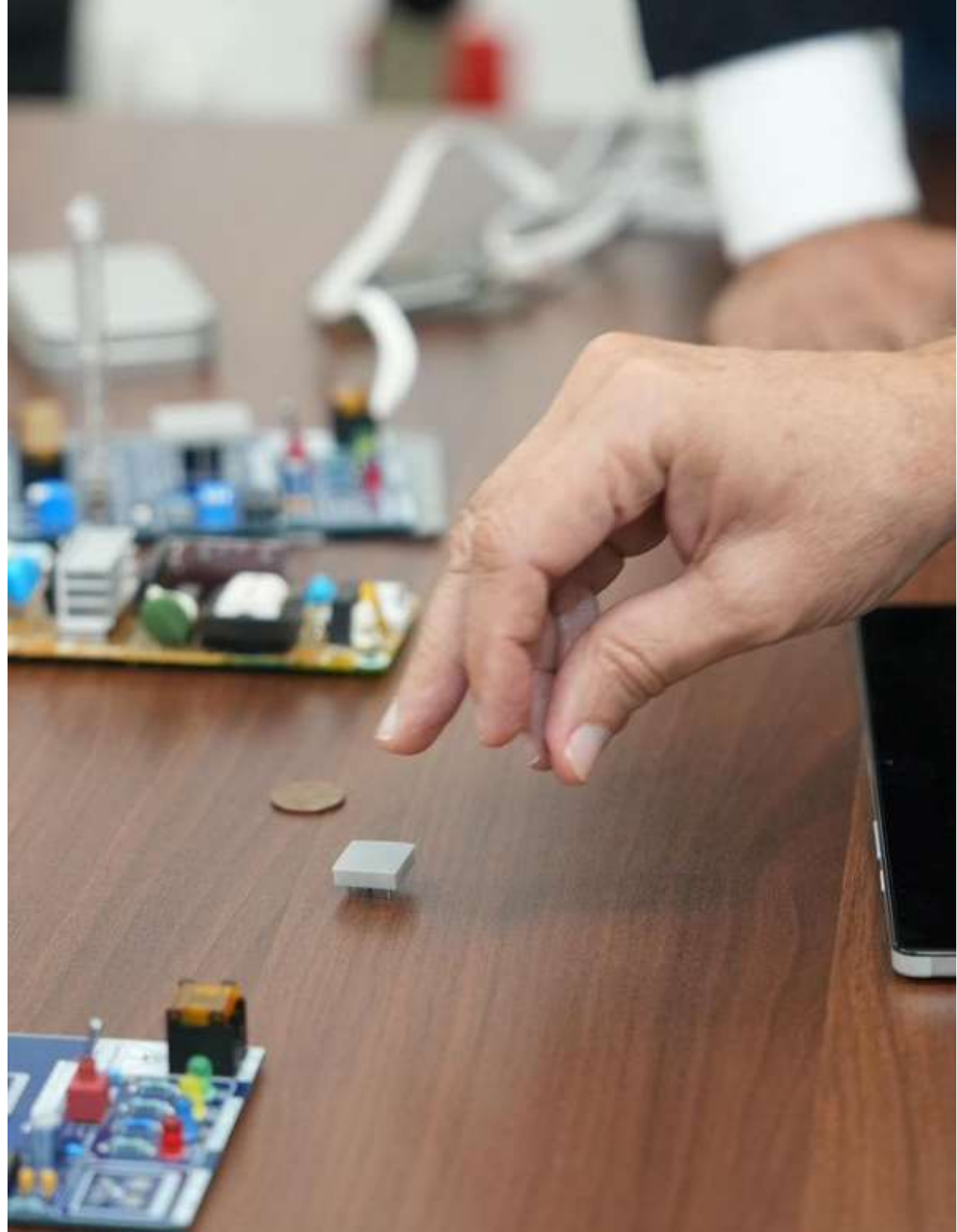
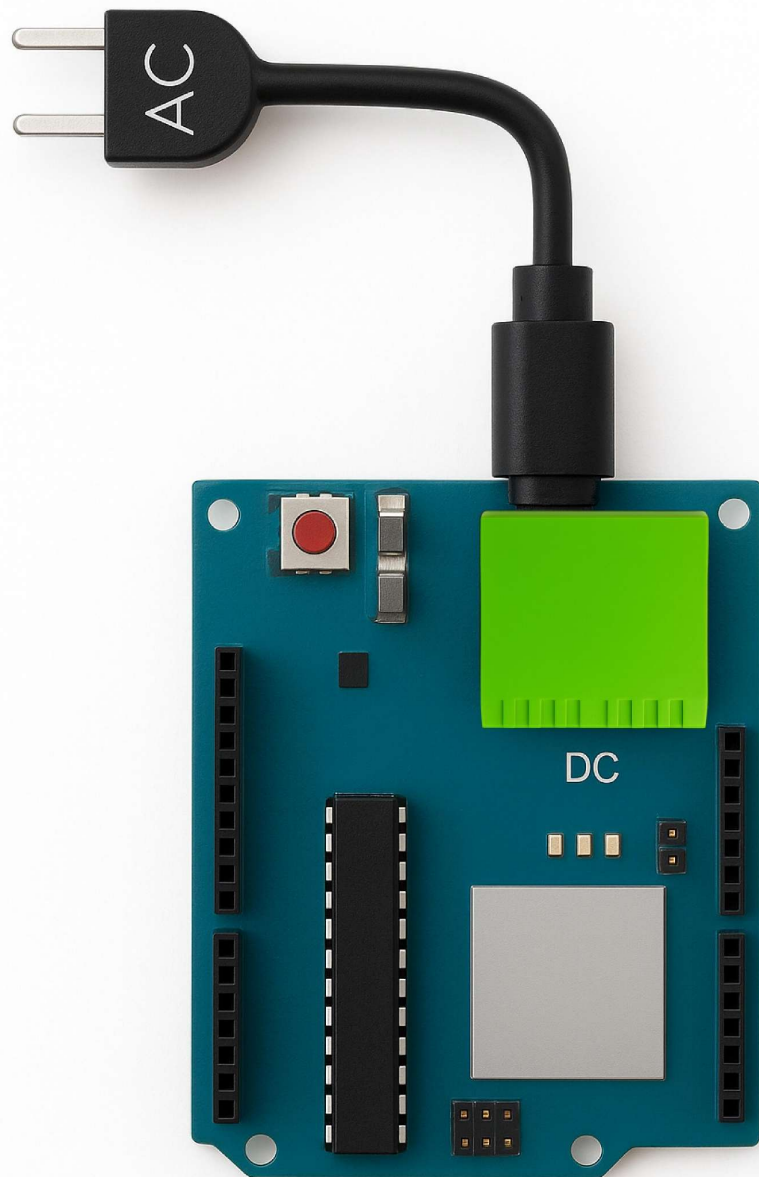
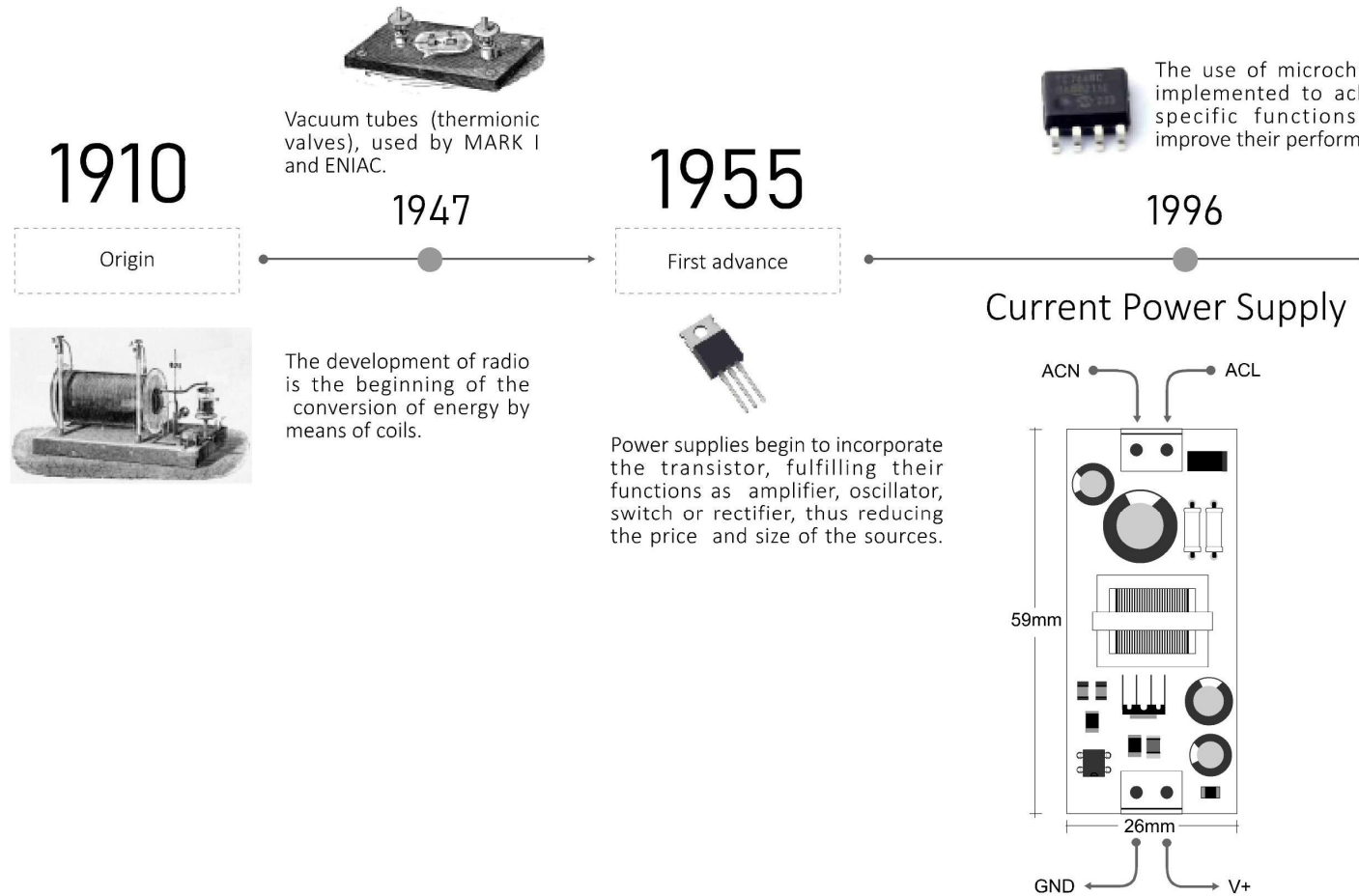




About our innovation



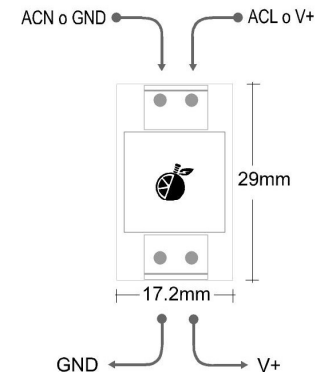
2024

New Generation

Limon Pico

In 2024 in the Dominican Republic, Dr. Valerio Tripicchio and Georges Ortiz launched the Thorlime Limon Pico-Nano series of power modules, with the aim of transforming obsolete technologies into high-efficiency solutions.

From this effort was born a power supply up to 10 times more compact than conventional ones, highlighting the Pico model (15x15x5 mm), recognized as the smallest in the world in its category, capable of automatically adjusting the voltage between 85V and 240V AC/DC and delivering outputs from 1W to 5W DC. This innovation represented a historic milestone in the global electronics industry, positioning Thorlime as a benchmark in ultra-compact and high-performance power supplies.

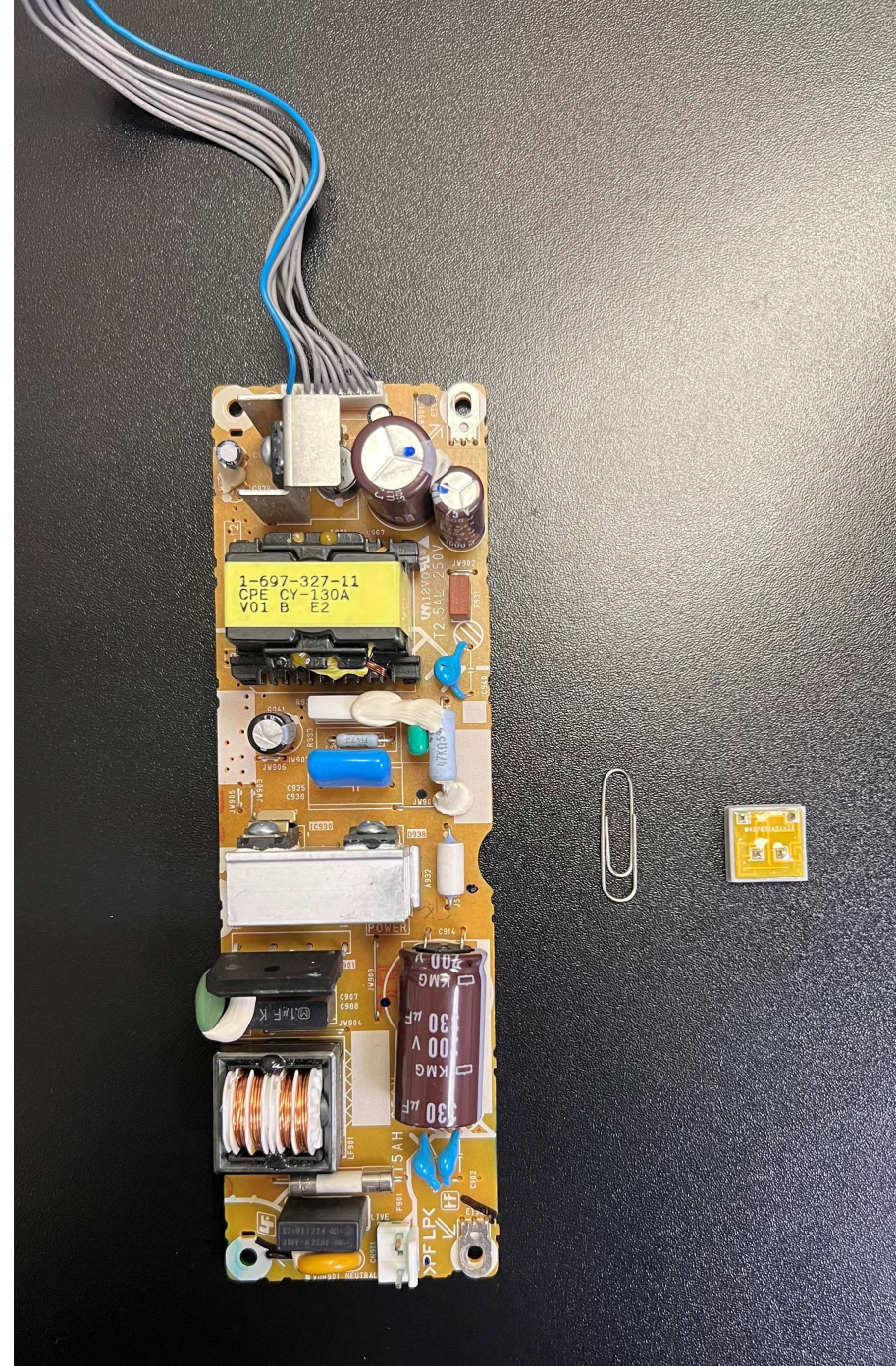


About our innovation

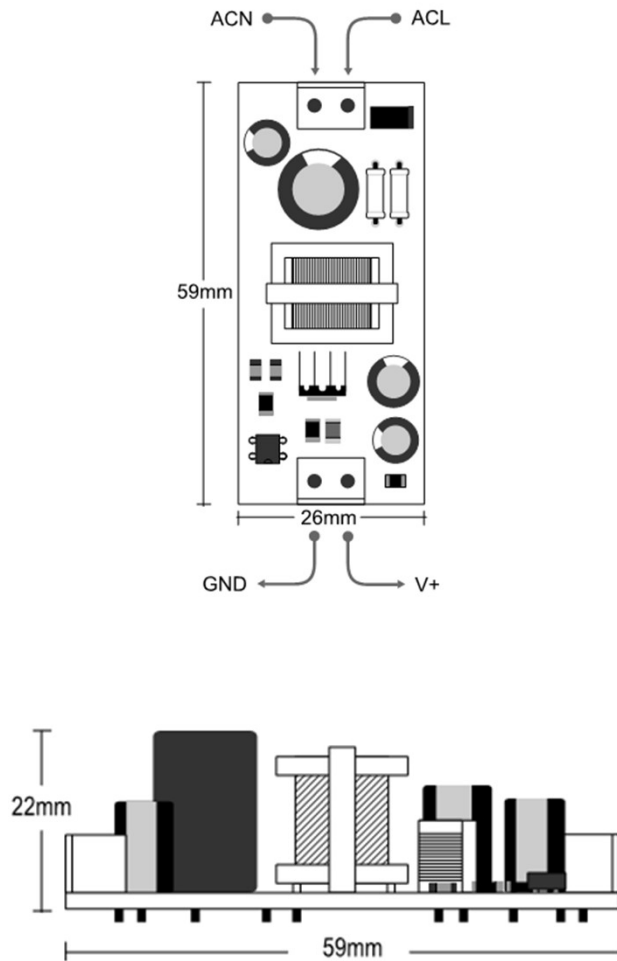
It is a new technology that transforms alternating current (AC) to direct current (DC) in a format up to 10 times smaller than current options on the market, we do not use copper coil to reduce energy, with an efficiency of 97.5% , without technical loss, ambient temperature and stabilized energy at its outputs.

Available in 1W up to 40W, so far, with voltage variations from: 3V up to 48V DC output. Now with possibilities to integrate on little gadget board

Very stable and low ripples to ensure electronics devices requirements. Perfect Power Supply to ensure processor functionalities. Can be integrated in small and flat devices. Most efficient and most green for environment. Unique Power Supply Module Form Factor For Easy Replacement.

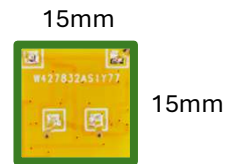
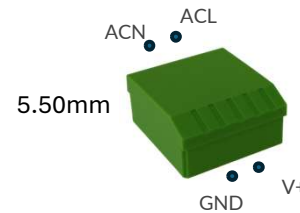


Current Power Supply Size

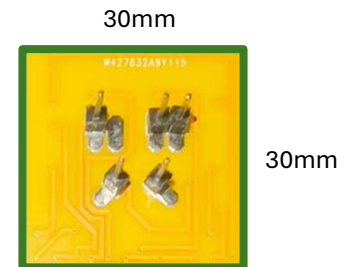
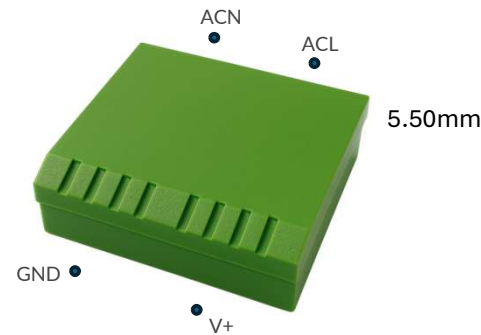


Our Power Supply Size

PICO



NANO



We can consider our source to be the smallest in the world,
with direct AC input and its DC output stabilized. We
remove the copper coil in our transformation method.



PICO

We can consider that our PICO limon product series is the smallest power supply in the world with a size of 15mm x 15mm x 5.5mm with an input of 85 Volts up to 280 Volts and a DC output from 1 to 24 volts and 10 watts of power, it is without a doubt the smallest power supply in the world.

Product information

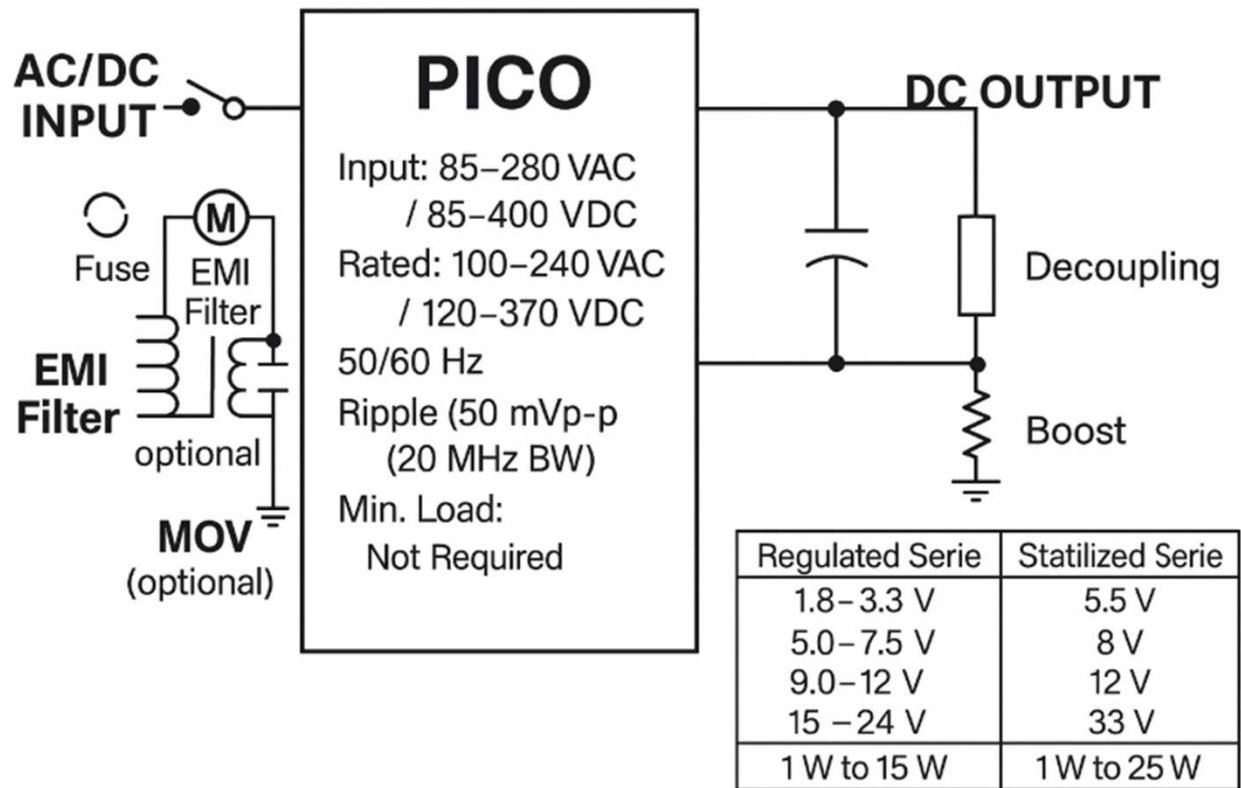
- **Outputs:** 1 DC
- **Operational Range:** 85 V AC to 280 V AC – 85 V DC to 400 V DC
- **Rated Range:** 100 V AC to 240 V AC – 120 V DC to 370 V DC.
- **Operational Range:** Irrelevant.
- **Rated Range:** 50 Hz / 60 Hz.
- **Boost Power:** Peak power is auto negotiated.
- **Ripple and Noise (20 MHz Bandwidth):** 50 mVp-p max.
- **Minimum Load:** Not Required.
- **Temperature Coefficient:** ± 0.05 %/K max.

Regulated Serie	Stabilized Serie
1.8 V – 3.3 V	5.5 V
5.0 V – 7.5 V	8.0 V
9.0 V – 12 V	12 V
15 V – 24 V	33 V
1 W to 15 W	1 W to 25 W



PICO

Schematic Diagram





NANO

This product is an encapsulated power supply, which allows you to transform an AC or DC input into a stabilized and regulated DC output. For its use it does not require additional components to perform the specified function.

Product information

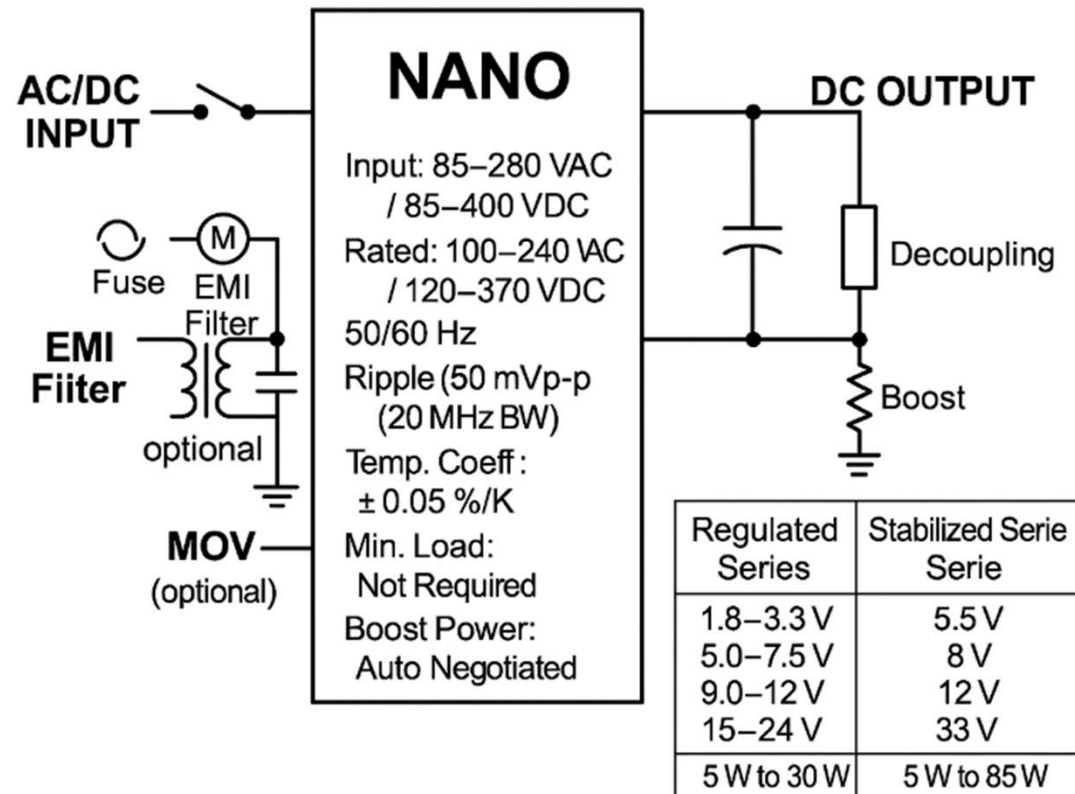
- **Outputs:** 1 DC
- **Operational Range:** 85 V AC to 280 V AC – 85 V DC to 400 V DC
- **Rated Range:** 100 V AC to 240 V AC – 120 V DC to 370 V DC.
- **Operational Range:** Irrelevant.
- **Rated Range:** 50 Hz / 60 Hz.
- **Boost Power:** Peak power is auto negotiated.
- **Ripple and Noise (20 MHz Bandwidth):** 50 mVp-p max.
- **Minimum Load:** Not Required.
- **Temperature Coefficient:** ± 0.05 %/K max.

Regulated Serie	Stabilized Serie
1.8 V – 3.3 V	5.5 V
5.0 V – 7.5 V	8.0 V
9.0 V – 12 V	12 V
15 V – 24 V	33 V
5 W to 30 W	5 W to 85 W



NANO

Schematic Diagram





NANO2

This product is an encapsulated power supply, which allows you to transform an AC or DC input into a stabilized and regulated DC output. It does not require any additional components to perform the specified function. **Unlike the NANO, the NANO2 provides two independent DC outputs ranging from 1.8V to 24V, which can be configured to deliver the same voltage on both outputs or different voltages as needed.**

Product information

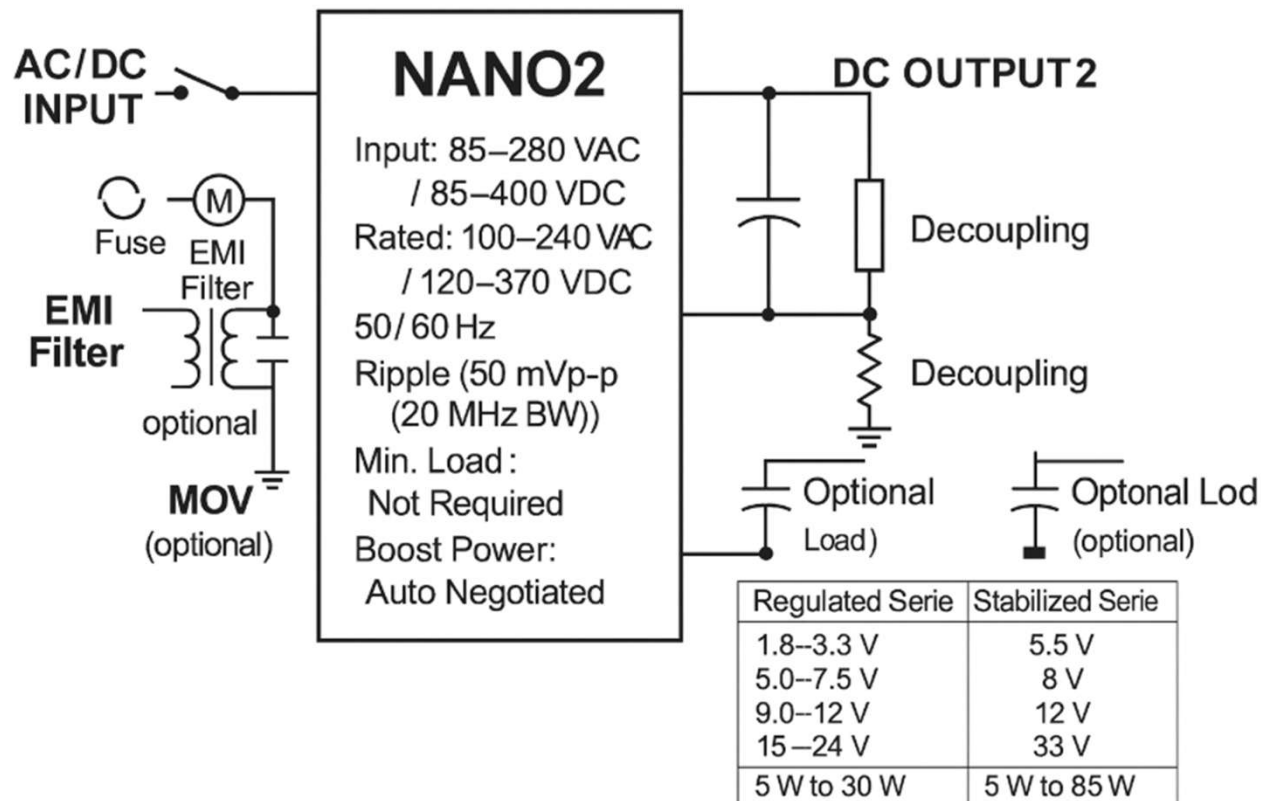
- **Outputs:** 2 DC
- **Operational Range:** 85 V AC to 280 V AC – 85 V DC to 400 V DC
- **Rated Range:** 100 V AC to 240 V AC – 120 V DC to 370 V DC.
- **Operational Range:** Irrelevant.
- **Rated Range:** 50 Hz / 60 Hz.
- **Boost Power:** Peak power is auto negotiated.
- **Ripple and Noise (20 MHz Bandwidth):** 50 mVp-p max.
- **Minimum Load:** Not Required.
- **Temperature Coefficient:** ± 0.05 %/K max.

Regulated Serie	Stabilized Serie
1.8 V – 3.3 V	5.5 V
5.0 V – 7.5 V	8.0 V
9.0 V – 12 V	12 V
15 V – 24 V	33 V
5 W to 30 W	5 W to 85 W



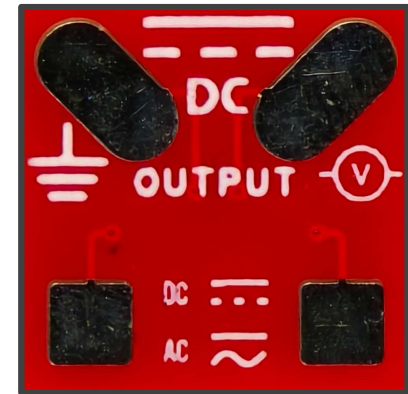
NANO2

Schematic Diagram



TOR-RF

The TOR-RF Voltage Reference Module directly converts a medium-voltage AC or DC input (85 to 350 Vac / 120 to 495 Vdc peak) into a very high-precision, low-drift voltage reference. It integrates rectification, primary filtering, and a bandgap reference with standard outputs. It delivers up to +10 mA (source) / -3 mA (sink), with an initial accuracy of $\pm 0.1\%$ and a TC of $\leq 8 \text{ ppm}/^\circ\text{C}$.



Product information

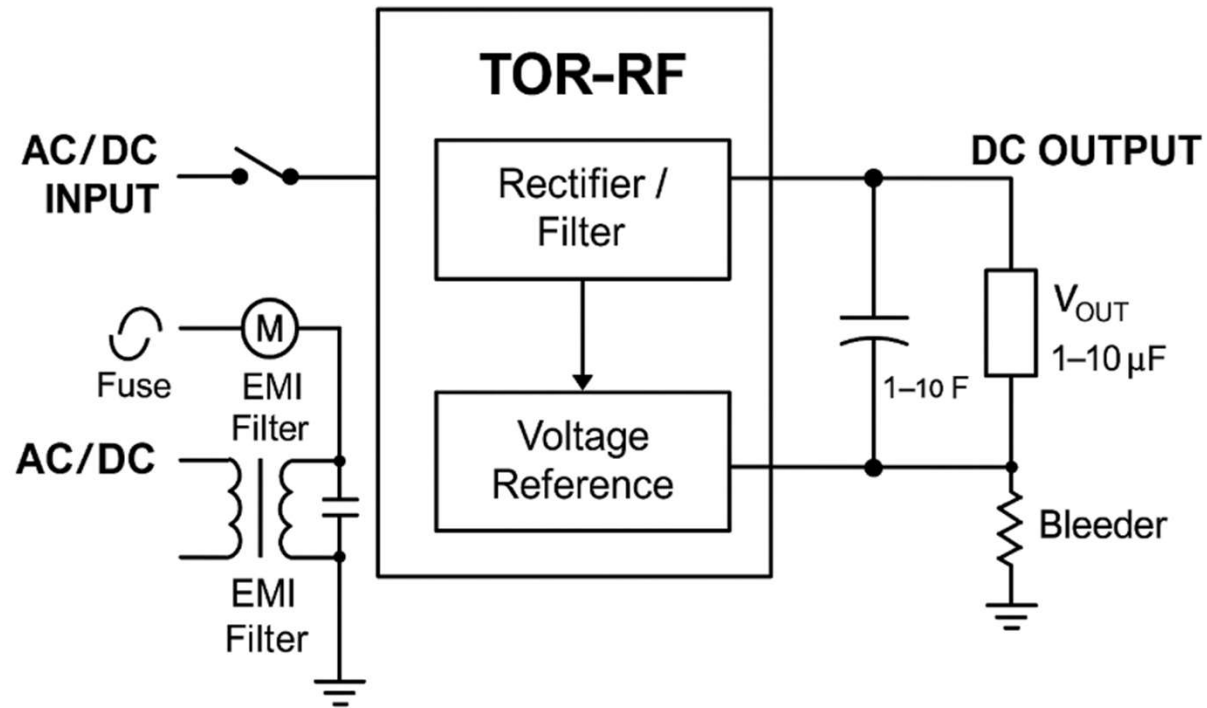
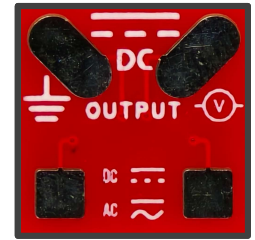
- **Input:** 85...350 Vac (45–65 Hz) / 120...495 Vdc (pico rectificado).
- **Outputs (SKU):** 1.200 V, 2.048 V, 2.500 V, 3.000 V, 3.300 V, 4.096 V, 5.000 V.
- **Initial accuracy:** $\pm 0.1\%$ @ 25 °C.
- **Tempco (TC):** $\leq 8 \text{ ppm}/^\circ\text{C}$ (-40...+125 °C).
- **Output current:** +10 mA (source) / -3 mA (sink).
- **Noise (0.1–10 Hz):** 8...35 μVpp típico según modelo.
- **Size:** 14mm x 14mm x 5.5mm
- **PSRR (60 Hz):** $\approx -60 \text{ dB}$.
- **Package (PCB):** 12.0 mm x 12.0 mm (FR4 1.6 mm).

Modelo	Vref	Precisión	TC	Iout máx.	Ruido 0.1–10 Hz	PSRR 60 Hz
TLVR1200	1.200 V	$\pm 0.1\%$	$\leq 8 \text{ ppm}/^\circ\text{C}$	+10/-3 mA	8 μVpp	-60 dB
TLVR2048	2.048 V	$\pm 0.1\%$	$\leq 8 \text{ ppm}/^\circ\text{C}$	+10/-3 mA	15 μVpp	-60 dB
TLVR2500	2.500 V	$\pm 0.1\%$	$\leq 8 \text{ ppm}/^\circ\text{C}$	+10/-3 mA	18 μVpp	-60 dB
TLVR3000	3.000 V	$\pm 0.1\%$	$\leq 8 \text{ ppm}/^\circ\text{C}$	+10/-3 mA	22 μVpp	-60 dB
TLVR3300	3.300 V	$\pm 0.1\%$	$\leq 8 \text{ ppm}/^\circ\text{C}$	+10/-3 mA	25 μVpp	-60 dB
TLVR4096	4.096 V	$\pm 0.1\%$	$\leq 8 \text{ ppm}/^\circ\text{C}$	+10/-3 mA	29 μVpp	-60 dB
TLVR5000	5.000 V	$\pm 0.1\%$	$\leq 8 \text{ ppm}/^\circ\text{C}$	+10/-3 mA	35 μVpp	-58 dB

Notes: Force/Sense (Kelvin); use without galvanic isolation in enclosed/class II equipment.

TOR-RF

Schematic Diagram



TOR-RE

AC/DC regulator module in a TO-220-like PCB format. 85–264 VAC (50/60 Hz) or 120–370 VDC input. Stabilized DC output with $\pm 2\%$ accuracy. Body dimensions: 10 × 15 × 5 mm. Thermal range: -40°C to $+120^{\circ}\text{C}$. Continuous short-circuit protection with self-healing.



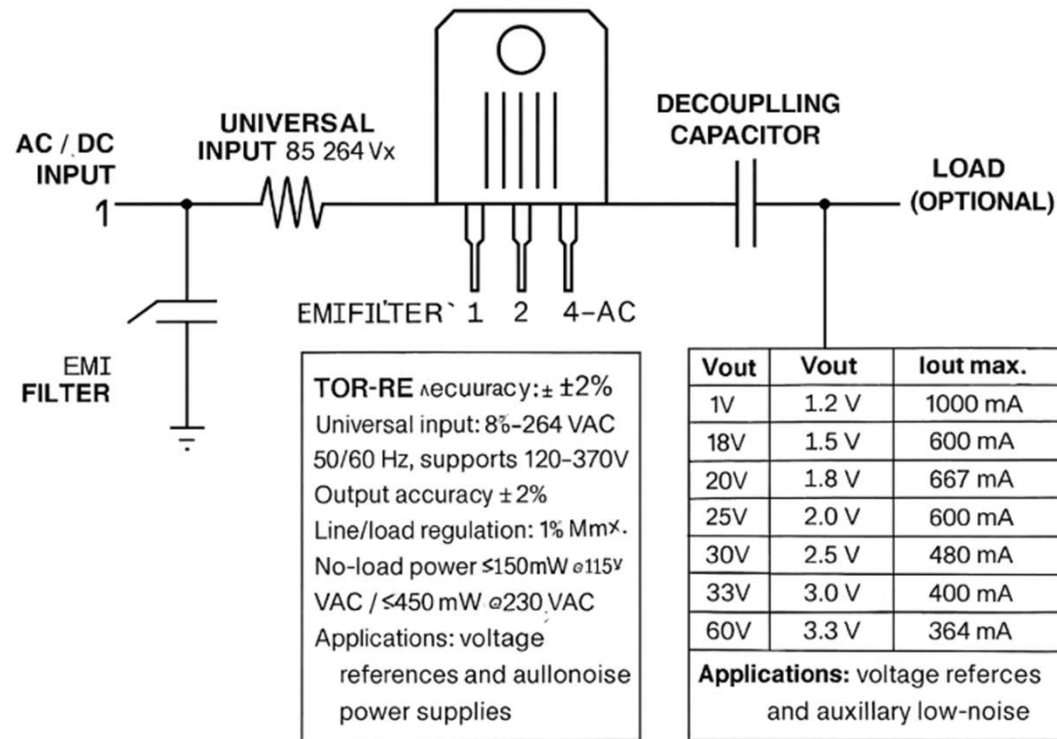
Product information

- **Universal input:** 85–264 VAC (50/60 Hz); supports 120–370 VDC.
- **Output accuracy:** $\pm 2\%$; line/load regulation: 1% max.
- **Ripple & noise (20 MHz):** 40 mVp-p max.
- **Hold-up:** ≥ 5 ms, start-up: ≤ 5 ms (115/230 VAC).
- **No-load power consumption:** ≤ 150 mW @115 VAC; ≤ 450 mW @230 VAC.
- **Protections:** continuous short circuit, overload, and overvoltage via regulation loop.
- **Format:** quasi-TO-220, 4-pin, 10 × 15 mm footprint; 2.0 mm pitch.
- **Pinout:** 1-AC | 2-VOUT+ | 3-GND | 4-AC.
- **Applications:** voltage references and low-noise auxiliary power supplies; low-power sensors/logic.

Código	Vout	Iout máx.	Código	Vout	Iout máx.
VREG_012	1,2 V	1000 mA	VREG_050	5,0 V	240 mA
VREG_015	1,5 V	800 mA	VREG_090	9,0 V	133 mA
VREG_018	1,8 V	667 mA	VREG_120	12,0 V	100 mA
VREG_020	2,0 V	600 mA	VREG_150	15,0 V	80 mA
VREG_025	2,5 V	480 mA	VREG_180	18,0 V	67 mA
VREG_030	3,0 V	400 mA	—	—	—
VREG_033	3,3 V	364 mA	—	—	—

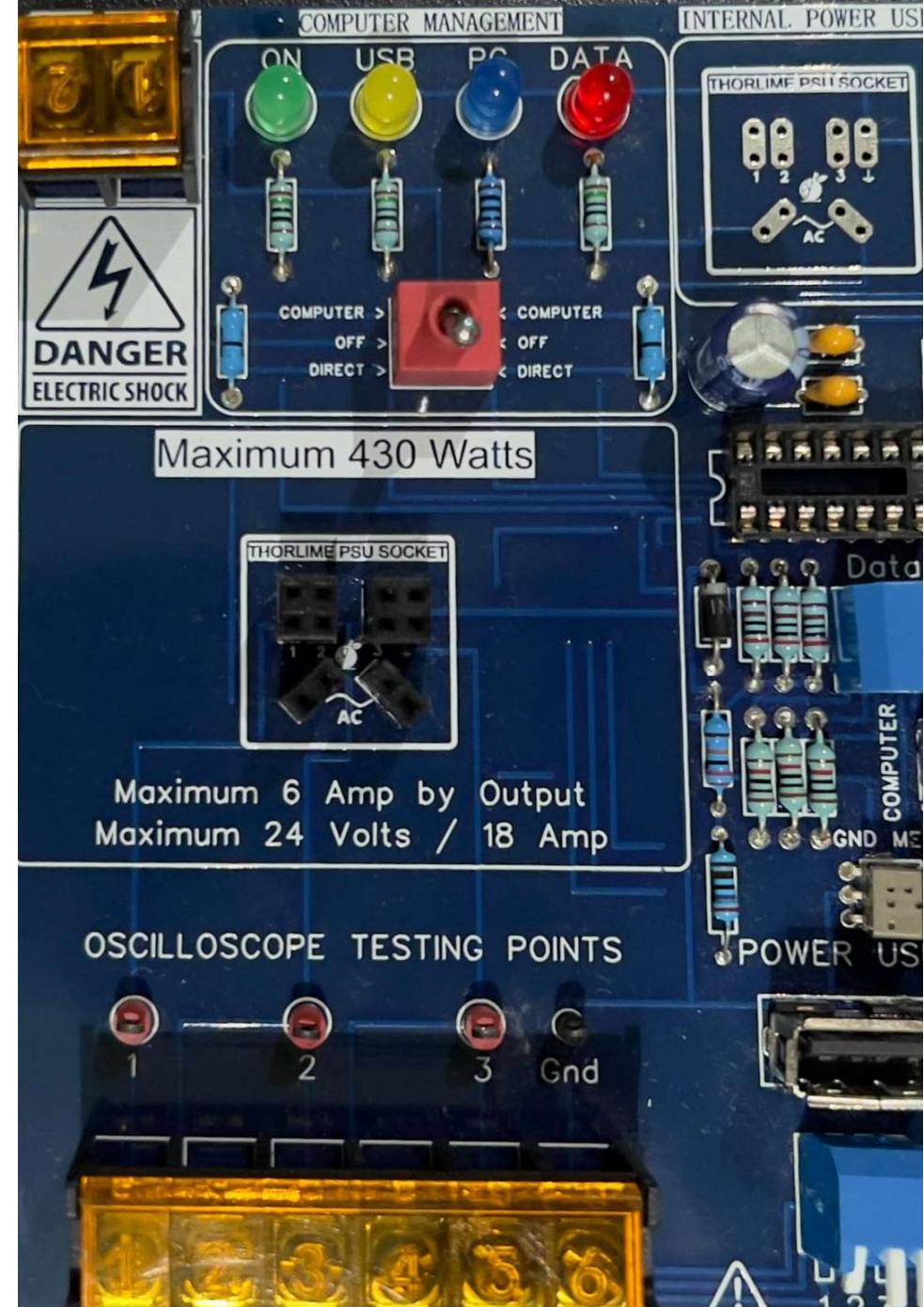
TOR-RE

Schematic Diagram



Development Tools

Tool for developers, integrates digital oscilloscope, direct connection to development PC and output for physical oscilloscope.





Our Vision

*“To be present in most electronic devices
produced worldwide”*