

Be smart. Prototype online.



# Getting Started with Infineon's Online Engineering Tools

[www.infineon.com/tools](http://www.infineon.com/tools)

Digital Demand Generation  
Online Engineering & Tools  
2019-Jan-07



# 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](http://www.infineon.com/support)

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# Online Tools Overview

## [www.infineon.com/tools](http://www.infineon.com/tools)



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](http://www.infineon.com/tools)

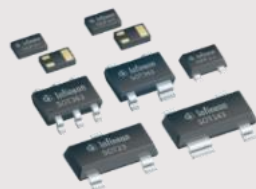
Infineon Toolbox: focus on Design-in

Coming soon

## How to select a Product?

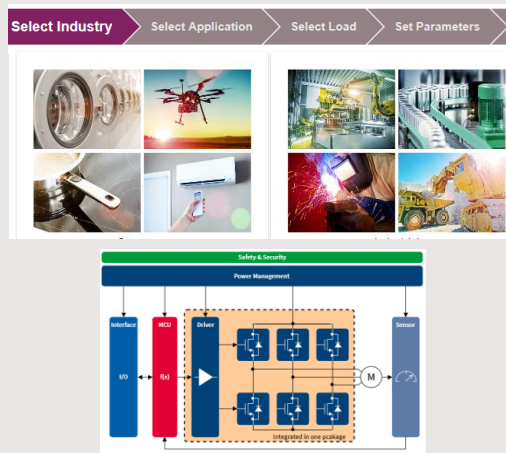
MOSFET Finder [Change Product Finder](#)

Parameter Selection		Feature Selection	
Breakdown Voltage	Select VDS [V]	Type	Select Type
Drain Current $I_D$ (max)	at least [A]	Technology	Select Technology
$R_{DS(on)}$ (max)	below [mOhm]		
Gate Charge $Q_G$	below [nC]		



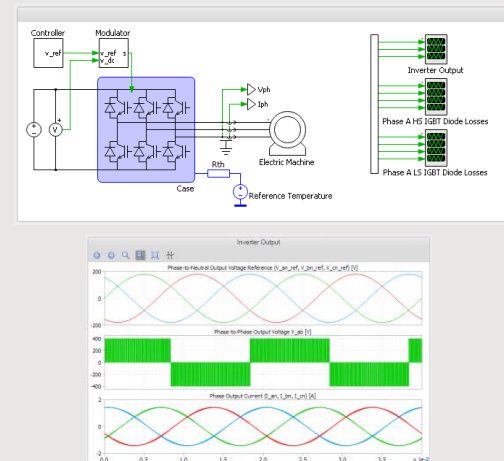
Product Finders (e.g., [IGBT](#), [MOSFET](#), [IPM](#), [Gate Driver](#), [Simulation Models](#), etc.)

## How to select a Solution?



Use our [Solution Finder](#)  
(e.g.: Motor Control, SMPS,  
LED Lighting, PoL)

## How to check the Solution?



Simulation Tools (e.g.,  
[IPOSIM](#), [Infineon Designer](#),  
[XENSIV](#))

Download: datasheet, simulation model, BOM, circuit schematic, evaluation board

# Online Tools Overview

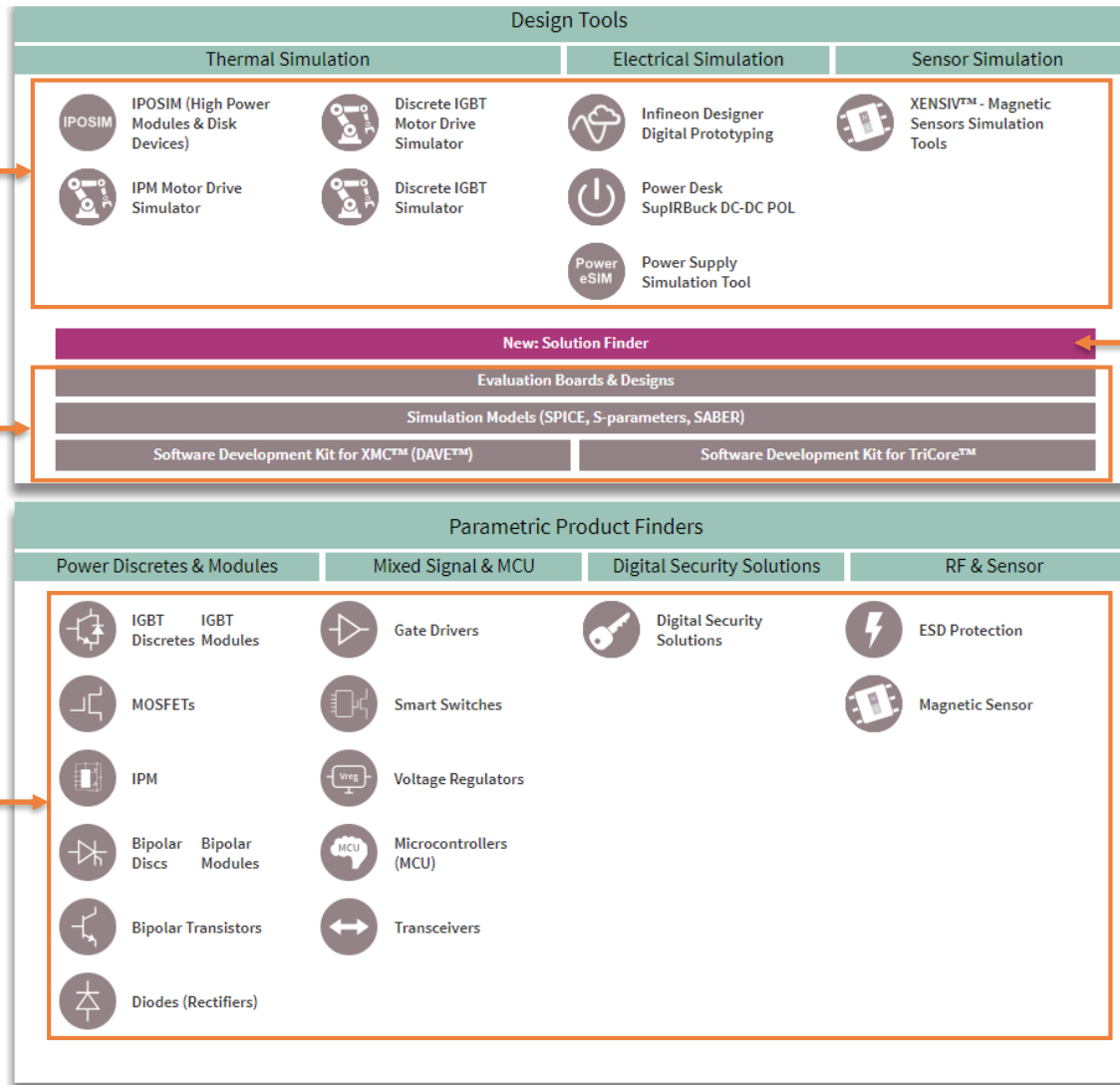
## [www.infineon.com/tools](http://www.infineon.com/tools)



Hardware  
Design

Software  
Design

16 Product  
Finders



Solution Finder

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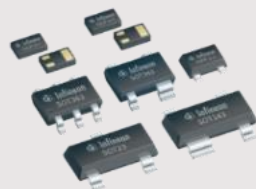
Infineon Toolbox: focus on Design-in

Coming soon

### How to select a Product?

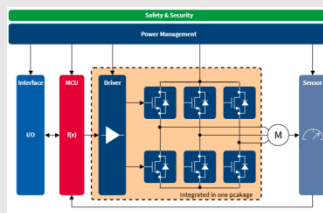
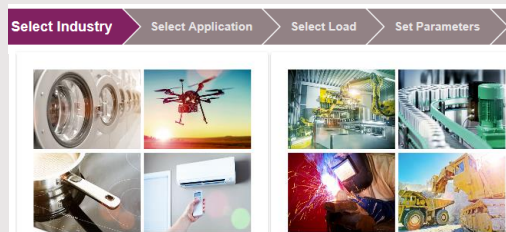
MOSFET Finder [Change Product Finder](#)

Parameter Selection		Feature Selection	
Breakdown Voltage	Select VDS [V]	Type	Select Type
Drain Current $I_D$ (max)	at least [A]	Technology	Select Technology
$R_{DS(on)}$ (max)	below [mOhm]		
Gate Charge $Q_G$	below [nC]		



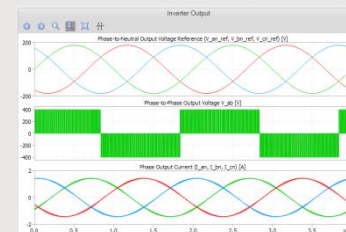
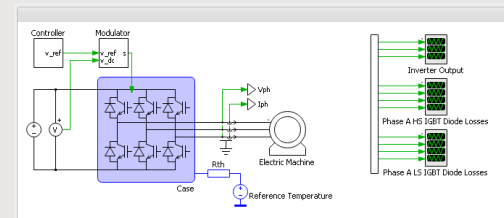
Product Finders (e.g., [IGBT](#), [MOSFET](#), [IPM](#), [Gate Driver](#), [Simulation Models](#), etc.)

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Use our [Solution Finder](#)  
(e.g.: Motor Control, SMPS,  
LED Lighting, PoL)

### How to check the Solution?

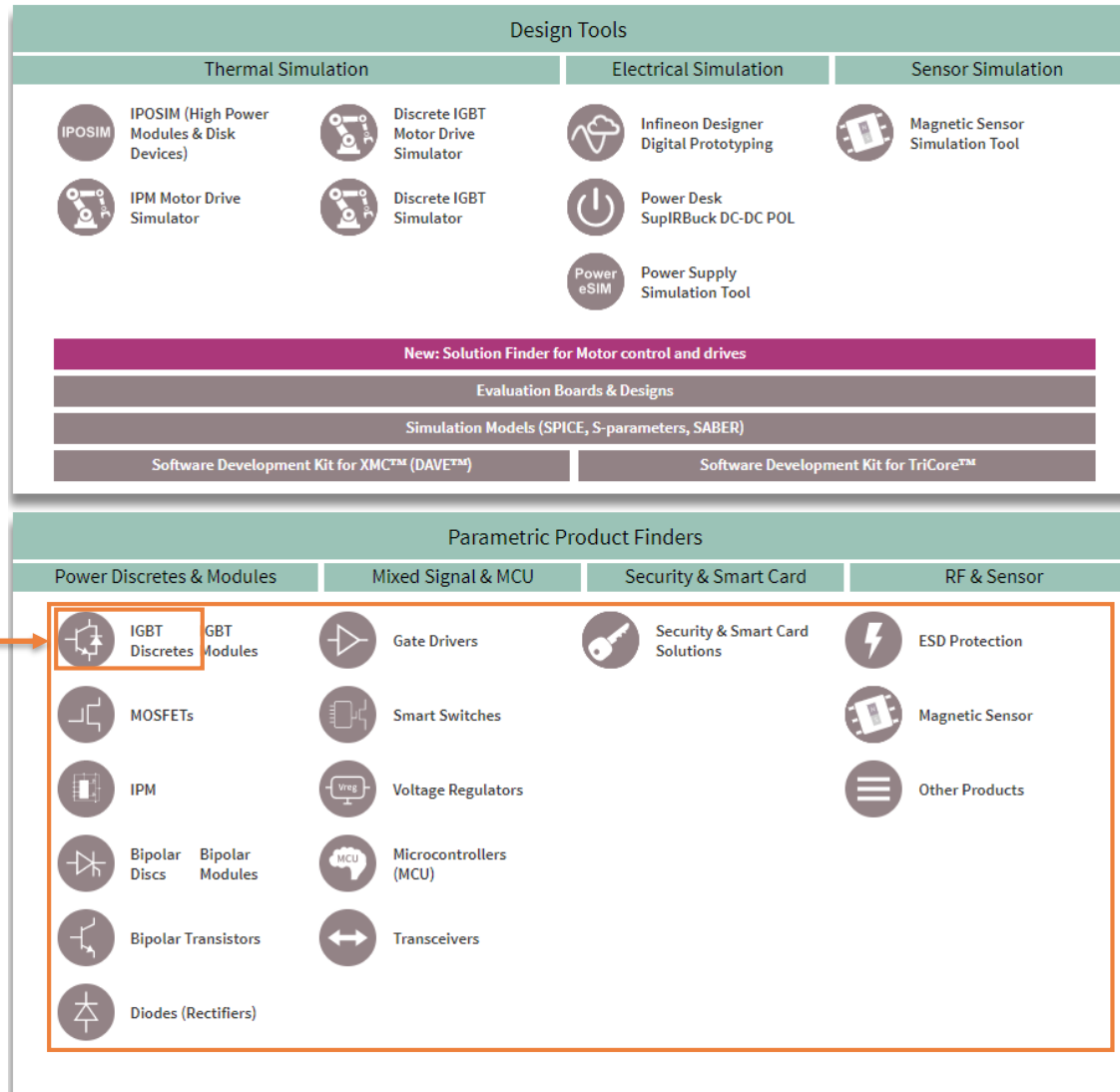


Simulation Tools (e.g., [IPOSIM](#), [Infineon Designer](#), [XENSIV](#))

Download: datasheet, simulation model, BOM, circuit schematic, evaluation board

# Product Finder Overview

[www.infineon.com/tools](http://www.infineon.com/tools)



IGBT  
Discretes  
Finder

# Parametric Finder Example

## IGBT Discrete Finder

### 1 Other Product Finders

Change Product Finder ▾

▸ Cross Reference

#### Parameter Selection

Voltage Class

Current  $I_C$ (max) at least  [A]

Frequency Range  -  [kHz]

Short Circuit Capability

#### Feature Selection

☒ Integrated Diode  
☐ Soft Switching

Technology

Applications

#### Availability

☐ Automotive ☒ Industrial ☐ Any

Package

Product Status

### 2 Select IGBT parameters

### 3 IGBT features

### 4 Availability & package

Configure table

Compare

Share

Download

73 Results

Product	OPN	Product Status	Order online	Package	Online Simulation	Voltage Class max	Driver Selection
> IHW30N60T	IHW30N60TFKSA1	active	<a href="#">Buy Online</a>	TO-247		600 V	<a href="#">Select Driver</a>
> IKW50N60H3	IKW50N60H3FKSA1	active and preferred	<a href="#">Buy Online</a>	TO-247	<a href="#">Simulate Online</a>		
> IKV			<a href="#">Buy Online</a>	TO-247	<a href="#">Simulate Online</a>	600 V	<a href="#">Select Driver</a>
> IKQ100N60T	IKQ100N60TXKSA1	active and preferred	<a href="#">Buy Online</a>	TO-247PLUS-3	<a href="#">Simulate Online</a>	600 V	<a href="#">Select Driver</a>

### 5 Compare selected products

### 6 Start simulation

### 7 Select Driver

# Compare Selected Products

## show differences

### Product comparison

Highlighted differences

1

### Product 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	<a href="#">Buy Online</a>	<a href="#">Buy Online</a>	<a href="#">Buy Online</a>	<a href="#">Buy Online</a>
Package	TO-247PLUS-3	PG-TO247-3-AI	TO-247	TO-247
Online Simulation	<a href="#">Simulate Online</a>		<a href="#">Simulate Online</a>	<a href="#">Simulate Online</a>
Voltage Class max	600 V	600 V	600 V	600 V
Driver Selection	<a href="#">Select Driver</a>		<a href="#">Select Driver</a>	<a href="#">Select Driver</a>
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
$I_{Cpul\Delta}$ max	400 A	150 A	90 A	200 A
$t_{SC}$		5 $\mu$ s	5 $\mu$ s	5 $\mu$ s

# Simulate Products Online with PLECS

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

Discrete IGBT Motor Drive Simulator

A three-phase motor drive inverter system is implemented to simulate the power loss and

- ▶ Select Part(s); press and hold Ctrl/Strg to select multiple
- ▶ Click on 'Get result' to view Simulation results
- ▶ Want more variations? Change circuit configuration
- ▶ Click on 'Hold result' to keep trace & compare to other Simulation results

1 Set application parameters

2 Select product

3 Start simulation

4 Display simulation results

Need support?  
Technical Assistance

Controller

Modulator

v\_ref

v\_ref

v\_dc

v\_ref

v\_dc

Vph

Iph

Inverter Output

Phase A HS IGBT Diode Losses

Phase A LS IGBT Diode Losses

Electric Machine

Rth

System Frequency: 50 Hz

PWM Frequency: 10000 Hz

Modulation Scheme: Sine PWM

DC Bus Voltage: 400 V

Motor Drive Phase-Phase Voltage RMS: 220 V

Motor Drive Phase Current RMS: 1 A

Power Factor: 0.8 [-1, 1]

Thermal Resistance (case to reference): 0.1 K/W

Reference Temperature: 100 °C

Parts:

IKW50N60DTP

IKW50N60H3

IKW50N60T

IKW50N60TA

IKW50N65ES5

IKW50N65F5

IKW50N65H5

IKW60N60H3

Get result

Hold result

Analysis completed.

Phase-to-Neutral Output Voltage Reference (V\_an\_ref, V\_bn\_ref, V\_cn\_ref) [V]

Phase-to-Phase Output Voltage V\_ab [V]

Phase Output Current (I\_an, I\_bn, I\_cn) [A]

Inverter Losses

	IGBT Device	Total	Efficiency
GBTs	IKW30N60T	9.396 W	
Diodes	IKW30N60T	1.882 W	
Inverter	IKW30N60T	11.28 W	96.29 %

Phase A High Side Device Losses and Maximum Junction Temperatures

	IGBT Device	Switching	Conduction	Device maximum junction temperature
GBT	IKW30N60T	1.369 W	0.2027 W	103.1 °C
Diode	IKW30N60T	0.2615 W	0.05225 W	101.8 °C

Phase A Low Side Device Losses

	IGBT Device	Switching	Conduction
GBT	IKW30N60T	1.357 W	0.2027 W
Diode	IKW30N60T	0.2615 W	0.05224 W

# 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:

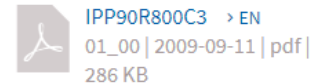
**900V CoolMOS™ C3** is Infineon's third series of CoolMOS™ with market entry in 2001. C3 is the "working horse" of the portfolio.

### Summary of Features:

- Low specific on-state resistance ( $R_{on} \cdot A$ )
- 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

The MOSFET Finder widget is a search tool for MOSFETs. It features a dropdown menu for 'Select Breakdown Voltage' with '1 selected: 100.0 V'. Below this are two input fields: 'I<sub>D</sub> (max) ≥ 5 A' and 'R<sub>DS(on)</sub> (max) < 100 mΩ'. There are three radio buttons for 'ATV', 'Industrial' (selected), and 'Any'. At the bottom are 'Reset' and 'Find >' buttons.

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Buy Sample  
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Design-in  
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(Use)

After Sales  
(Get help)



7 minutes

Infineon Toolbox: focus on Design-in

Coming soon

[www.infineon.com/tools](http://www.infineon.com/tools)

### How to select a Product?

MOSFET Finder [Change Product Finder](#)

Parameter Selection

Breakdown Voltage:  Select VDS [V]

Drain Current  $I_D$  (max): at least  [A]

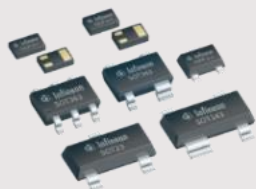
$R_{DS(on)}$  (max): below  [mOhm]

Gate Charge  $Q_G$ : below  [nC]

Feature Selection

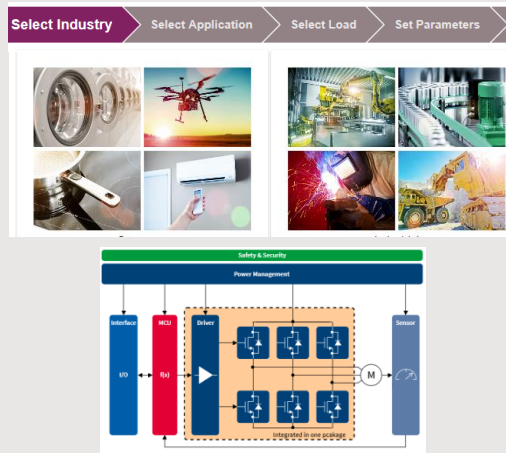
Type:  Select Type

Technology:  Select Technology



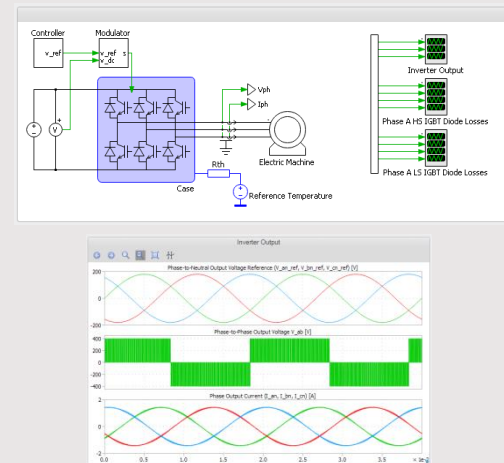
Product Finders (e.g., [IGBT](#), [MOSFET](#), [IPM](#), [Gate Driver](#), [Simulation Models](#), etc.)

### How to select a Solution?



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(e.g.: Motor Control, SMPS,  
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### How to check the Solution?



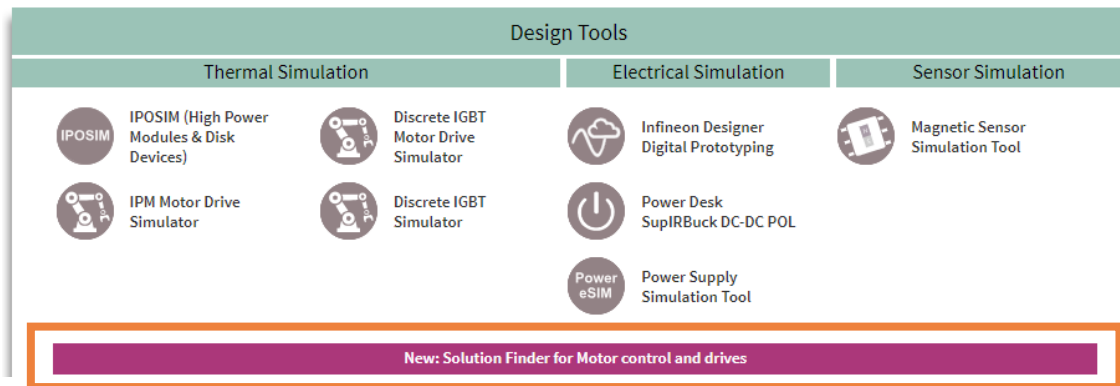
Simulation Tools (e.g., [IPOSIM](#), [Infineon Designer](#), [XENSIV](#))

Download: datasheet, simulation model, BOM, circuit schematic, evaluation board

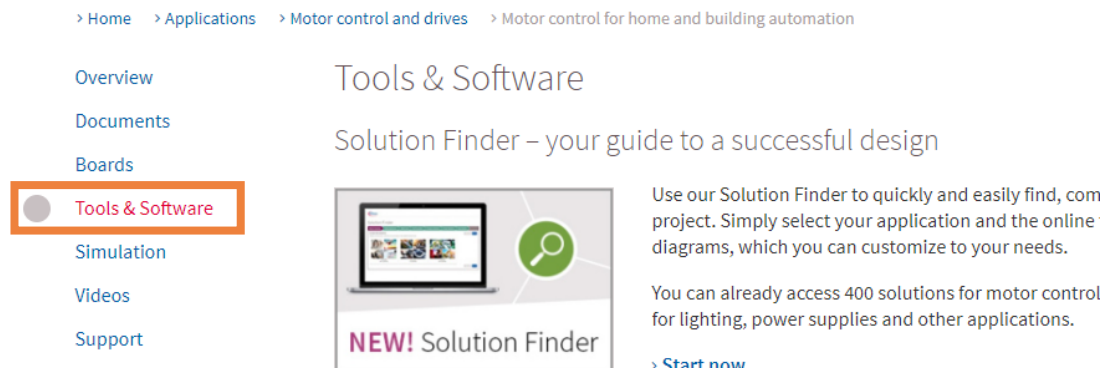
# Solution Finder

## Where to find?

- › Direct link: [www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)
- › Design Tools: [www.infineon.com/tools](http://www.infineon.com/tools)



- › Through Application Pages



# Solution Finder

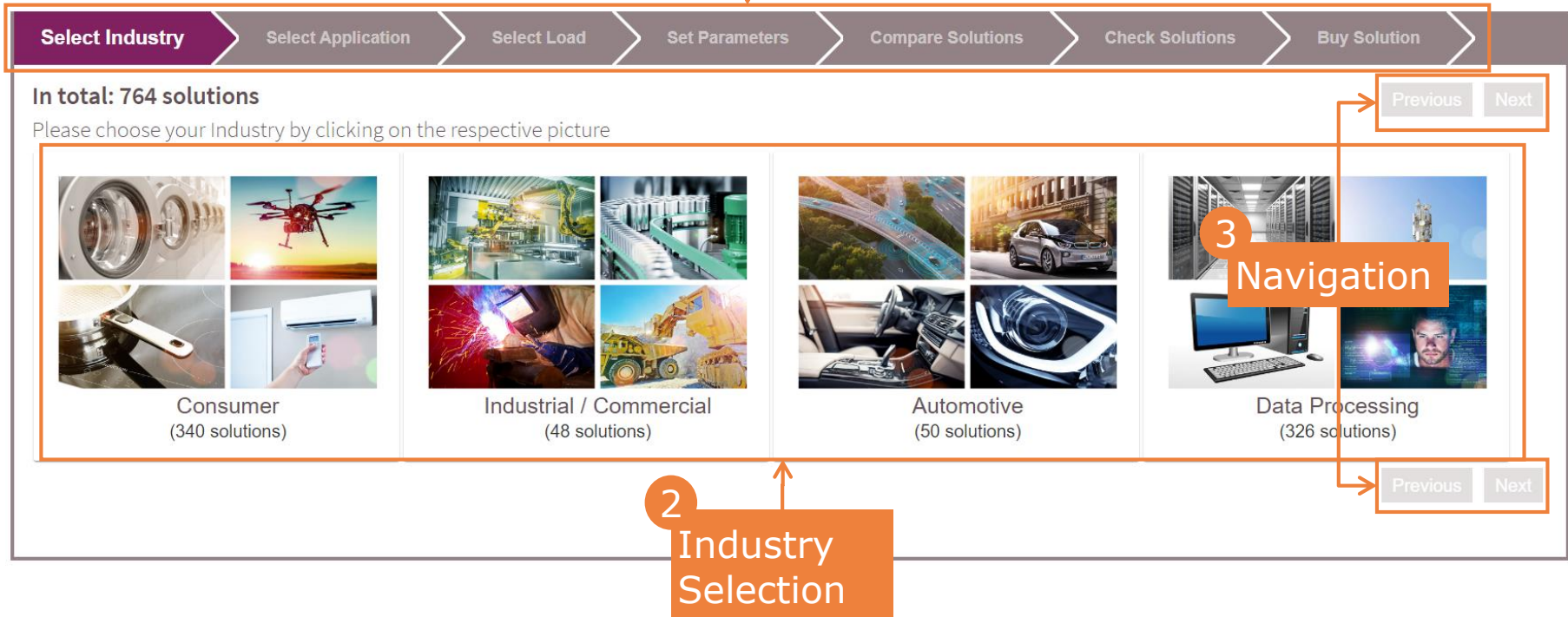
## Demo: Overview & Select Industry

› [www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)

1

Selection guidance

Solution Finder



The screenshot shows the Infineon Solution Finder interface. At the top, a navigation bar contains seven steps: **Select Industry** (highlighted in purple), **Select Application**, **Select Load**, **Set Parameters**, **Compare Solutions**, **Check Solutions**, and **Buy Solution**. Below the navigation bar, the text "In total: 764 solutions" is displayed, followed by the instruction "Please choose your Industry by clicking on the respective picture". The main content area features four industry categories, each with a 2x2 grid of representative images and a label with the number of solutions:

- Consumer** (340 solutions): Images include a washing machine, a drone, a coffee machine, and an air conditioner.
- Industrial / Commercial** (48 solutions): Images include a factory interior, a conveyor belt, a welding process, and a construction vehicle.
- Automotive** (50 solutions): Images include a car's interior dashboard, a car's exterior, and a car's headlight.
- Data Processing** (326 solutions): Images include a server room, a computer monitor, and a person's face with digital overlays.

Annotations on the screenshot include:

- An orange box labeled "1 Selection guidance" with an arrow pointing to the "Select Industry" step in the navigation bar.
- An orange box labeled "2 Industry Selection" with an arrow pointing to the industry category cards.
- An orange box labeled "3 Navigation" with arrows pointing to the "Previous" and "Next" buttons located at the top right and bottom right of the industry selection area.

# Solution Finder – Demo: Select Application

[www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)

Select Industry > **Select Application** > Select Load > Set Parameters > Compare Solutions > Check Solutions > Buy Solution

« Previous Next

«







**Your Selection**

- Data Processing
  - Server

1 Selection history

**Filtered: 326 solutions**

Please choose your application by clicking on the respective picture

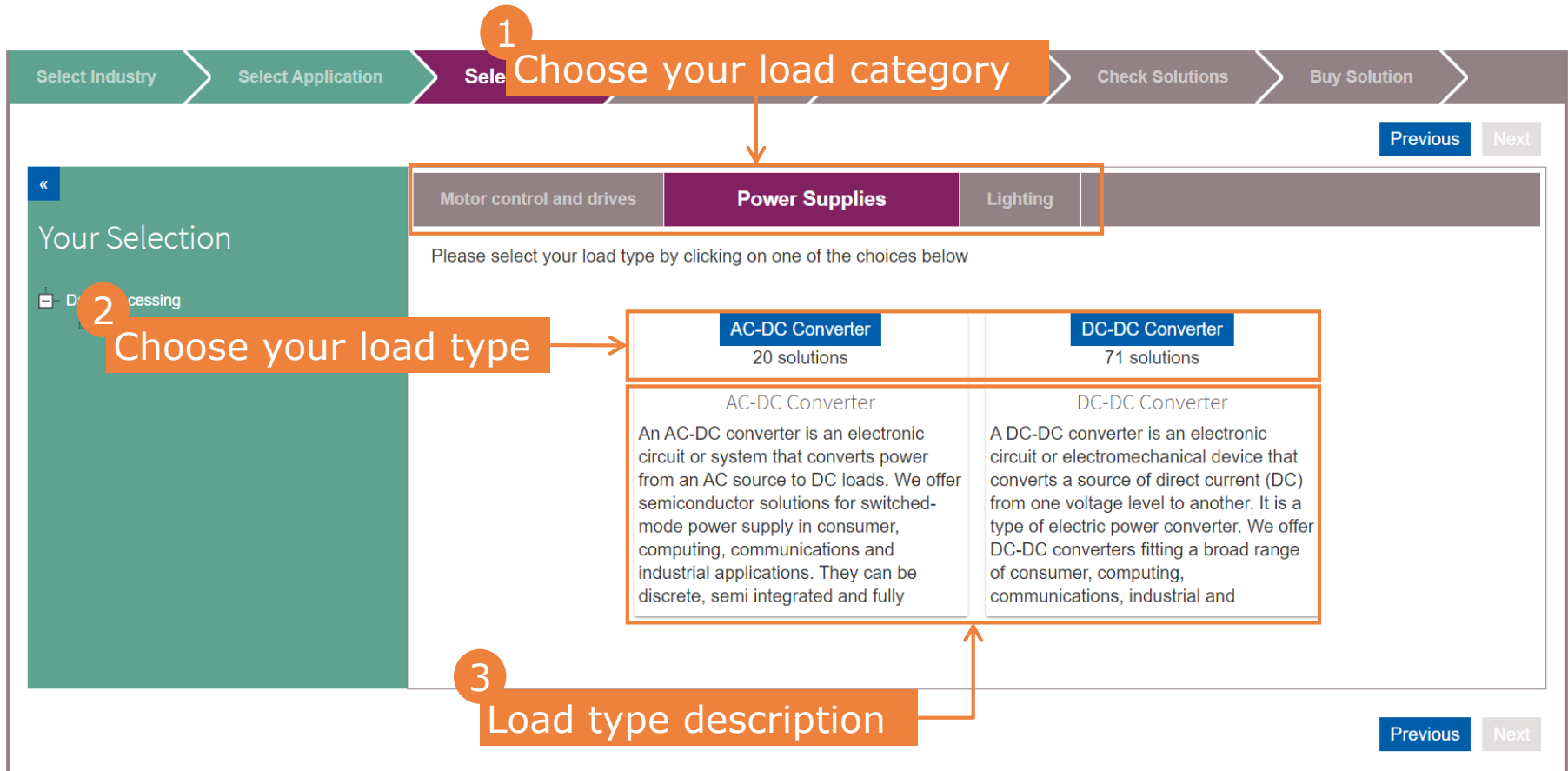
 Server (91 solutions)	 PC (6 solutions)	 Telecom (86 solutions)	 UPS (1 solution)
 Storage (71 solutions)	 Datacom (71 solutions)		

2 Select application

Previous Next

# Solution Finder – Demo: Select Load

[www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)



The screenshot shows the Infineon Solution Finder interface. At the top, a navigation bar contains the steps: Select Industry, Select Application, **Select Load**, Check Solutions, and Buy Solution. The **Select Load** step is highlighted with an orange box and labeled '1 Choose your load category'. Below this, a horizontal menu shows 'Motor control and drives', 'Power Supplies' (highlighted with an orange box), and 'Lighting'. To the left, a green sidebar titled 'Your Selection' shows a tree structure with 'DC-DC Converter' selected, labeled '2 Choose your load type'. The main content area displays two columns of results for 'Power Supplies'. The first column is for 'AC-DC Converter' (20 solutions) and the second is for 'DC-DC Converter' (71 solutions). Both columns have a description box below the header, labeled '3 Load type description'. The 'AC-DC Converter' description states: 'An AC-DC converter is an electronic circuit or system that converts power from an AC source to DC loads. We offer semiconductor solutions for switched-mode power supply in consumer, computing, communications and industrial applications. They can be discrete, semi integrated and fully'. The 'DC-DC Converter' description states: 'A DC-DC converter is an electronic circuit or electromechanical device that converts a source of direct current (DC) from one voltage level to another. It is a type of electric power converter. We offer DC-DC converters fitting a broad range of consumer, computing, communications, industrial and'. Navigation buttons 'Previous' and 'Next' are visible at the top right and bottom right of the main content area.

1 Choose your load category

2 Choose your load type

3 Load type description

# Solution Finder – Demo: Set Parameters

[www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)

Select Industry > Select Application > Select Load > **Set Parameters** > Compare Solutions > Check Solutions > Buy Solution

Previous Next

«

**Your Selection**

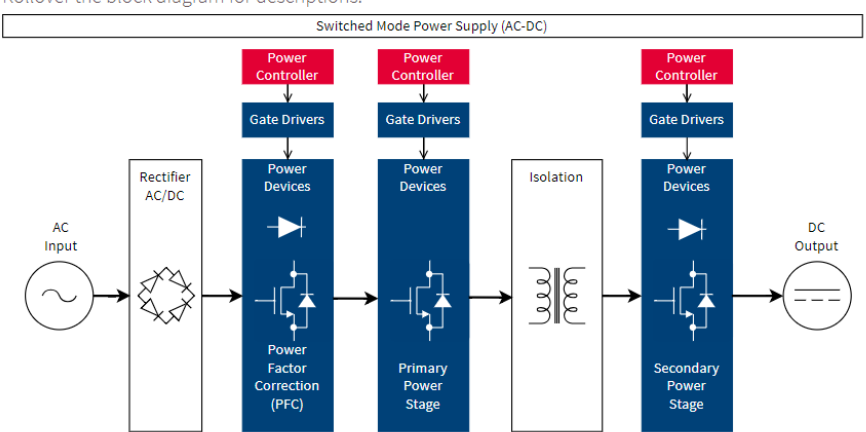
- Data Processing
  - Server
    - AC-DC Converter
      - AC input voltage [V]: 230
      - DC output voltage [V]: 12
      - Electric power [W]: 500
      - PFC Topology: Boost
      - Primary topology: LLC (half-bridge)
      - Secondary / PoL topology: ...
      - Isolation: Yes

Please type in the known parameters and click Next

AC input voltage [V] 230 20 possible solutions for this input	DC output voltage [V] 12 11 possible solutions for this input	Electric power [W] 500 7 possible solutions for this input	PFC Topology Boost 15 possible solutions for this input
Primary topology LLC (half-bridge) 7 possible solutions for this input	Secondary / PoL topology Any 20 possible solutions for this input	Isolation Yes 11 possible solutions for this input	

Rollover the block diagram for descriptions.

Switched Mode Power Supply (AC-DC)



1 Set operation parameters

2 Parameter description with rollovers texts

Previous Next

# Solution Finder – Demo: Compare Solutions

[www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)



2 Integration level 3 Trade-off ratings 4 Actions

Select Industry > Select Application > Select Load > Integration level > Check Solution > Trade-off ratings > Actions

1 List of suggested solutions

5 List of alternative products

**Your Selection**

- Consumer
  - Home appliances
    - Aircon compressor

Controller: AMC1302-T038X0200 AB  
IPM: IKCM15H60GA  
Sensor: TLV4968-1TA

**Solutions**

Integration Level	Category & Product	Chip Count	Footprint [mm] <sup>2</sup>	Design Target	Price Indication	Actions
<input checked="" type="radio"/> Integrated driver/power stage	Controller 1 x XMC1302-T038X0200 AB IPM 1 x IKCM15H60GA + Show more..	5	1020.08	Easy to design	\$\$\$	
<input type="radio"/> Discrete	Controller 1 x XMC1302-T038X0200 AB Gate driver 1 x 6EDL04106NT + Show more..	11	1147.65	Flexible to design	\$\$\$	

**Products**

Controller Intelligent Power Modules (IPM) Sensor

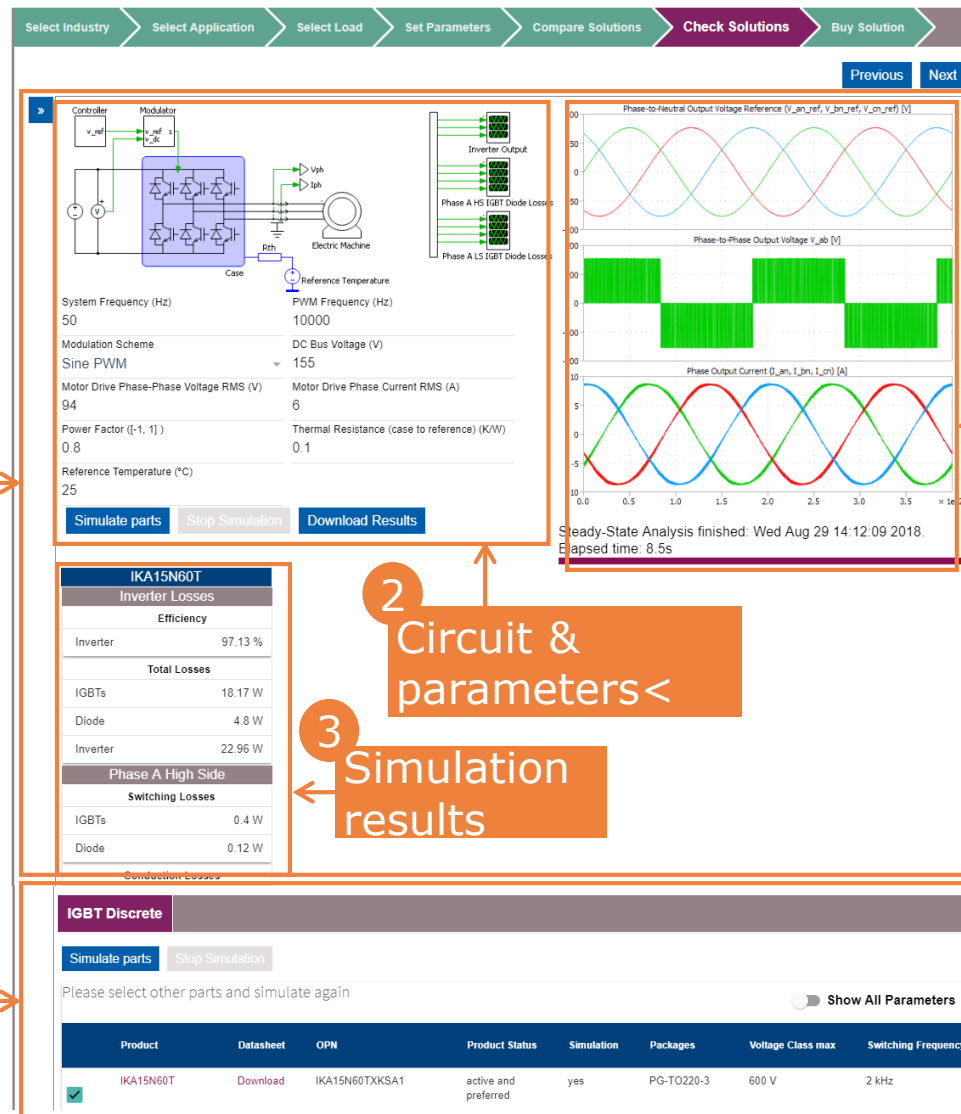
Please click on one of the category tabs above to change the products

Intelligent Power Modules (IPM) ☐ Show All Parameters

	Product	Datasheet	Simulation	Configuration	Switch Type	Pmot 10kHz	Voltage Class	Motor Current (Arms)	RDS(on)25Cmax
<input checked="" type="checkbox"/>	IKCM15H60GA	<a href="#">Download</a>	yes	3 Phase Open Emitter		1200 W	600 V	5.5 A	
<input type="checkbox"/>	IFCM10P60GD	<a href="#">Download</a>	yes	PFC Integrated			600 V	5.5 A	
<input type="checkbox"/>	IFCM10S60GD	<a href="#">Download</a>	yes	PFC Integrated			600 V	5.5 A	
<input type="checkbox"/>	IFCM15P60GD	<a href="#">Download</a>	yes	PFC Integrated			600 V	8.5 A	
<input type="checkbox"/>	IFCM15S60GD	<a href="#">Download</a>	yes	PFC Integrated			600 V	8.5 A	
<input type="checkbox"/>	IFCM20U65GD	<a href="#">Download</a>	no	3 Phase Interleaved PFC			650 V	20 A	
<input type="checkbox"/>	IFCM30T65GD	<a href="#">Download</a>	no	2 Phase Interleaved PFC			650 V	30 A	

# Solution Finder – Demo: Check Solutions

[www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)



1  
System  
simulation

4  
Simulation  
diagram &  
status

2  
Circuit &  
parameters<

3  
Simulation  
results

5  
Selected &  
available  
products

IKA15N60T	
Inverter Losses	
Efficiency	
Inverter	97.13 %
Total Losses	
IGBTs	18.17 W
Diode	4.8 W
Inverter	22.96 W
Phase A High Side	
Switching Losses	
IGBTs	0.4 W
Diode	0.12 W

IGBT Discrete							
Please select other parts and simulate again							
Product	Datasheet	OPN	Product Status	Simulation	Packages	Voltage Class max	Switching Frequency
<input checked="" type="checkbox"/> IKA15N60T	<a href="#">Download</a>	IKA15N60TXKSA1	active and preferred	yes	PG-TO220-3	600 V	2 kHz

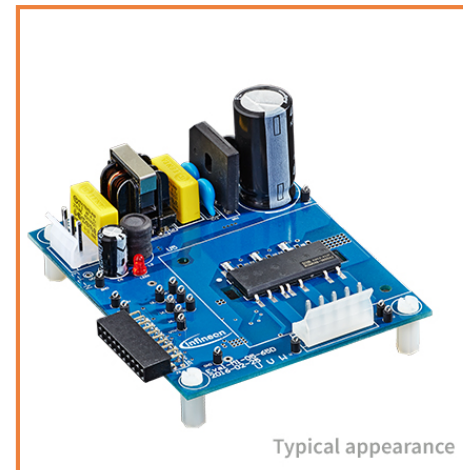
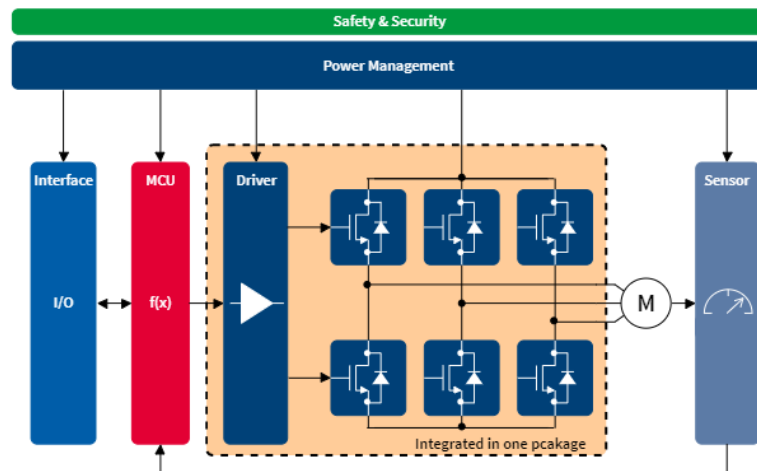
# Solution Finder – Demo: Buy Solutions

[www.infineon.com/solutionfinder](http://www.infineon.com/solutionfinder)

1 Selected solution      2 Actions to report, partner and buy

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

Rollover the block diagram for detailed product information and links.



3 Solution architecture      4 Evaluation board (detailed BOM)

# 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](http://www.infineon.com/support)

# Online Tools Overview

## [www.infineon.com/tools](http://www.infineon.com/tools)



Aware  
(Interest)

Select  
(Learn)

Check  
(Evaluate)

Buy Sample  
(Purchase)

Design-in  
(Justify)

Purchase Volume  
(Use)

After Sales  
(Get help)



7 minutes

Infineon Toolbox: focus on Design-in

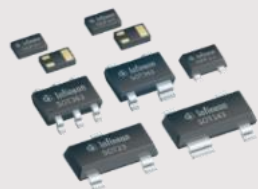
Coming soon

[www.infineon.com/tools](http://www.infineon.com/tools)

### How to select a Product?

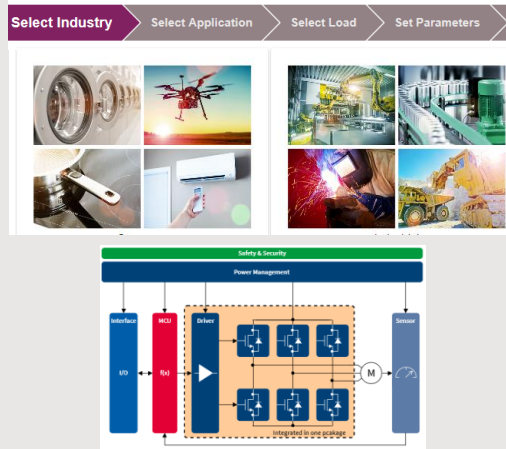
MOSFET Finder [Change Product Finder](#) ▼

Parameter Selection		Feature Selection	
Breakdown Voltage	Select VDS [V]	Type	Select Type
Drain Current $I_D$ (max)	at least [A]	Technology	Select Technology
$R_{DS(on)}$ (max)	below [mOhm]		
Gate Charge $Q_G$	below [nC]		



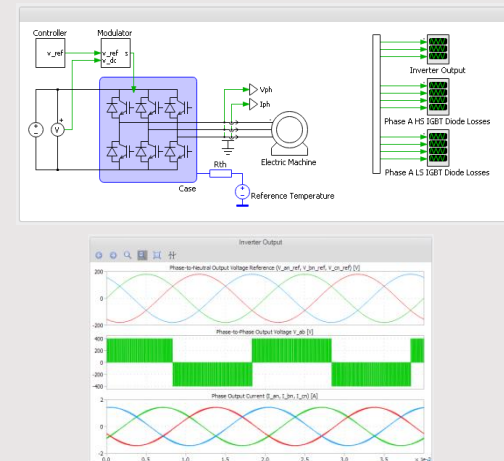
Product Finders (e.g., [IGBT](#), [MOSFET](#), [IPM](#), [Gate Driver](#), [Simulation Models](#), etc.)

### How to select a Solution?



Use our [Solution Finder](#)  
(e.g.: Motor Control, SMPS,  
LED Lighting, PoL)

### How to check the Solution?

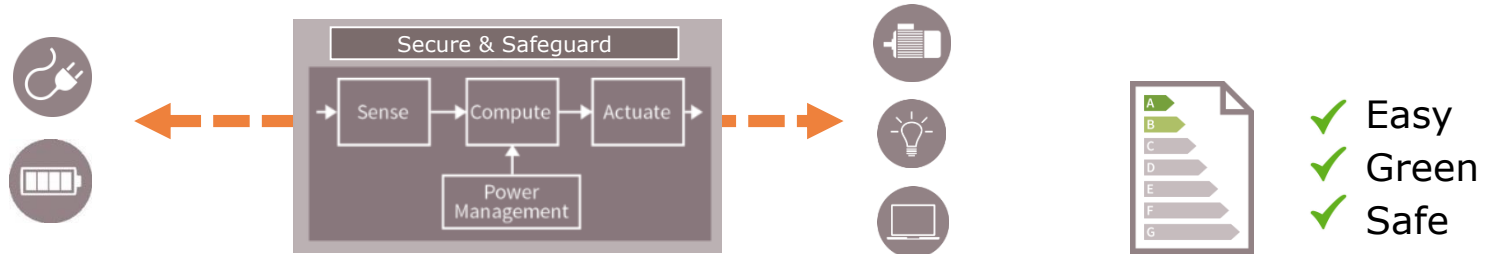


Simulation Tools (e.g.,  
[IPOSIM](#), [Infineon Designer](#),  
[XENSIV](#))

Download: datasheet, simulation model, BOM, circuit schematic, evaluation board

# Online Simulation provides tailored simulation engines for different customer use cases

## Select Product Block-Diagram



## 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)

**TINA**



EasyAPE PRO (ATV Body Power)

IfxSPICE, SIMetrix, PSpice, LTSpice



# IPOSIM: Infineon Power Simulation Tool

## Landing Page: [www.infineon.com/iposim](http://www.infineon.com/iposim)



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1

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Start here

[Download Getting Started Iposim Guide](#)  
01\_00 | Apr 19, 2018 | PDF | 1.7 mb

3

Step 1: register first

Please register here to myInfineon. Important: your old IPOSIM account will not work.

Step 2: login & select

Login and select your target application including the preferred circuit topology.

Step 3: define your input

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

Step 4: choose your device

Step 5: simulate & compare

Step 6: learn & get support

## 2 Why to use Infineon IPOSIM



> Why to use Infineon IPOSIM

Book - IGBT modules



## 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>

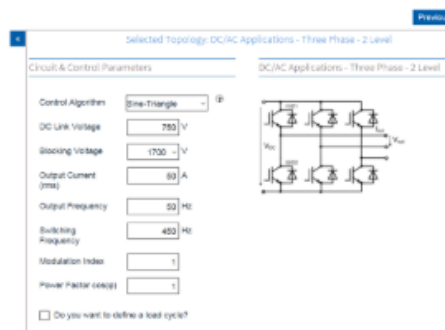
1

Step 1: select your topology



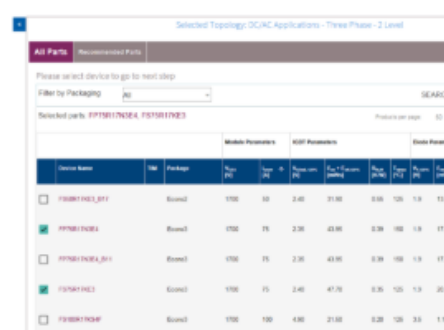
2

Step 2: define your input



3

Step 3: select your device



Here you select your target application and preferred circuit topology

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

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

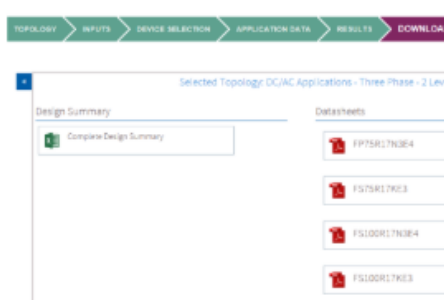
Step 5: compare results

Simulation Results		Simulation Results	
Maximum Junction Temperature		Maximum Junction Temperature	
Switch	50.13 °C	Switch	50.25 °C
Diode	50 °C	Diode	50.01 °C
Switching Losses		Switching Losses	
Switch	0.37 W	Switch	0.73 W
Diode	0 W	Diode	0 W
Conduction Losses		Conduction Losses	
Switch	0 W	Switch	0 W
Diode	0 W	Diode	0 W
Total Losses		Total Losses	
Switch	0.37 W	Switch	0.73 W
Diode	0 W	Diode	0 W
FP75R17N3E4		FS75R17KE3	

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

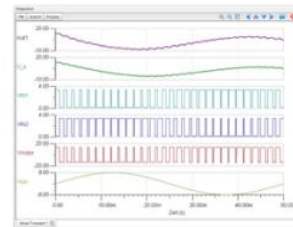
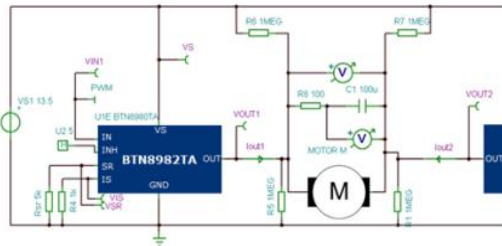
# Infineon Designer - Online Digital Prototyping Engine ([www.infineon.com/ifxdesigner](http://www.infineon.com/ifxdesigner))



## Great user experience

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

powered by...



## 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

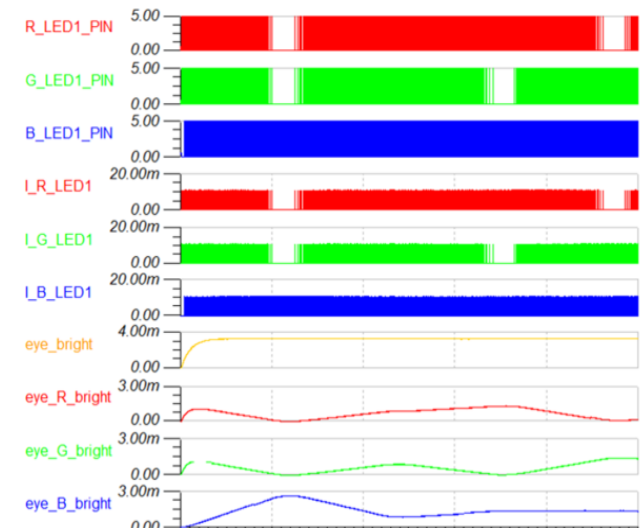
## 1 Select XMC1200 circuit



## 2 Choose simulation mode

## 3 Co-simulate MCU software with analog circuit

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



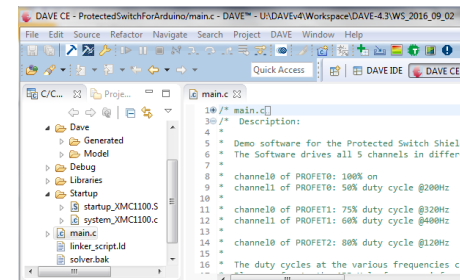
# Infineon Designer Use Cases: Digital Twin 24V Arduino Shield PROFET™+ 24V Family



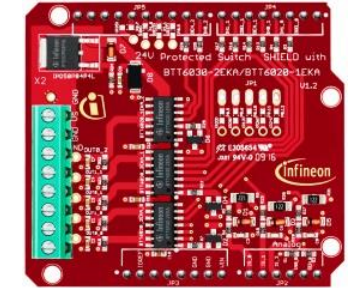
## › Unique Value Proposition

- 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

## Software



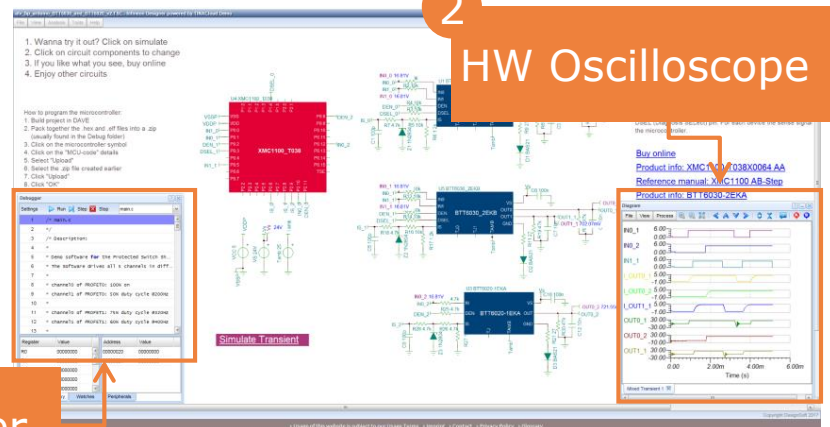
## Hardware



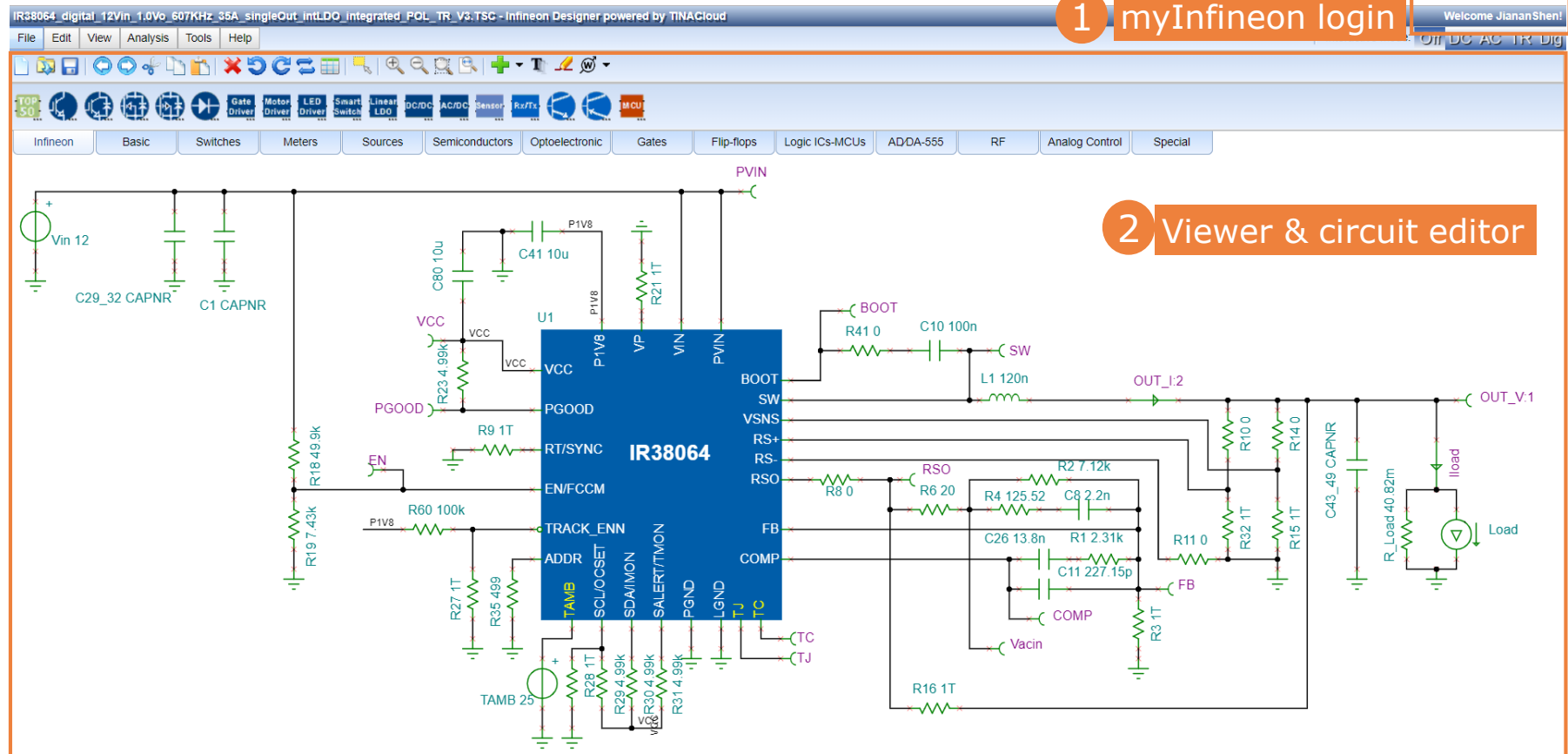
## › Full Hardware & Software Design

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

## Online Virtualization



# Infinite 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

1. Wanna try it out? Click on analysis
2. Double click on green window to design
3. If you like what you see, buy online
4. Enjoy other circuits

The screenshot shows a circuit diagram with components like  $V_{in}$  12,  $C41$  10u,  $R21$  1T,  $PVIN$ ,  $BOOT$ ,  $C10$  100n,  $L1$ ,  $R50$ ,  $R6$  20,  $R4$ ,  $C2$ , and  $R18$  1T. A green window labeled "Design Tool" is open, displaying a table of design criteria.

**Design Tool**

Please double click here to enter design criteria

Parameter	Value
$V_{in}$ [5,21]	12
$V_{out}$ [1.0,1.0]	1
$I_{out}$ [0,35]	35
$F_{sw}$ [600k,650k]	607k
$C_{out}$ [1n,1000u]	52.29u
$C_{out\_Nr}$ [2,100]	15
$V_{out\_ripple}$ [0, $V_{out} \cdot 0.1$ ]	10m
$C8\_Cc$ [1n,4.7n]	2.2n
$L_{ripple\_percentage}$ [20,50]	35
$I_{step}$ [0, $I_{out} \cdot 0.01$ ]	10.5

Buttons: Run, Cancel, Properties

onfig file loaded according to the Data file changed or click on the

## 1 Interpreter window

```
{ Please double click here to enter design criteria }
{ Input voltage }
V_in := 12;
{ Target output voltage - fixed due to Config file }
V_out := 1;
{ Maximum output current }
I_out := 35;
{ Target Switching Frequency - fixed due to Config file }
F_sw := 607k;
{ Derated (DC & AC) value for a single output capacitor }
C_out := 52.29u;
{ Number of output capacitors with value C_out }
C_out_Nr := 15;
{ Target Vout ripple }
Vout_ripple := 10m;
{ Compensation capacitor. Default is 2.2nF }
C8_Cc := 2.2n;
{ L_ripple vs Iout percentage }
L_ripple_percentage := 35;
{ Load step current }
I_step := 10.5;
```

## › Design Tool

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

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# Technical Support

› Please visit [www.infineon.com/support](http://www.infineon.com/support)

## Support Page

Support is available in English, German and Mandarin from our talented team of experts.



› Start chat session with our support team



› Get product support from our technical experts



› Call us toll-free 24/7

Find an answer to your question

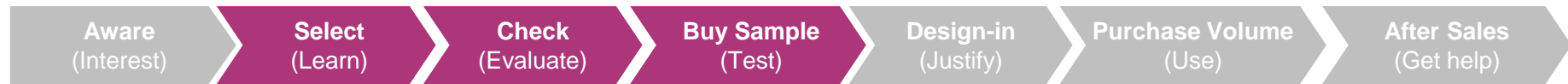
Please state your question (with at least 3 words)

### FAQ

1. Technical Support [CN] [DE]
2. Chip Card and Security Distis [CN] [DE]
3. HiRel Discretes for special applications, e.g. Aero and Space [CN] [DE]
4. Supplier Service, Supplier Page, page registration [CN] [DE]
5. Use Infineon Designer for Simulation and Development of your Circuit [CN] [DE]
6. How to login to myInfineon [CN] [DE]

# Online Tools Overview

## [www.infineon.com/tools](http://www.infineon.com/tools)



Online Tools: focus on learning & selection

[www.infineon.com/tools](http://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

### 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

### 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

Product Finders ([MOSFET](#), [IGBT](#), [Gate Driver](#), etc. )

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

Simulation Tools ([Infineon Designer](#), [IPOSIM](#), [PLECS](#))

# Resource List <https://www.infineon.com/tools>

## Finder Tools

- › [Infineon Solution Finder](#)
- › [Infineon Evaluation Board Finder](#)
- › [Infineon Product 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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