

myPower online Design Center

Featuring IR Ballast Designer Software



<http://mypower.irf.com>

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Home page & login:

POWER TO LEAD

Welcome to MyPower
International Rectifier's premier site for power

Power Factor Correction



PDF Guided Tour (413KB)
Simple circuit design
Calculate all part values
Reduce PCB space 50%
[Design a PFC Circuit](#)

Synchronous Rectification



PDF Guided Tour
Improve circuit efficiency
Compare MOSFETs
Calculate all part values
[Design a Sync Rec Circuit](#)

Point of Load



PDF Guided Tour 1.1MB
Simulate iPower circuits
Compare discrete MOSFETs
Calculate efficiency and Tj
[Design a POL Circuit](#)

Bus Converter



PDF Guided Tour 433KB
Multiple Topologies
Compare discrete MOSFETs
Calculate efficiency and Tj
[Design a BUS Converter](#)

Motion Control



PDF Guided Tour 568KB
Analyze performance
Compare IGBT modules
Calculate efficiency and Tj
Evaluate & Compare IPMs

Lighting



PDF Guided Tour
Create Schedules
Display output
AC or DC input
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APPLICATIONS

| | |
|------------|----------------|
| AC-DC | DC-DC |
| Appliances | Die Products |
| Audio | Hi-Rel |
| Automotive | Lighting |
| | Motion Control |

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Ballast Design Assistant Software

POWER TO LEAD

Generates complete electronic ballast schematic, bill of materials, and inductor specifications for a selected lamp type and input voltage range.

Advanced display page of lamp requirements and ballast operating points. Time domain graph showing actual ballast output waveforms. Inductor designer feature for calculating core size, air gap and number of windings. Electrical data and component value tables are also included for optimizing entire ballast product families.

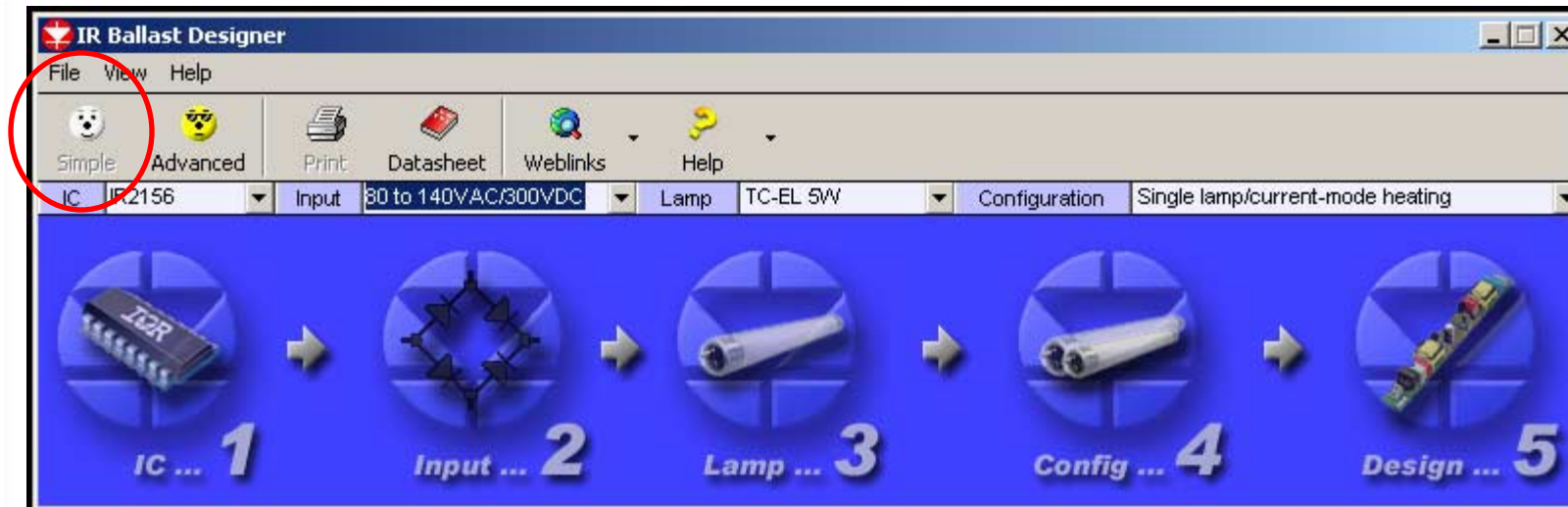


•Free Software!

- Simple 5-Step Ballast Design Process
- Lamp Browser
- Design Browser
- Advanced Display Page
- Ballast Operating Points Calculation
- LC Tank Component Calculator
- Ballast Operating Points Graph
- IC Component Calculator
- Time Domain Graph
- Inductor Designer
- Windows-based Graphical Interface PFC Component Calculator
- IR2156, IR21571, IR21592, IR21593, IR2166, IR2167, IR2520D, IR2161 Component Calculator Schematic
- Bill of Materials
- Electrical Data Table
- Inductor Specification Sheet
- Component Value Table
- Operates on Windows XP

EASY 5 step process

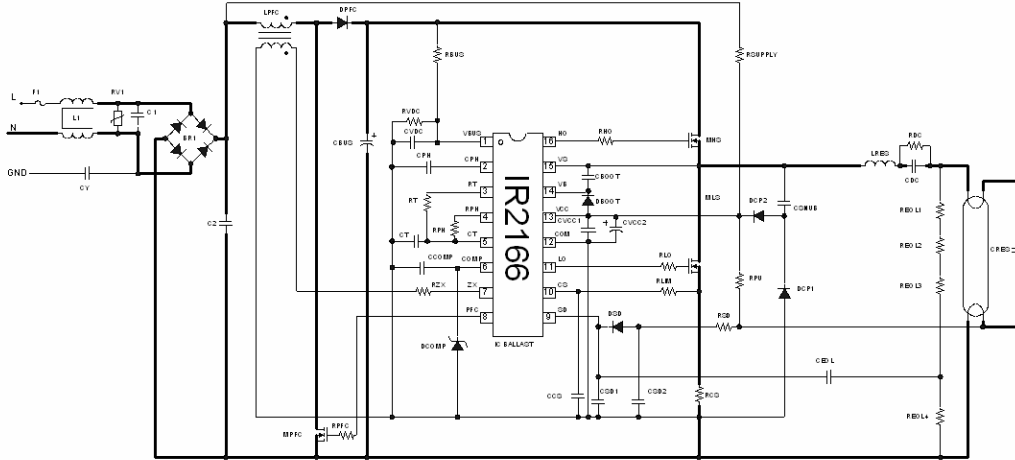
POWER TO LEAD



1. **Select your IC** IR21571, IR2156, IR21592, IR2166, IR2167, IR2520D or IR2161.
2. **Select your input voltage range** 80-140, 90-265 or 185-265VAC.
3. **Select your lamp type** Built in database with 38 types listed!
4. **Select circuit configuration** 2 single lamp & 4 dual lamp types.
5. **Click on "Design"** and a complete analysis is done with complete schematic, bills of material, plus inductor design with part numbers.

Software output:

POWER TO LEAD



| Qty | Type | Value | Rating | Tolerance | Reference |
|-----|----------------------------|--------------|---------|-----------|------------|
| 1 | Bridge Rectifier | 1 A | 1000V | | BR1 |
| 1 | Capacitor | 0.15 uF | 275VAC | | C1 |
| 2 | Capacitor | 0.1 uF | 400V | | C2 |
| 2 | Capacitor | 0.1 uF | 25V | | CBOOT |
| 1 | DC Bus Capacitor | 10 uF | 450V | 105C | CBUS |
| 1 | Capacitor | 0.68 uF | 25V | 5% | CCOMP |
| 1 | Capacitor | 330 pF | 25V | | CCS |
| 2 | Capacitor | 0.47 uF | 25V | | CEOL |
| 1 | Preheat Time Capacitor | 0.2 uF | 25V | 5% | CPH |
| 1 | Resonant Capacitor | 3.3 nF | 1500V | 5% | CRES |
| 1 | Capacitor | 470 pF | 25V | | CSD1 |
| 1 | Capacitor | 820 pF | 630V | | CSNUB |
| 1 | Capacitor | 470 pF | 25V | 1% | CT |
| 1 | Capacitor | 2.2 uF | 25V | | CVCC2 |
| 1 | Capacitor | 0.01 uF | 25V | | CVDC |
| 1 | Y Capacitor | 2.2 nF | 250VAC | | CY |
| 1 | Fast Recovery Diode | 600 V | 1A | | DBOOT |
| 1 | Diode | 12.6V | | | DCOMP |
| 3 | Diode | 1N4148 | | | DCP1 |
| 1 | PFC Diode | 600 V | 1A | | DPFC |
| 1 | Fuse | 2 A | 250VAC | | F1 |
| 1 | Ballast Control IC | IR2166 | | | IC BALLAST |
| 1 | Common-mode Line Filter | 2x10mH | 0.4A | | L1 |
| 1 | PFC Inductor | 1.1 mH | 1.6 Apk | 5% | LPFC |
| 1 | Resonant Inductor | 2.7 mH | 1.3 Apk | 5% | LRES |
| 2 | Half-Bridge MOSFET | IRF720 | | | MHS |
| 1 | PFC MOSFET | IRF730 | | | MPFC |
| 1 | Current Sense Resistor | 1.2 Ohm | | 1% | RCS |
| 1 | Resistor | Do Not Place | | | RDC |
| 3 | Resistor | 220 KOhm | 200V | | REOL1 |
| 1 | Resistor | 1.2 KOhm | | 5% | REOL4 |
| 3 | Resistor | 20 Ohm | | | RHO |
| 1 | Resistor | 1 KOhm | | | RLIM |
| 1 | Preheat Frequency Resistor | 51 KOhm | | 1% | RPH |
| 1 | Resistor | 220 KOhm | | | RPU |
| 1 | Resistor | 100 KOhm | | | RSD |
| 1 | Resistor | 343.15 KOhm | 400V | | RSUPPLY |
| 1 | Oscillator Timing Resistor | 62 KOhm | | 1% | RT |
| 1 | Varistor | 470 V | | | RV1 |
| 2 | Resistor | 680 KOhm | 200V | | RVBUS1 |
| 1 | Resistor | 56 KOhm | | 1% | RVDC |
| 1 | Resistor | 22 KOhm | | | RZX |

Complete schematic & BOM!

Additional software output:

POWER TO LEAD

Inductor data including core part number, wire, gap and turns!

International Rectifier **INDUCTOR SPECIFICATION**
TYPE : LRES (CURRENT MODE)

CORE SIZE GAP LENGTH mm
BOBBIN
CORE MATERIAL
NOMINAL INDUCTANCE mH
MAXIMUM CURRENT Apk
MAXIMUM CORE TEMPERATURE °C

| WINDING | START PIN | FINISH PIN | TURNS | WIRE DIAMETER (mm) |
|---------|-----------|------------|-------|--------------------|
| MAIN | | | 288 | 0.2 |

ELECTRICAL LAYOUT **PHYSICAL LAYOUT**

TEST (TEST FREQUENCY = 50kHz)
MAIN WINDING INDUCTANCE mH mH
MAIN WINDING RESISTANCE Ohms

NOTE: Inductor must not saturate at maximum current and maximum core temperature at given test frequency.

Graph showing operating points:

- Preheat
- Ignition
- Run

