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IPOSIM Getting Started
https://iposim.infineon.com

2018-10-01
Start our new Landing Page


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
Registration myInfineon
add URL

1. Click on icon on top of the page: “Register for myInfineon”

2. An overlay will pop-up to enter Email & company

3. An Email will be sent out (Double Opt-in) to activate your account

4. Click on link in Email and finalize registration
IPOSIM Step by Step Guide

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 an easy to re-use tabular form

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Step 1: select your topology

AC/DC Applications

Single Phase
- B2U - Two-pulse bridge uncontrolled
- B2C - Two-pulse bridge fully controlled

Three Phase
- B6U - Six-pulse bridge uncontrolled
- B6C - Six-pulse bridge fully controlled
- M3.2U - Double three-pulse star uncontrolled (coming soon)
- M3.2C - Double three-pulse star fully controlled (coming soon)
- M6U - Six-pulse star uncontrolled (coming soon)
- M6C - Six-pulse star fully controlled (coming soon)

DC/DC Application

- Boost
- Buck

Example: Inverter topologies

AC/AC Applications

Single Phase
- W1C - phase control

Three Phase
- W3C - phase control

DC/AC Applications

- Single Phase
- Three Phase - 2 Level
- Three Phase - 2 Level (Stack solution)
- Three Phase - 3 Level NPC1
- Three Phase - 3 Level NPC2
### Step 2: define your input criteria

#### Selected Topology: DC/AC Applications - Three Phase - 2 Level

<table>
<thead>
<tr>
<th>Circuit &amp; Control Parameters</th>
<th>DC/AC Applications - Three Phase - 2 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control Algorithm</strong></td>
<td>Sine-Triangle</td>
</tr>
<tr>
<td><strong>DC Link Voltage</strong></td>
<td>750 V</td>
</tr>
<tr>
<td><strong>Blocking Voltage</strong></td>
<td>1700 V</td>
</tr>
<tr>
<td><strong>Output Current (rms)</strong></td>
<td>50 A</td>
</tr>
<tr>
<td><strong>Output Frequency</strong></td>
<td>50 Hz</td>
</tr>
<tr>
<td><strong>Switching Frequency</strong></td>
<td>2000 Hz</td>
</tr>
<tr>
<td><strong>Modulation Index</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Power Factor cos(φ)</strong></td>
<td>0.8</td>
</tr>
</tbody>
</table>

- [ ] Do you want to define a load cycle (coming soon)?

---

Circuit Diagram

1. Set operation parameters
2. Circuit
Step 3: select your device

Selected Topology: DC/AC Applications - Three Phase - 2 Level

Please select device to go to next step

Filter by Packaging: All, SEARCH:

Products per page: 50, 1-50 of 158

Selected parts: FS100R17N3E4, FS100R17PE4

<table>
<thead>
<tr>
<th>Device Name</th>
<th>TIM Package</th>
<th>$V_{CS}$ [V]</th>
<th>$I_{nom}$ [A]</th>
<th>$V_{CEsat, 125^\circ C}$ [V]</th>
<th>$F_{on} \times F_{off, 125^\circ C}$ [mWs]</th>
<th>$R_{thJH}$ [K/W]</th>
<th>$T_{oppmax}$ [^\circ C]</th>
<th>$V_{F, 125^\circ C}$ [V]</th>
<th>$F_{req, 125^\circ C}$ [mWs]</th>
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</thead>
<tbody>
<tr>
<td>FS50R17KE3_B17</td>
<td>Econo2</td>
<td>1700</td>
<td>50</td>
<td>2.40</td>
<td>31.90</td>
<td>0.55</td>
<td>125</td>
<td>1.9</td>
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<td>75</td>
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<td>43.95</td>
<td>0.39</td>
<td>150</td>
<td>1.9</td>
<td>17.20</td>
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<td>75</td>
<td>2.35</td>
<td>43.95</td>
<td>0.39</td>
<td>150</td>
<td>1.9</td>
<td>17.20</td>
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<tr>
<td>FS75R17KE3</td>
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<td>125</td>
<td>1.9</td>
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<td>100</td>
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<td>0.32</td>
<td>150</td>
<td>1.9</td>
<td>20.00</td>
</tr>
<tr>
<td>FS100R17N3E4_B11</td>
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<td>1700</td>
<td>100</td>
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<td>20.00</td>
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<td>FS100R17PE4</td>
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<td>100</td>
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<td>48.00</td>
<td>0.33</td>
<td>150</td>
<td>1.9</td>
<td>23.00</td>
</tr>
</tbody>
</table>

1. Filter & Search
2. Product List
Step 3.1: set other application data

1. Set cooling condition
   - Select the appropriate heatsink model:
     - FS100R17N3E4
       - Predefined Heatsink
       - User Defined Heatsink
       - Fixed Heatsink Temperature
     - FS100R17PE4
       - Predefined Heatsink
       - User Defined Heatsink
       - Fixed Heatsink Temperature

2. Set advanced parameters
   - Define the heatsink temperature (T_{heatsink})
     - Value: 50 °C
Step 4: simulate electrical & thermal (PLECS)

Simulation Graphics

FS100R17N3E4

Temperature Ripple

FS100R17PE4

Temperature Ripple

1

IGBT module
Step 5: compare simulation results

<table>
<thead>
<tr>
<th></th>
<th>FS100R17N3E4</th>
<th>FS100R17PE4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Simulation Results</strong></td>
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<tr>
<td>Maximum Junction Temperature</td>
<td></td>
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</tr>
<tr>
<td>Switch</td>
<td>66.1 °C</td>
<td>66.8 °C</td>
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<tr>
<td>Diode</td>
<td>59.5 °C</td>
<td>60.2 °C</td>
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<tr>
<td><strong>Switching Losses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch</td>
<td>14.8 W</td>
<td>14.8 W</td>
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<tr>
<td>Diode</td>
<td>6.7 W</td>
<td>8.7 W</td>
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<tr>
<td><strong>Conduction Losses</strong></td>
<td></td>
<td></td>
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<tr>
<td>Switch</td>
<td>29.7 W</td>
<td>29.8 W</td>
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<tr>
<td>Diode</td>
<td>6.2 W</td>
<td>6.2 W</td>
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<tr>
<td><strong>Total Losses</strong></td>
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<tr>
<td>Switch</td>
<td>44.5 W</td>
<td>44.6 W</td>
</tr>
<tr>
<td>Diode</td>
<td>12.8 W</td>
<td>14.9 W</td>
</tr>
</tbody>
</table>

1. **Junction Temperature**
2. **Conduction & Switching Losses**
Step 6: download results

Selected Topology: DC/AC Applications - Three Phase - 2 Level

Design Summary

Complete Design Summary

Datasheets

FS100R17N3E4
FS100R17PE4
Support Page

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

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- **Technical Assistance Center**
- **Call us Toll Free**

Find an answer to your question

**Please state your question (with at least 3 words)**

**FAQ**

1. Radar chips (CN) [DE]
2. Technical Support (CN) [DE]
3. Chip Card and Security Distis (CN) [DE]
4. Product Counterfeit Step 1 (CN) [DE]
5. Supplier Service, Supplier Page, page registration (CN) [DE]
6. Green Products (CN) [DE]
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