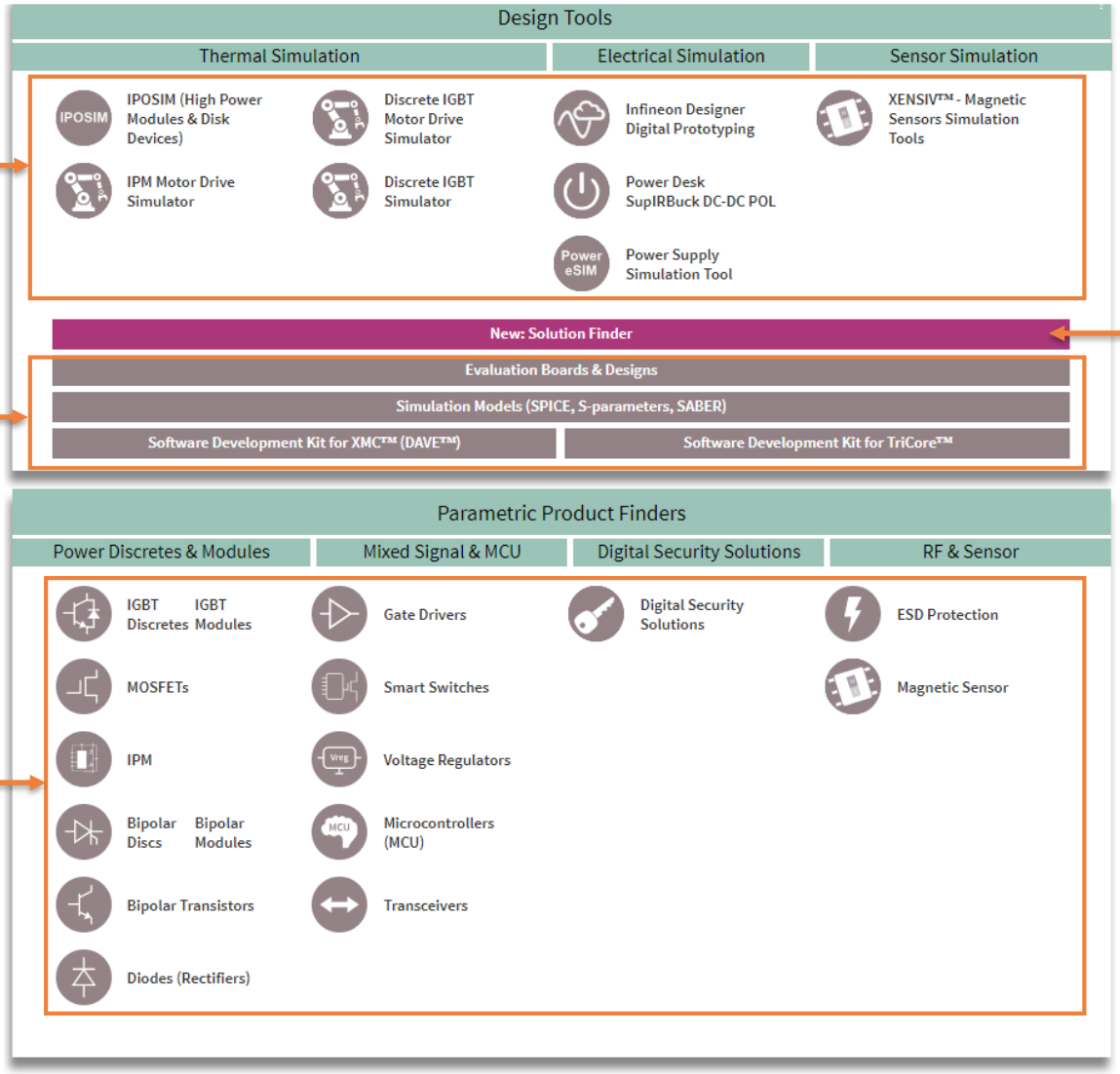
Hardware Design

Software Design

16 Product Finders



Solution Finder

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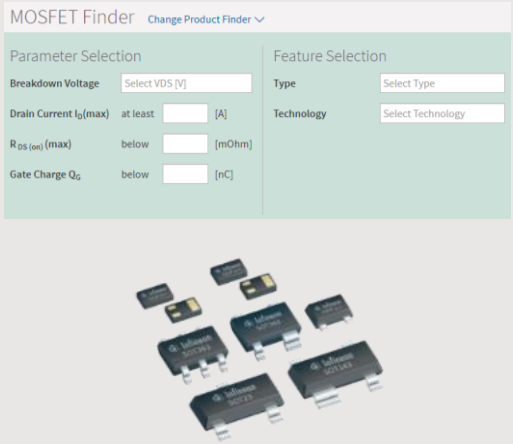

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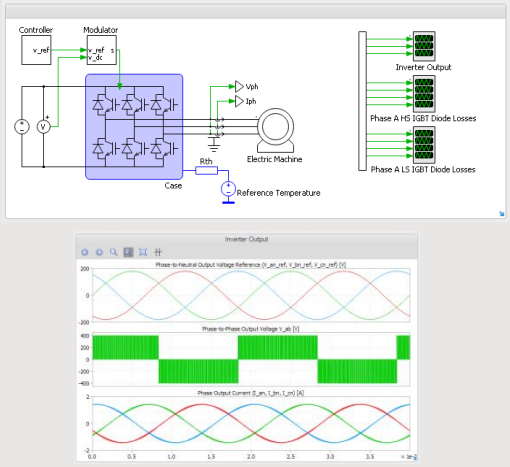

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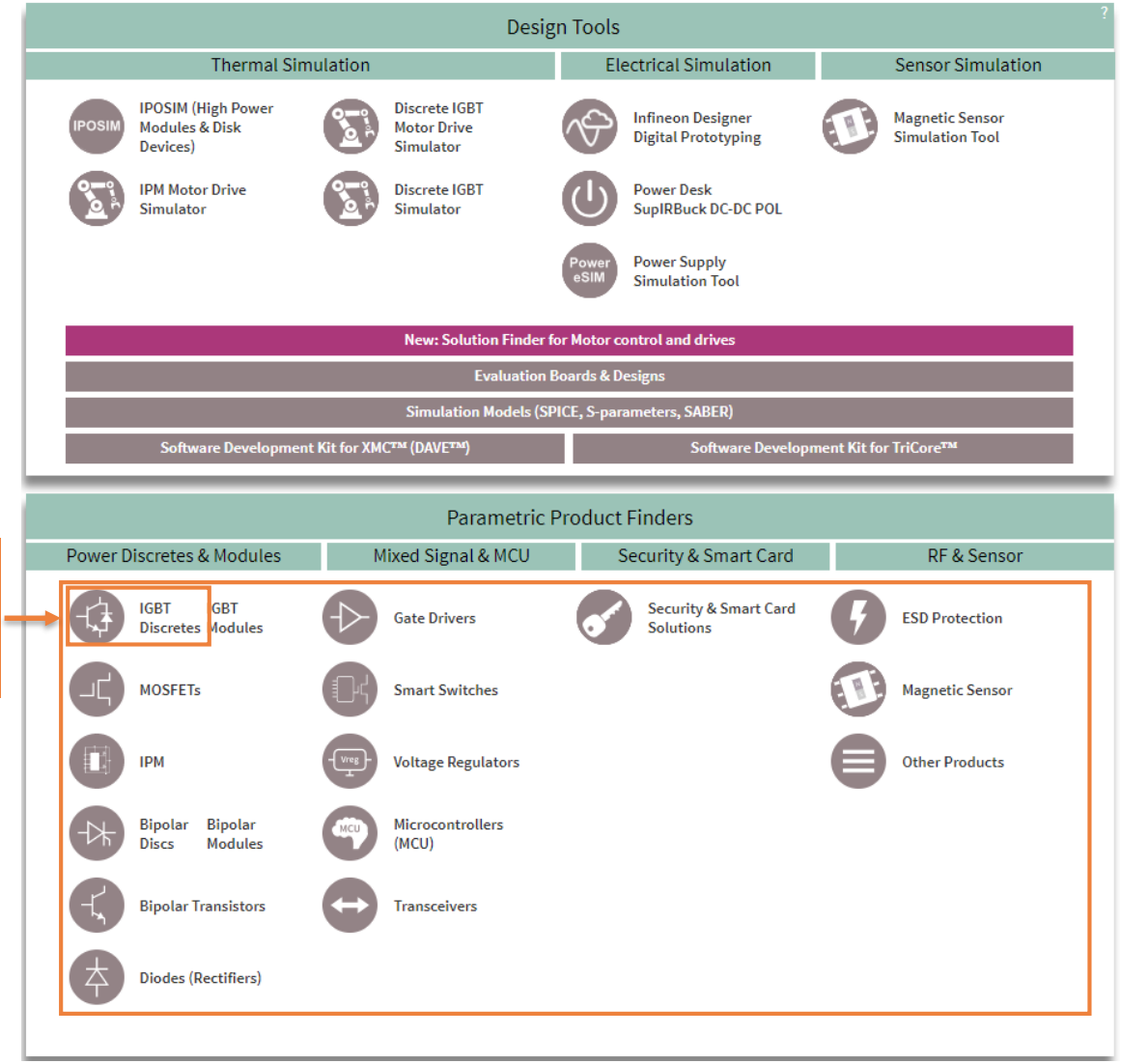
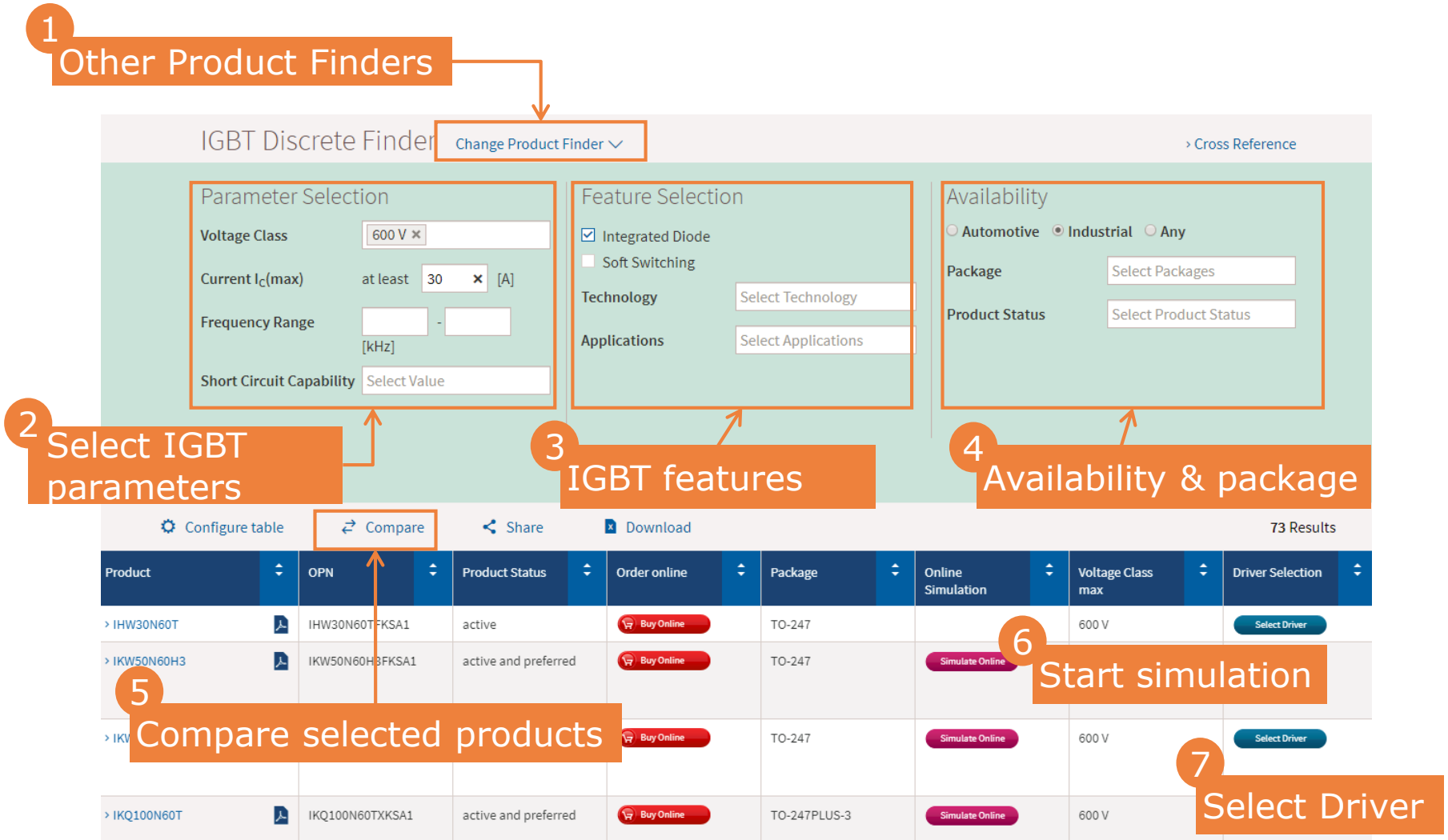


IGBT Discretes Finder

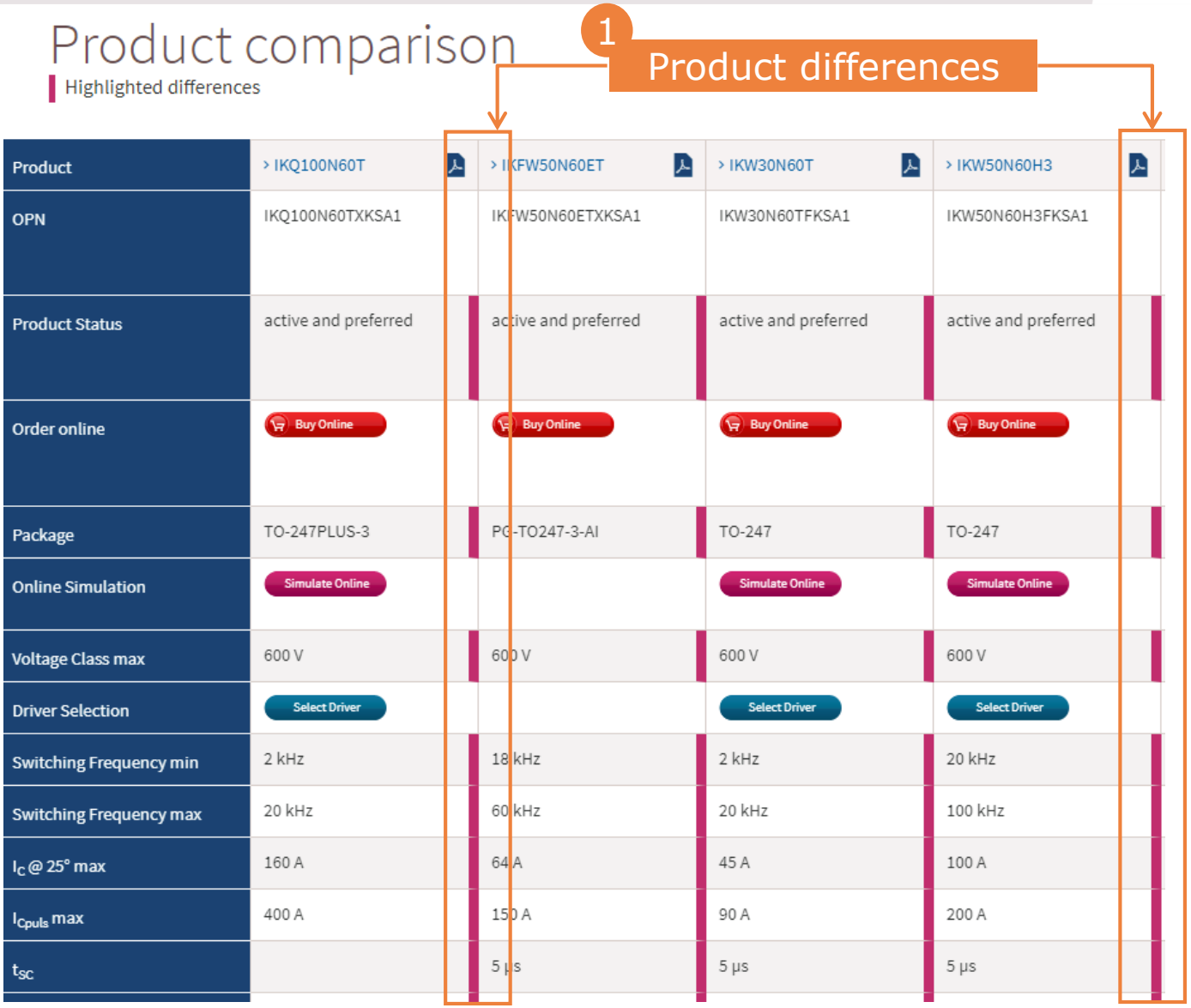
Parametric Finder Example

IGBT Discrete Finder



Compare Selected Products

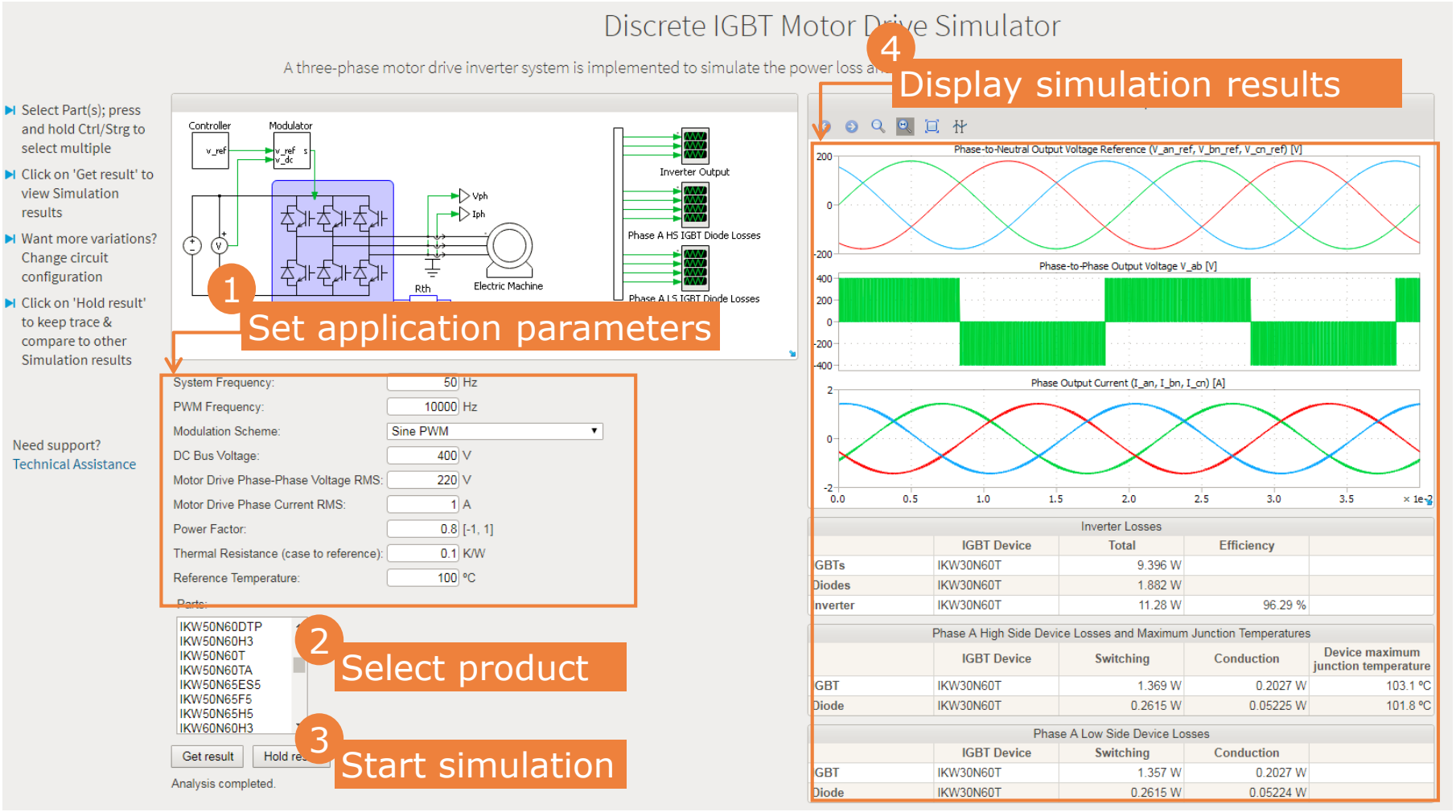
show differences



Product	> IKQ100N60T	> IKFW50N60ET	> IKW30N60T	> IKW50N60H3
OPN	IKQ100N60TXKSA1	IKFW50N60ETXKSA1	IKW30N60TFKSA1	IKW50N60H3FKSA1
Product Status	active and preferred	active and preferred	active and preferred	active and preferred
Order online	Buy Online	Buy Online	Buy Online	Buy Online
Package	TO-247PLUS-3	PG-TO247-3-AI	TO-247	TO-247
Online Simulation	Simulate Online		Simulate Online	Simulate Online
Voltage Class max	600 V	600 V	600 V	600 V
Driver Selection	Select Driver		Select Driver	Select Driver
Switching Frequency min	2 kHz	18 kHz	2 kHz	20 kHz
Switching Frequency max	20 kHz	60 kHz	20 kHz	100 kHz
I_C @ 25° max	160 A	64 A	45 A	100 A
I_{Cpuls} max	400 A	150 A	90 A	200 A
t_{SC}		5 µs	5 µs	5 µs

Simulate Products Online with PLECS

https://plex.infineon.com/plexim/igbtmotor.html?Parts=IKW30N60T



Widget available on every MOSFET product pages

› Home › Products › Power › MOSFET › 500V-900V CoolMOS™ N-Channel Power MOSFET › 900V CoolMOS™ N-Channel Power MOSFET › IPP90R800C3

IPP90R800C3

- Overview
- Parametrics
- Documents
- Order
- Boards
- Simulation
- Videos
- Packaging
- Quality
- Support

Description:

900V CoolMOS™ C3 is Infineon's third series of CoolMOS™ with market entry in 2001. C3 is the "working horse" of the portfolio.

Summary of Features:

- Low specific on-state resistance (R_{on}*A)
- Very low energy storage in output capacitance (E_{oss}) @400V
- Low gate charge (Q_g)
- Fieldproven CoolMOS™ quality
- CoolMOS™ technology has been manufactured by Infineon since 1998

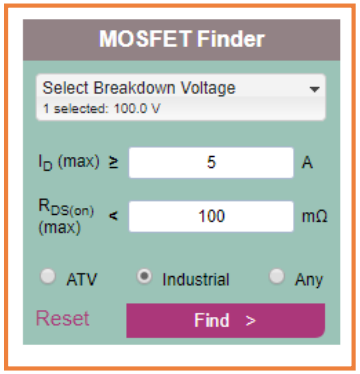
Benefits:

- High efficiency and power density
- Outstanding cost/performance
- High reliability
- Ease-of-use

MOSFET Widget

Buy online

IPP90R800C3 › EN
01_00 | 2009-09-11 | pdf | 286 KB



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7 minutes

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Infineon Toolbox: focus on Design-in

Coming soon

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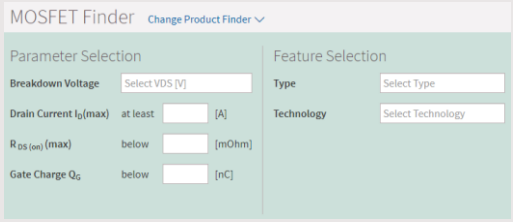

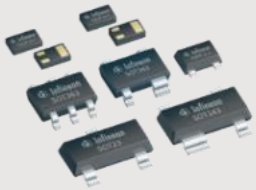

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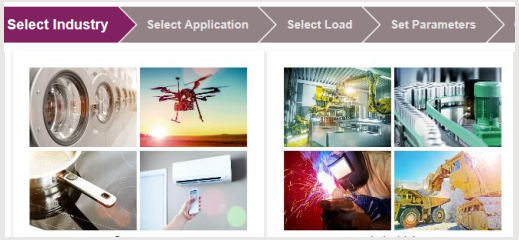
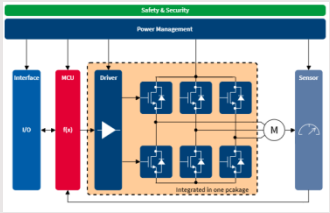
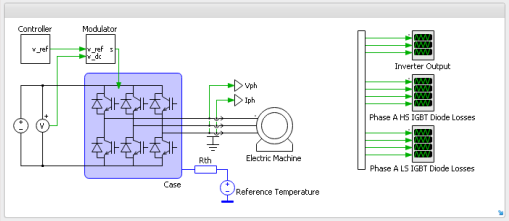


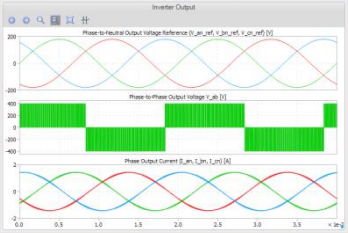


Use our Solution Finder

(e.g.: Motor Control, SMPS, LED Lighting, PoL)

How to check the Solution?





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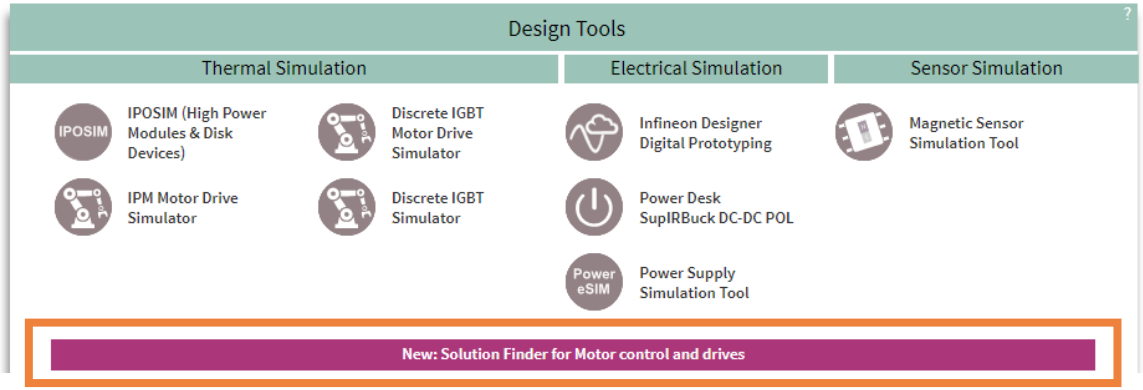
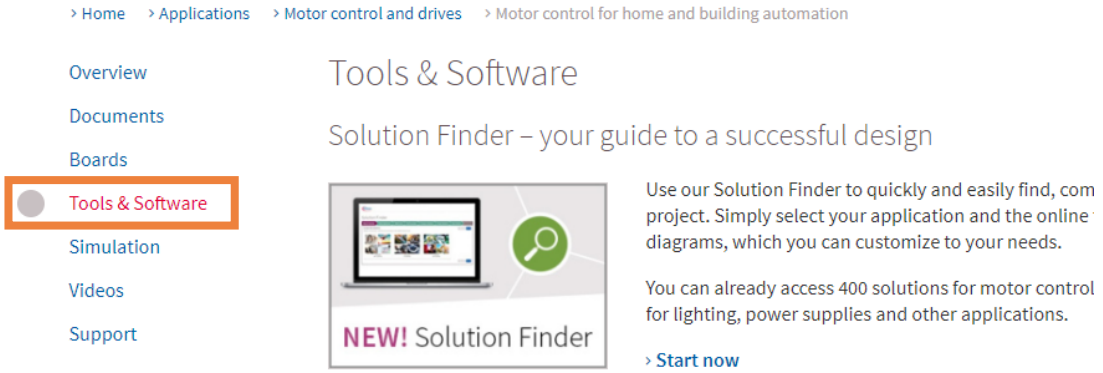
Solution Finder
Where to find?

- Direct link: www.infineon.com/solutionfinder
- Design Tools: www.infineon.com/tools

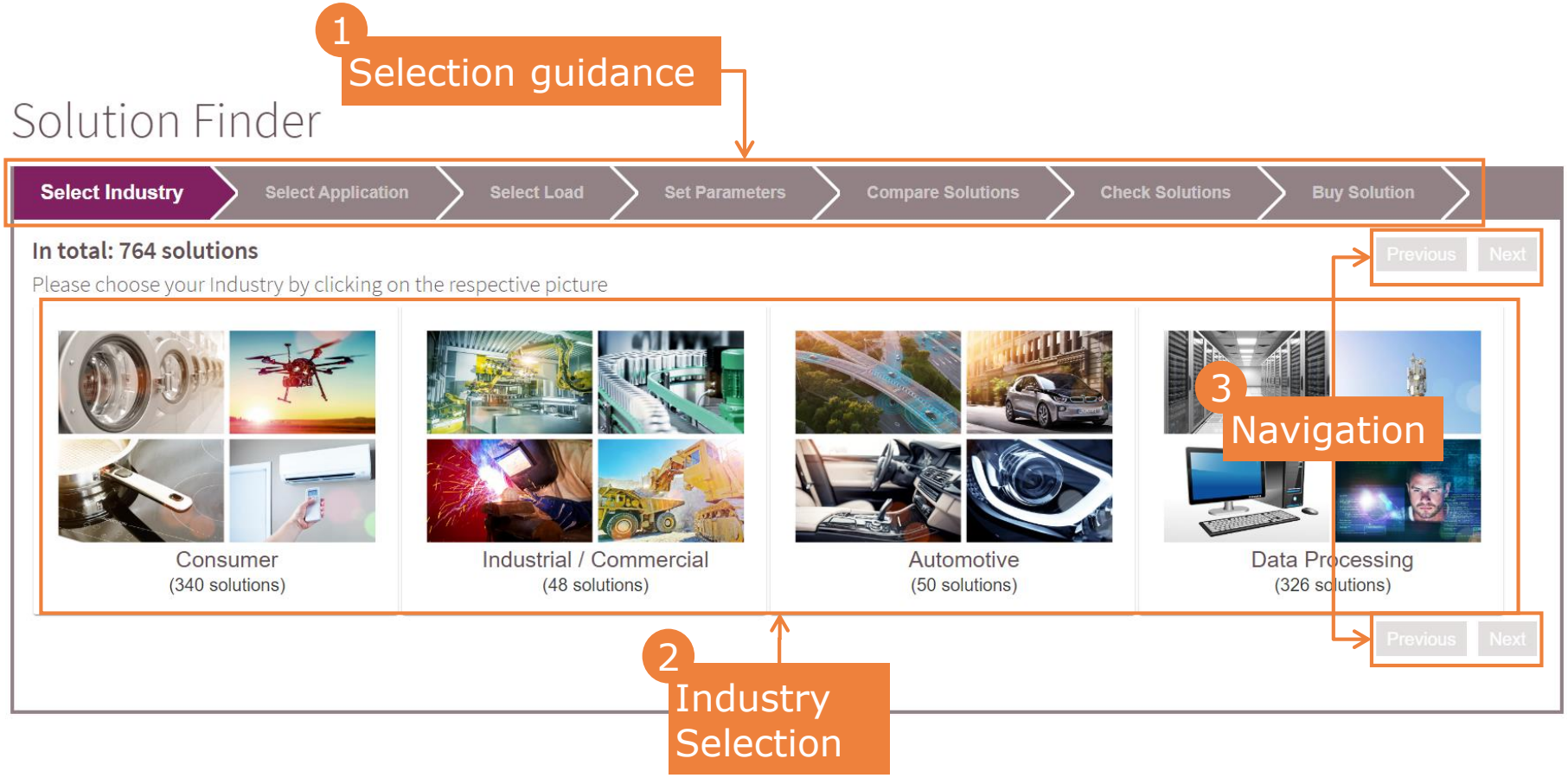


- Through Application Pages



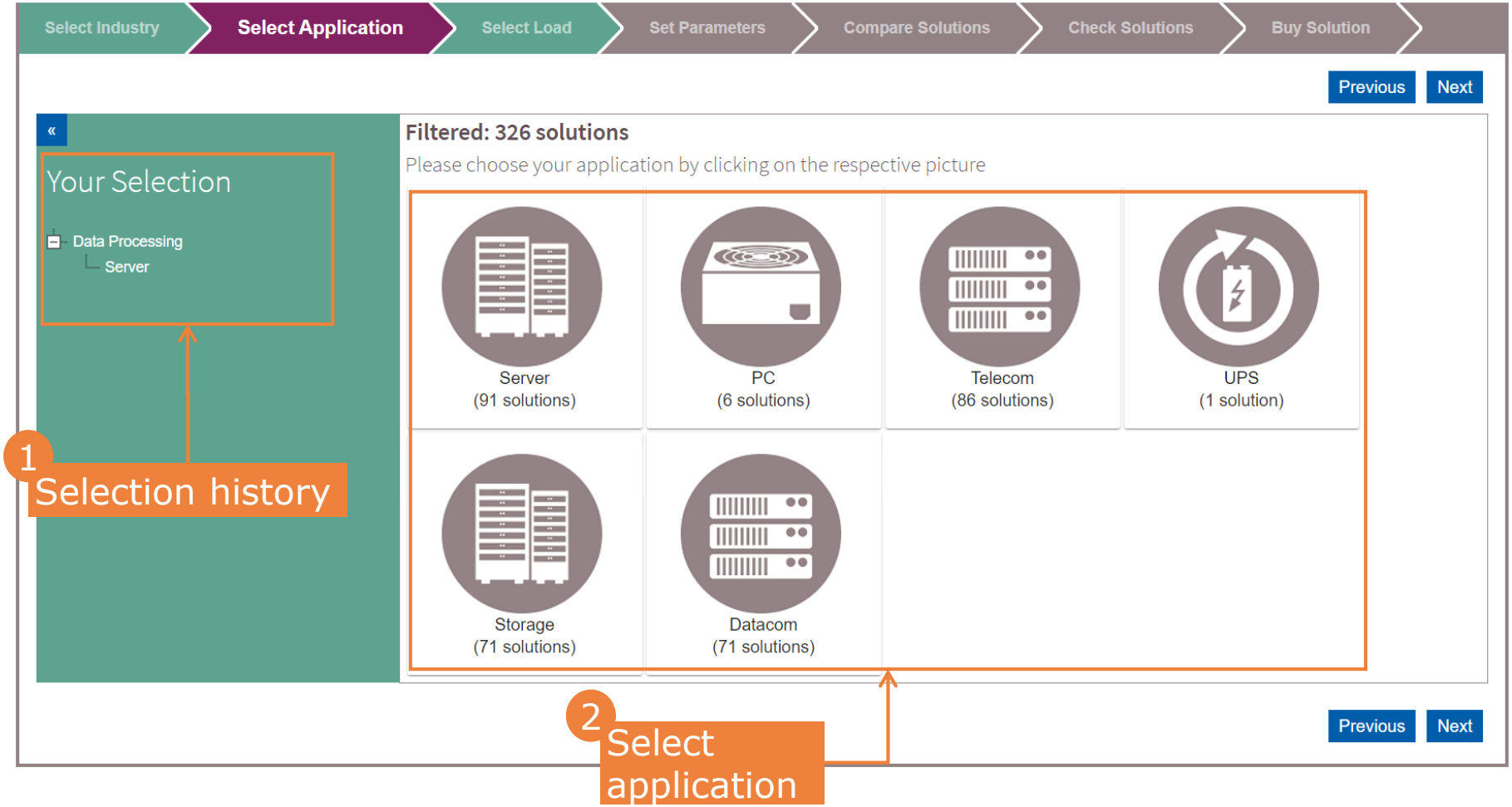
Solution Finder
Demo: Overview & Select Industry

› www.infineon.com/solutionfinder



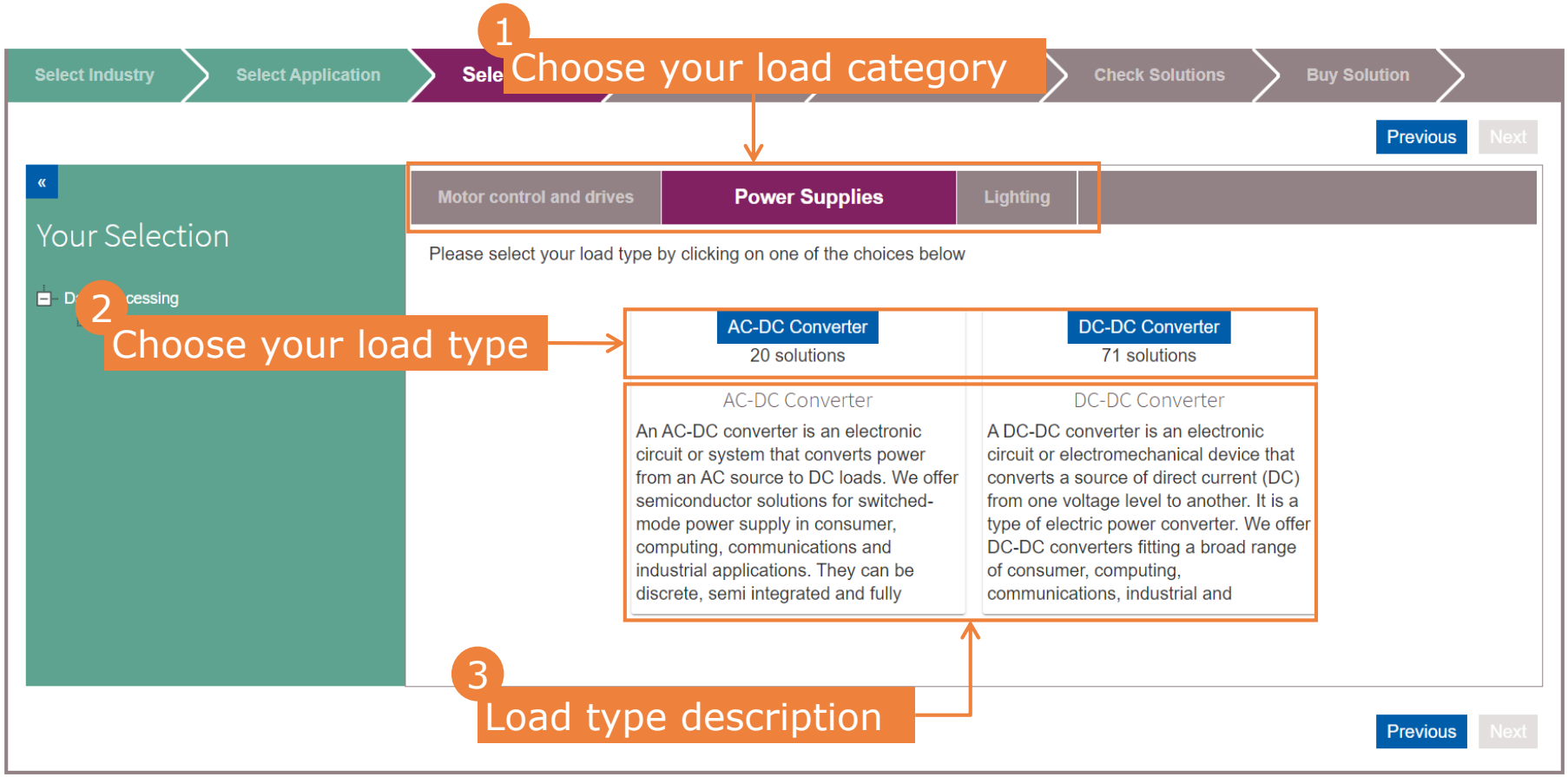
Solution Finder – Demo: Select Application

www.infineon.com/solutionfinder



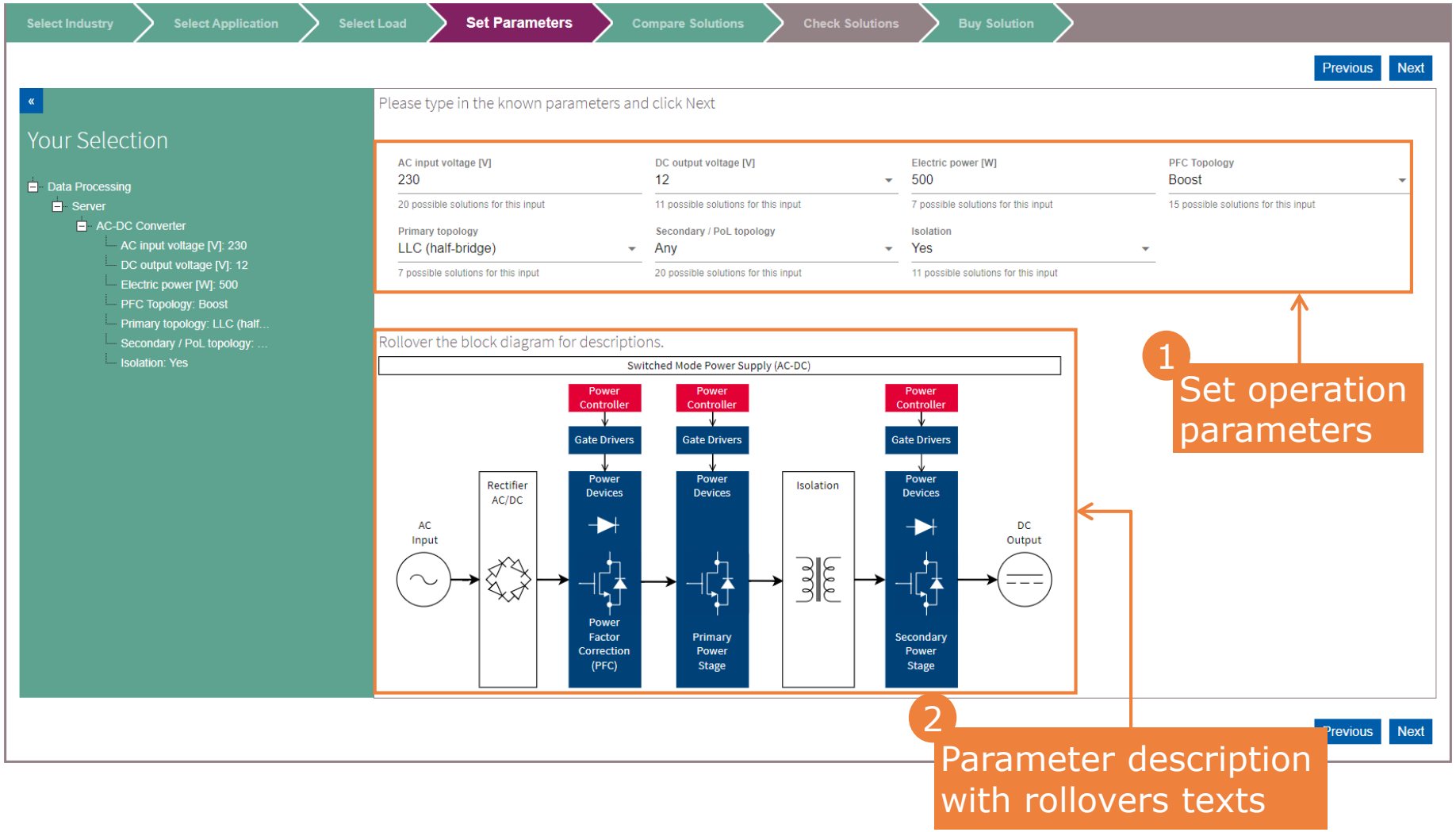
Solution Finder – Demo: Select Load

www.infineon.com/solutionfinder



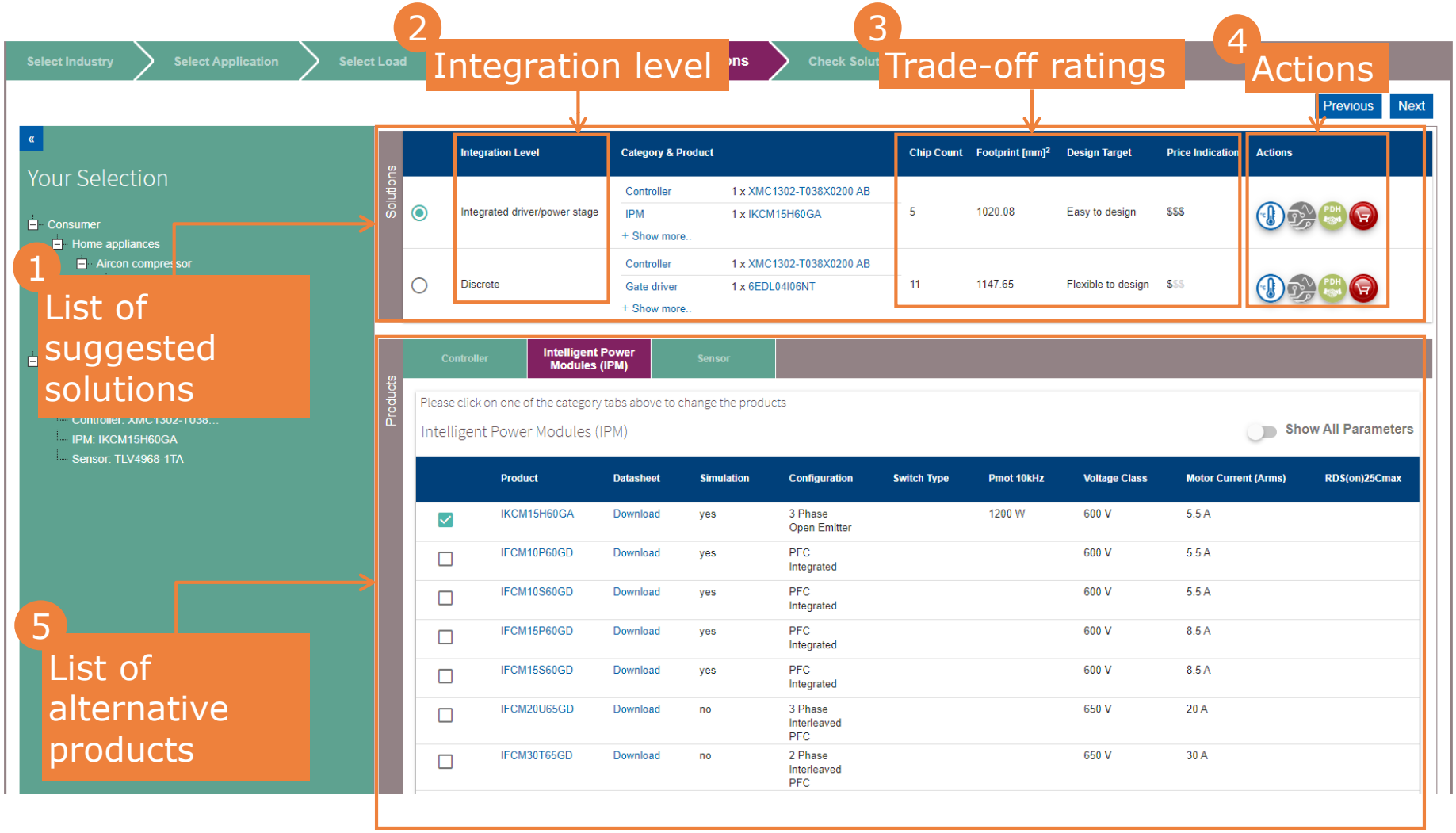
Solution Finder – Demo: Set Parameters

www.infineon.com/solutionfinder



Solution Finder – Demo: Compare Solutions

www.infineon.com/solutionfinder



Solution Finder – Demo: Check Solutions

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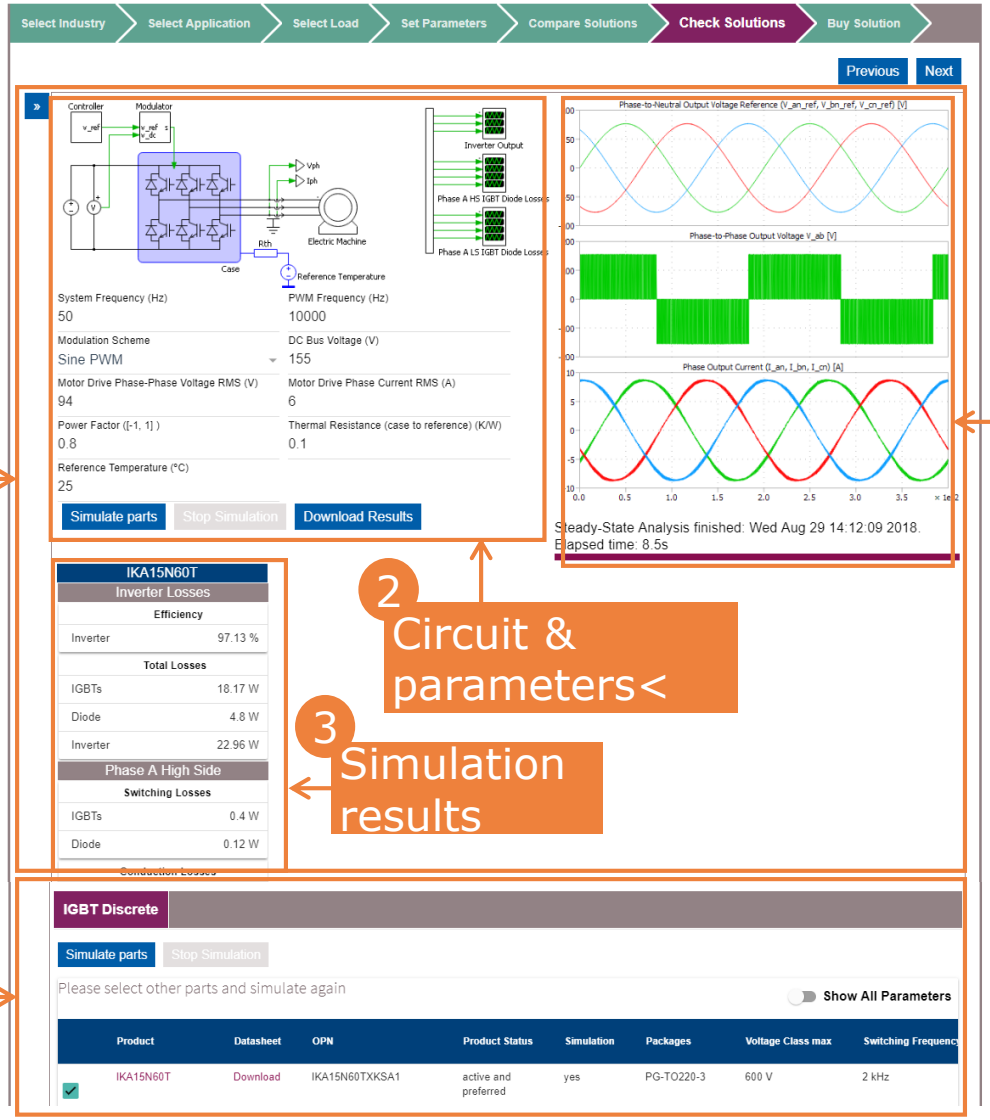


Solution Finder – Demo: Buy Solutions

www.infineon.com/solutionfinder

1 Selected solution

2 Actions to report, partner and buy

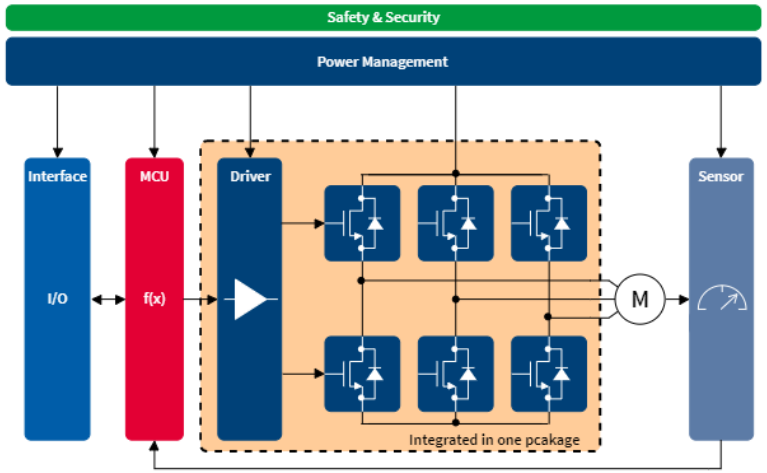
Select Load | Set Parameters | Compar

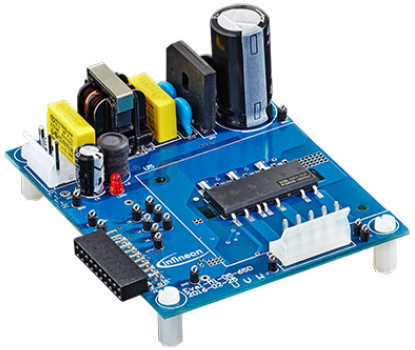
Previous | Next

Solution

Integration Level	Products	Chip Count	Footprint [mm²]	Design Target	Price	Action
Integrated driver/power stage	Controller:1 x IRMCK099M IPM:1 x IRSM505-065DA	2	373	Easy to design	$$$	Thermal | Electrical Partner Network | Buy

Rollover the block diagram for detailed product information and links.





Typical appearance

3 Solution architecture

4 Evaluation board (detailed BOM)

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Coming soon

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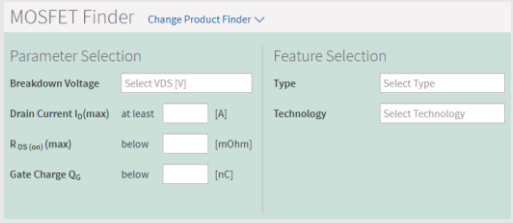

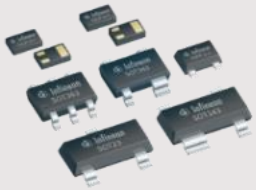

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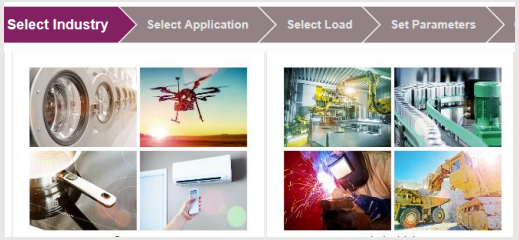

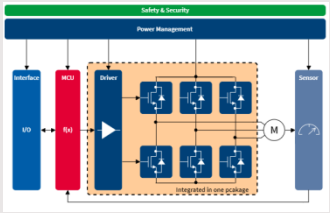

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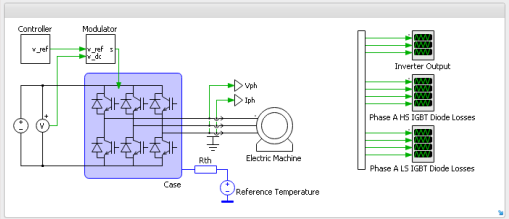

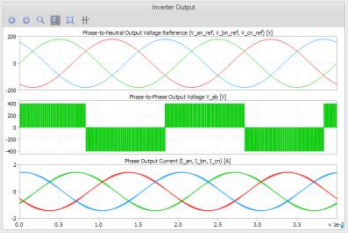

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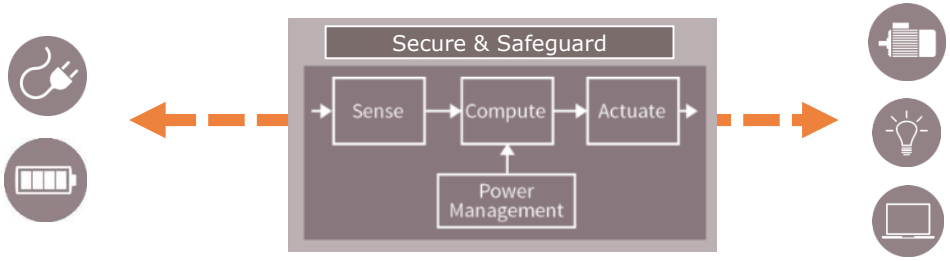
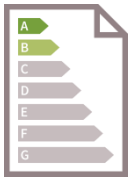
Online Simulation provides tailored simulation engines for different customer use cases

Select Product Block-Diagram





✓ Easy
✓ Green
✓ Safe

Power	Mixed-signal & Control	RF	Sensor

Check

✓ What is the overall efficiency? ✓ Does the design not overheat?	✓ Is my design stable? ✓ Does my software run w/o errors?	✓ Does the magnet switch at the right position?
Thermal design	Electrical design Software design	Magnetic design

Design Tool

Online	IPOSIM (IGBT Modules & Bipolar Disk) Motor Simulator (IGBT, IPM) PowerEsim (SMPS)	Infineon Designer (Mosfet, Driver, MCU) PowerDesk (PoL)	Sensor Tools (3D, Angle & Hall sensors)
Offline	plecs, MATLAB SIMULINK EasyAPE PRO (ATV Body Power)	TINA IfxSPICE, SIMetrix, PSpice, LTSpice	python™

IPOSIM: Infineon Power Simulation Tool Landing Page: www.infineon.com/iposim

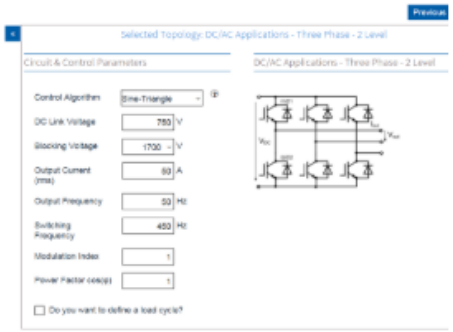
1. myInfineon Registration
   - Customers: need new account since old Transim accounts will not be transferred
2. Getting Started
   - Documents
   - Videos
3. Steps by step guide with hyperlinks

IPOSIM Step by Step Guide
Direct Link: https://iposim.infineon.com

1 Step 1: select your topology

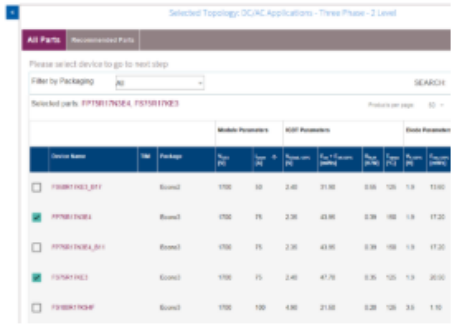
Here you select your target application and preferred circuit topology

2 Step 2: define your input



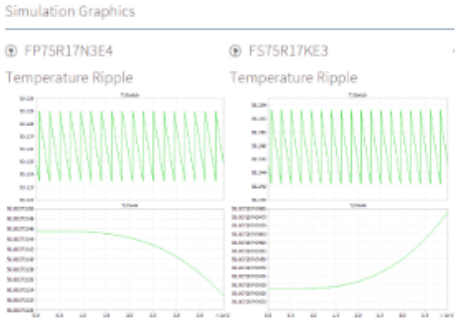
In this step you define the input requirements for steady-state or load cycle simulation

3 Step 3: select your device



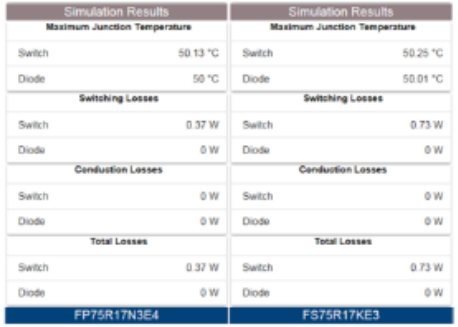
Based on your input the tool will provide the best suited products in a tabular form

4 Step 4: simulate thermally



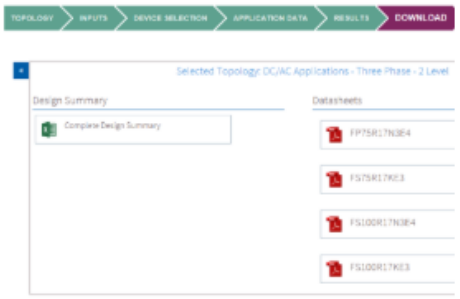
Check the simulation results. Click on the diagrams to zoom in and assess the details

5 Step 5: compare results



Here you compare the losses and calculated temperature of the selected products

6 Step 6: download results



Download your simulation results in a easy to re-use tabular

Infineon Designer - Online Digital Prototyping Engine (www.infineon.com/ifxdesigner)

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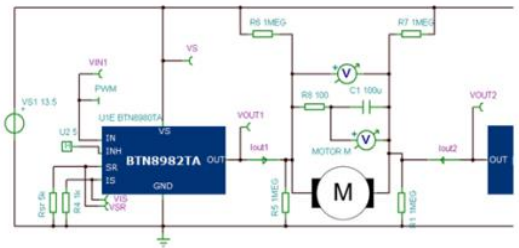
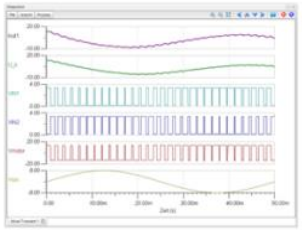
Cloud
PC, Mac, Tablet, Smartphone
Available in 22 languages





Great user experience

- Full-featured circuit editor
- Multiple platforms (IE, Safari, Chrome, Firefox, etc.)
- No installation
- Unlimited licenses
- Fast simulation due powerful server configuration

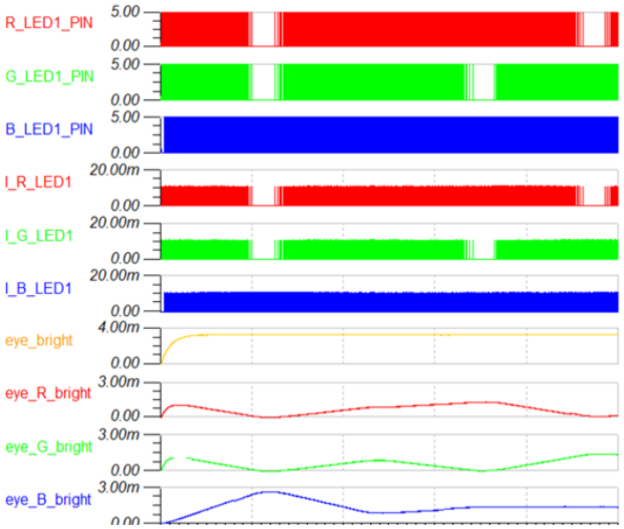
Features

- Accurate transient and system efficiency simulation of products and applications
- Fast parameter configuration with interpreter window
- Digital/analog co-simulation
- 430+ application circuits (lighting, power supplies, motor control, computing PoL)

Infineon Designer Use Cases: Online Analog-Digital Co-Simulation with Code Debugger

1 **Select [XMC1200 circuit]**

Example circuit: [32-bit MCU XMC1200 controlling the RGB color walk with constant brightness]



3 **Co-simulate MCU software with analog circuit**

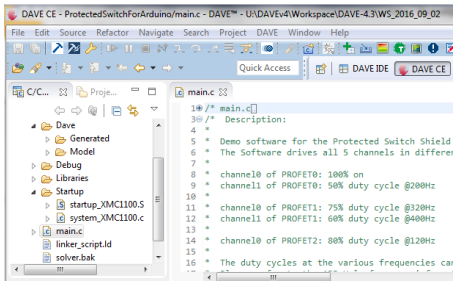
2 **Choose simulation mode**

Infineon Designer Use Cases: Digital Twin
24V Arduino Shield PROFET™+ 24V Family

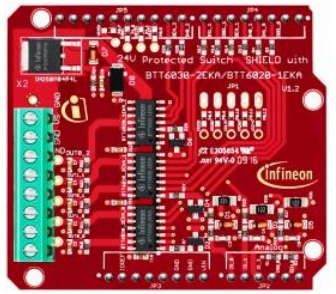
- Unique Value Proposition
  - Customer explore the board by "click & play", w/o reading through manuals & datasheets
  - Customer adapt the soft board (hardware & software) to his own application needs prior to Buy Online

- Full Hardware & Software Design
  - HW: Arduino Shield
  - SW: DAVE
  - Online Circuit: TINA SPICE
  - Engine: DesignSoft
  - Hosting: Infineon & DesignSoft

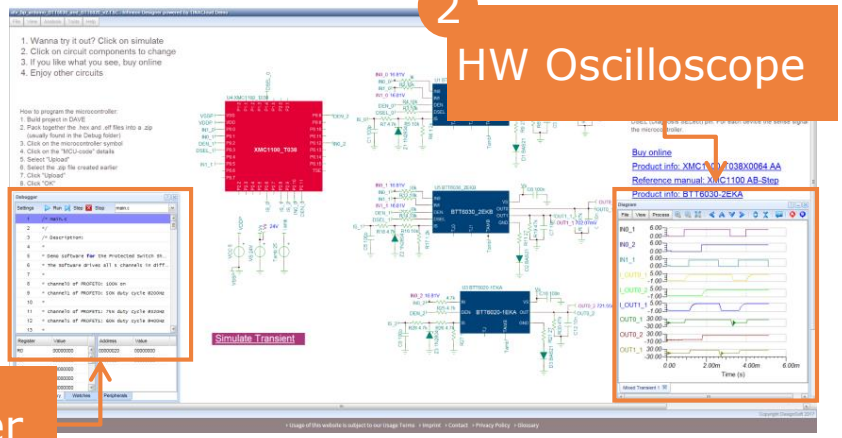
Software



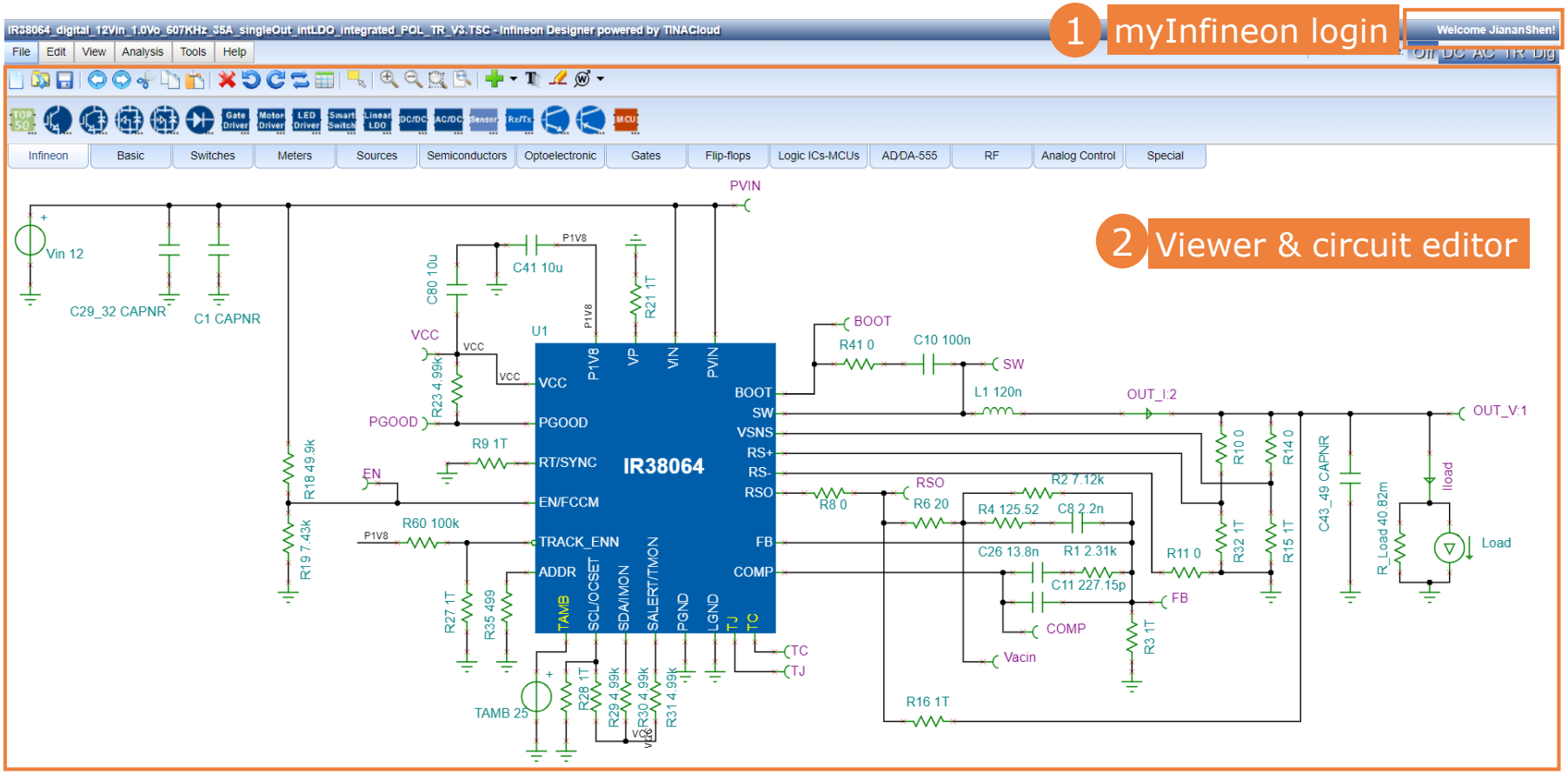
Hardware



Online Virtualization

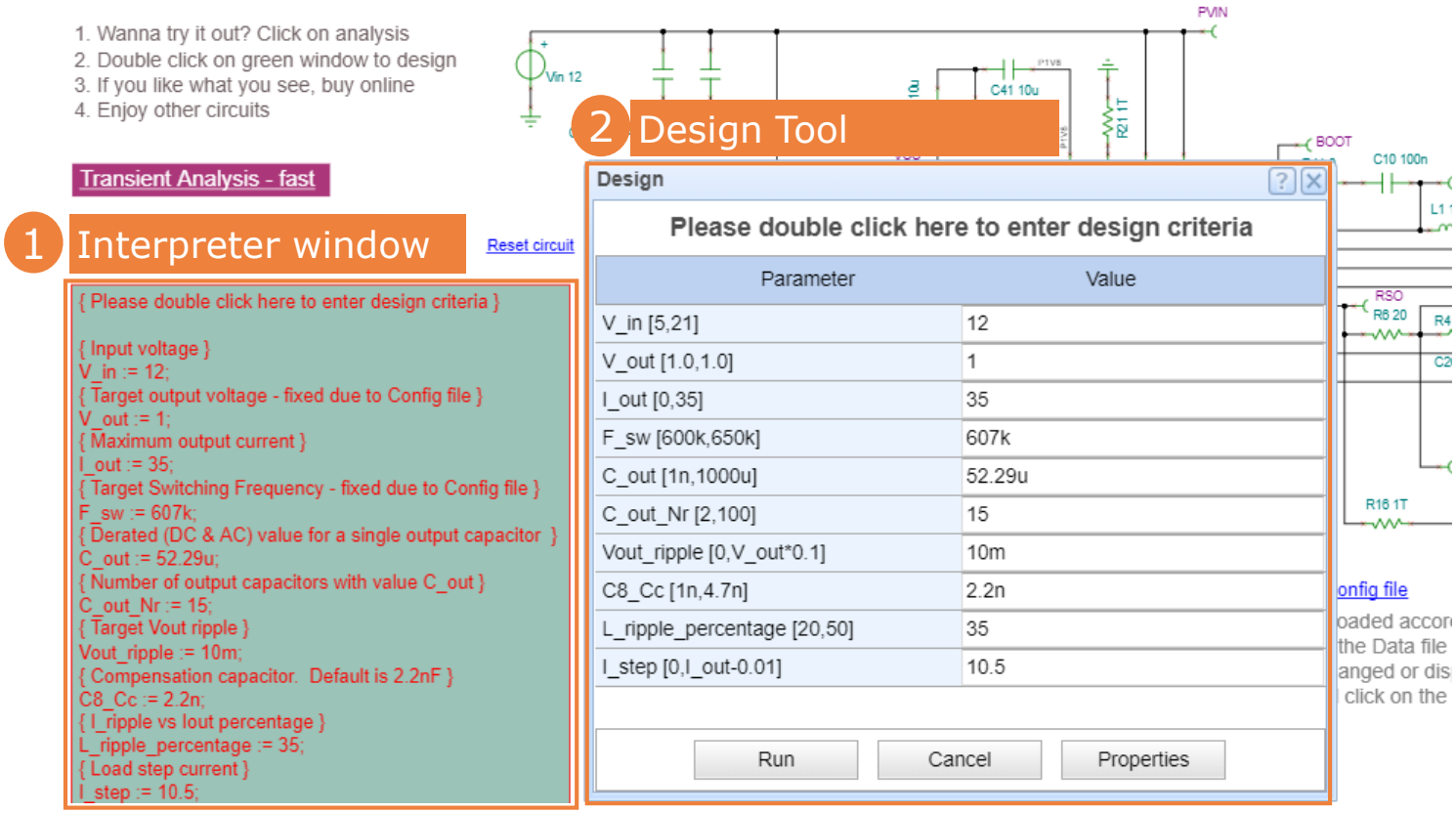


Infineon Designer Highlights: Full-featured Circuit Editor



- Login with myInfineon account
- Create your circuit from scratch or based on existing Infineon example circuits

Infineon Designer Highlights: Design Tool - Parameter Setting & Calculation



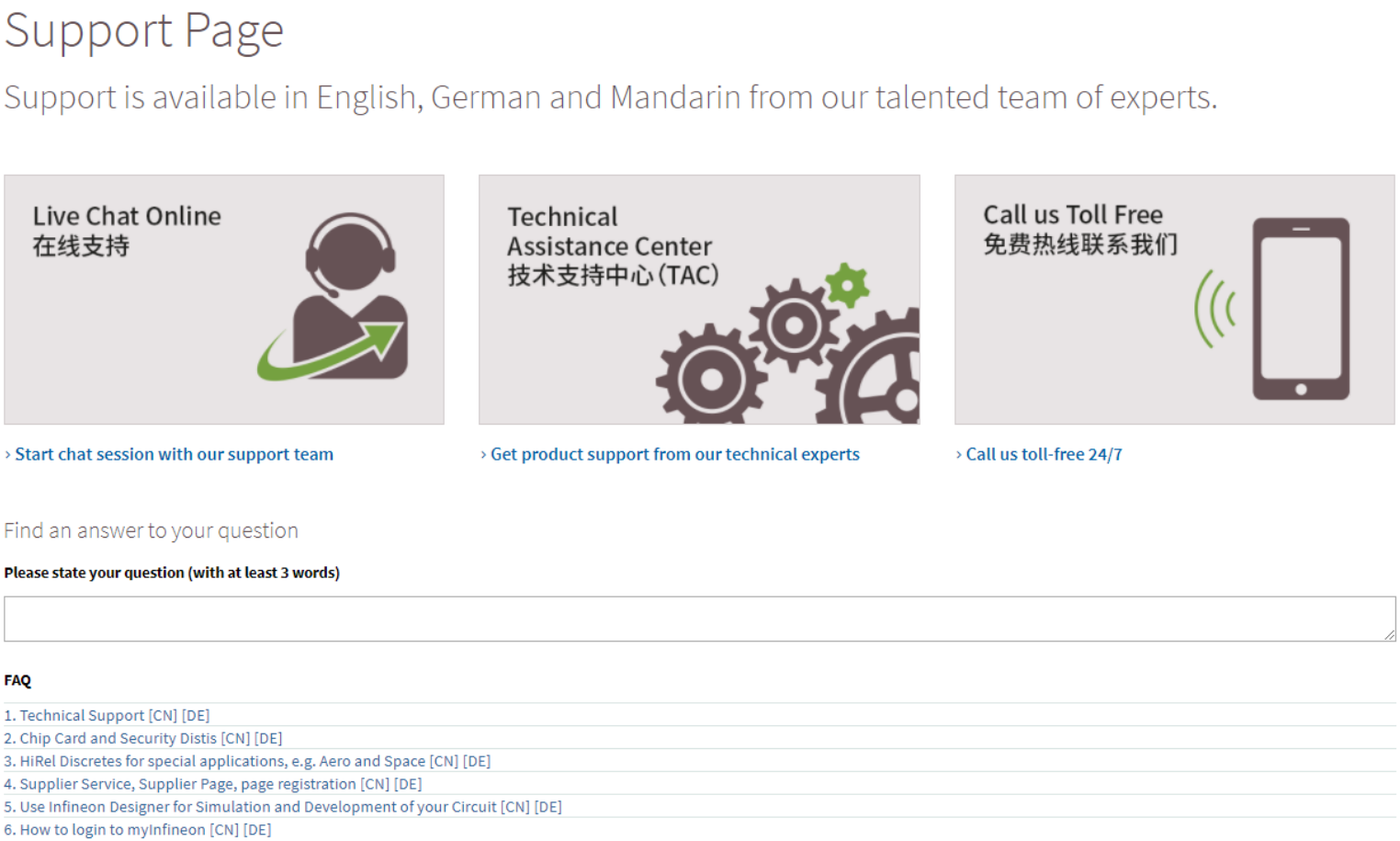
- Design Tool
  - Easier parameter setting
  - Quicker calculation & circuit configuration with defined formulas

Agenda

1. Online Engineering Tools Overview
2. How to select a product? Use our Product Finders!
3. How to select a solution? Use our Solution Finder!
4. How to check a solution? Use our Design Tools!
5. How to get support? Use www.infineon.com/support

Technical Support

› Please visit www.infineon.com/support



Online Tools Overview
www.infineon.com/tools

Aware (Interest) | **Select** (Learn) | **Check** (Evaluate) | **Buy Sample** (Test) | Design-in (Justify) | Purchase Volume (Use) | After Sales (Get help)

Online Tools: focus on learning & selection — www.infineon.com/tools

Infineon Toolbox: focus on Design-in — coming soon

How to select a Product ?

- 16 Product Finders
- Based on parametric search
- Suitable for known product type and parameters

Product Finders (MOSFET, IGBT, Gate Driver, etc.)

How to select a Solution?

- Solution Finder
- Based on system block diagrams
- Provide system understanding of Infineon products
- Easy to use
- Combine parametric search and system simulation

Use our Solution Finder (Motor Control, Power Supplies, etc.)

How to check the Solution?

- Infineon Designer Spice Simulation:
  - ✓ Full-featured circuit editor
  - ✓ Transient and steady state analysis
  - ✓ 430+ application circuits
- IPOSIM/PLECS Thermal Simulation:
  - ✓ quick and easy
  - ✓ thermal, efficiency and loss calculation

Simulation Tools (Infineon Designer, IPOSIM, PLECS)

Resource List https://www.infineon.com/tools

Finder Tools

- Infineon Solution Finder
- Infineon Product Finder
- Infineon Evaluation Board Finder
- Infineon Simulation Models

Hardware Simulation Tools

Thermal design

- Infineon IPOSIM Power Simulation for Power Modules and Disk Devices
- Infineon Power Simulation for Integrated Power Modules (IPM) powered by PLECS
- Infineon Power Simulation for discrete IGBTs powered by PLECS

Electrical & software design

- Infineon Designer powered by TINACloud
- PowerEsim Simulation for Switched-Mode Power Supply (SMPS)

Magnetic design

- Infineon Magnetic Sensor Design Tools

Software Development Tools

- DAVE™ Development Platform for XMC™ 32-bit Industrial Microcontroller based on ARM® Cortex®-M
- TriCore™ Development Tools for AURIX™ 32-bit Automotive Microcontroller based on TriCore™

Infineon Support & Distribution Partners

- Technical Assistance Center
- Forums
- Newsletter
- Orderable Part Number (OPN) Finder
- Where to Buy your Products
- Contact & Locations

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