

simple_led_routed

Design Report

Rev 1 | 2026-09-10 | jlcpcb

kicad-tools 0.20.0

Board Summary

Property	Value
Layers	2 copper (F.Cu, B.Cu)
Footprints	3 (1 SMD, 2 THT, 0 other)
Nets	3
Traces	2 segments
Vias	0
Board Size	25.0 x 20.0 mm

Design Overview

Theory of Operation

Simple LED - Hello World

Minimal LED circuit

5V input, 330 ohm resistor, LED

Power Architecture

Power Rails: GND, PWR_FLAG, VCC

Assembly Notes

1 polarized component

- **Polarized components:** 1 -- check orientation markings

Hand-Solder (THT) Components

The following 2 through-hole components are **excluded from the SMT pick-and-place file** and must be hand-soldered (or wave/selective-soldered) after SMT assembly. They appear in the BOM for sourcing.

Value	Package	Qty	References
LED	LED_D5.0mm	1	D1
PWR	PinHeader_1x02_P2.54 mm_Vertical	1	J1

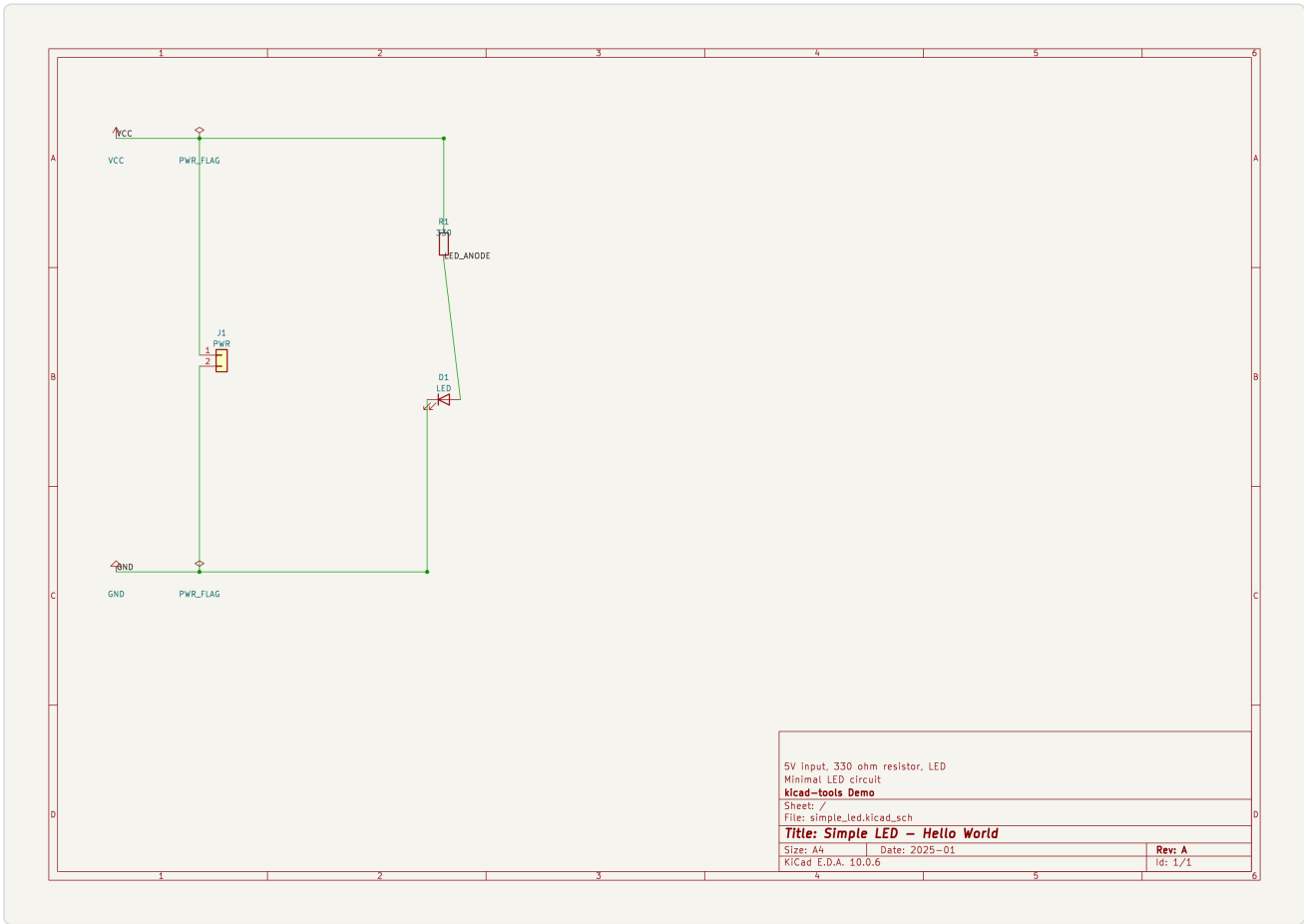
ERC Status

Metric	Count
Errors	0
Warnings	0

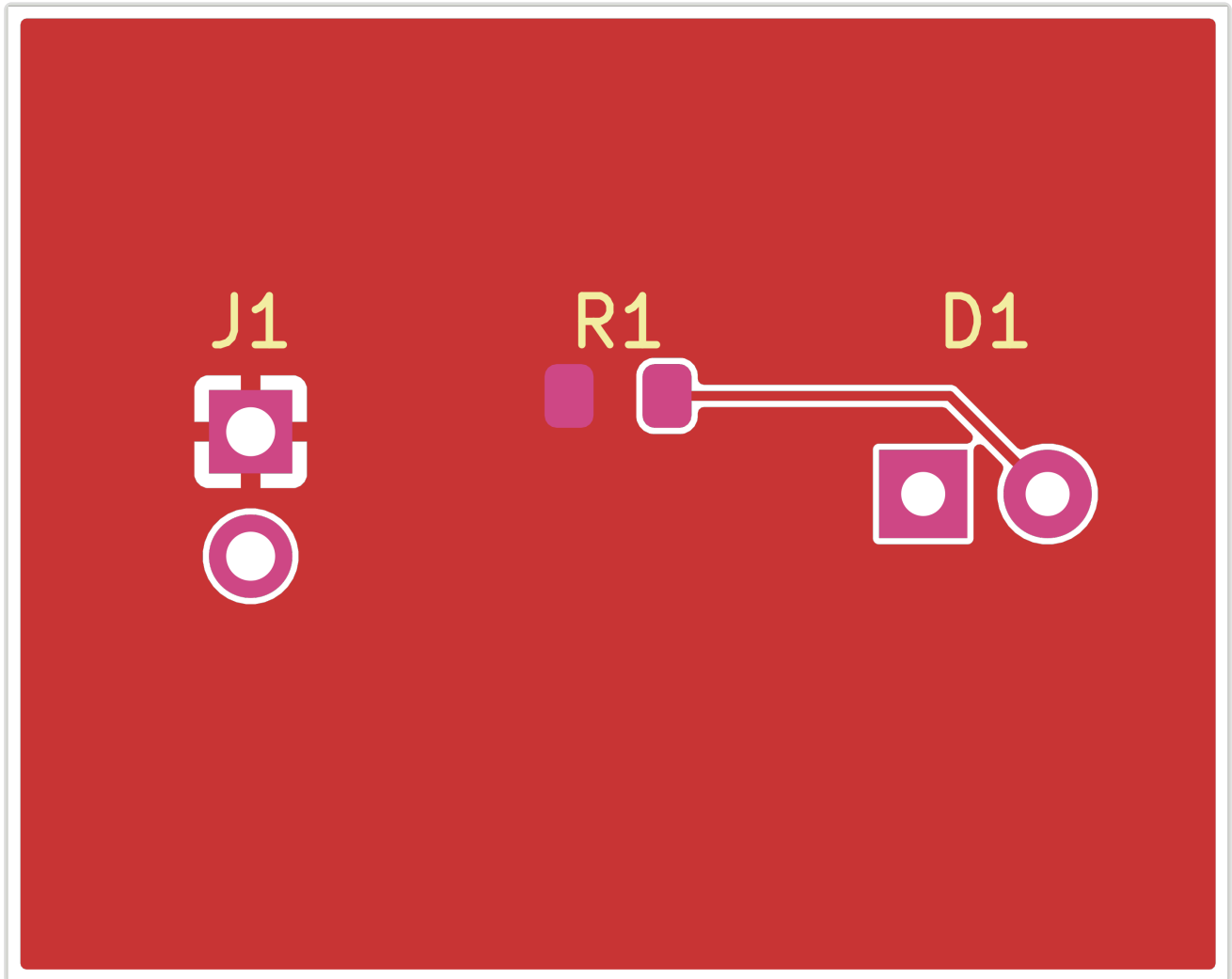
Status: SKIPPED -- ERC skipped by user request

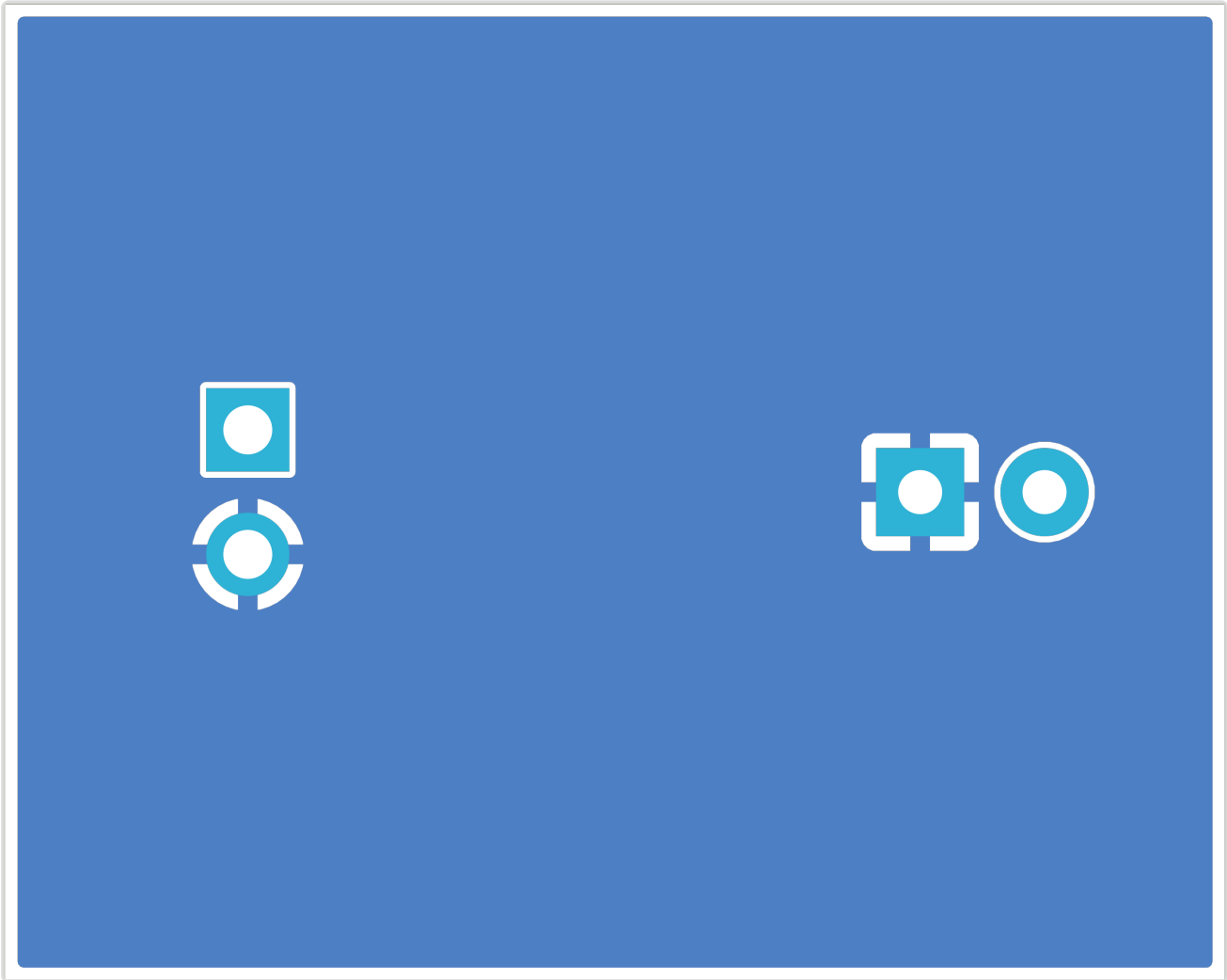
Schematic Overview

Schematic: simple_led

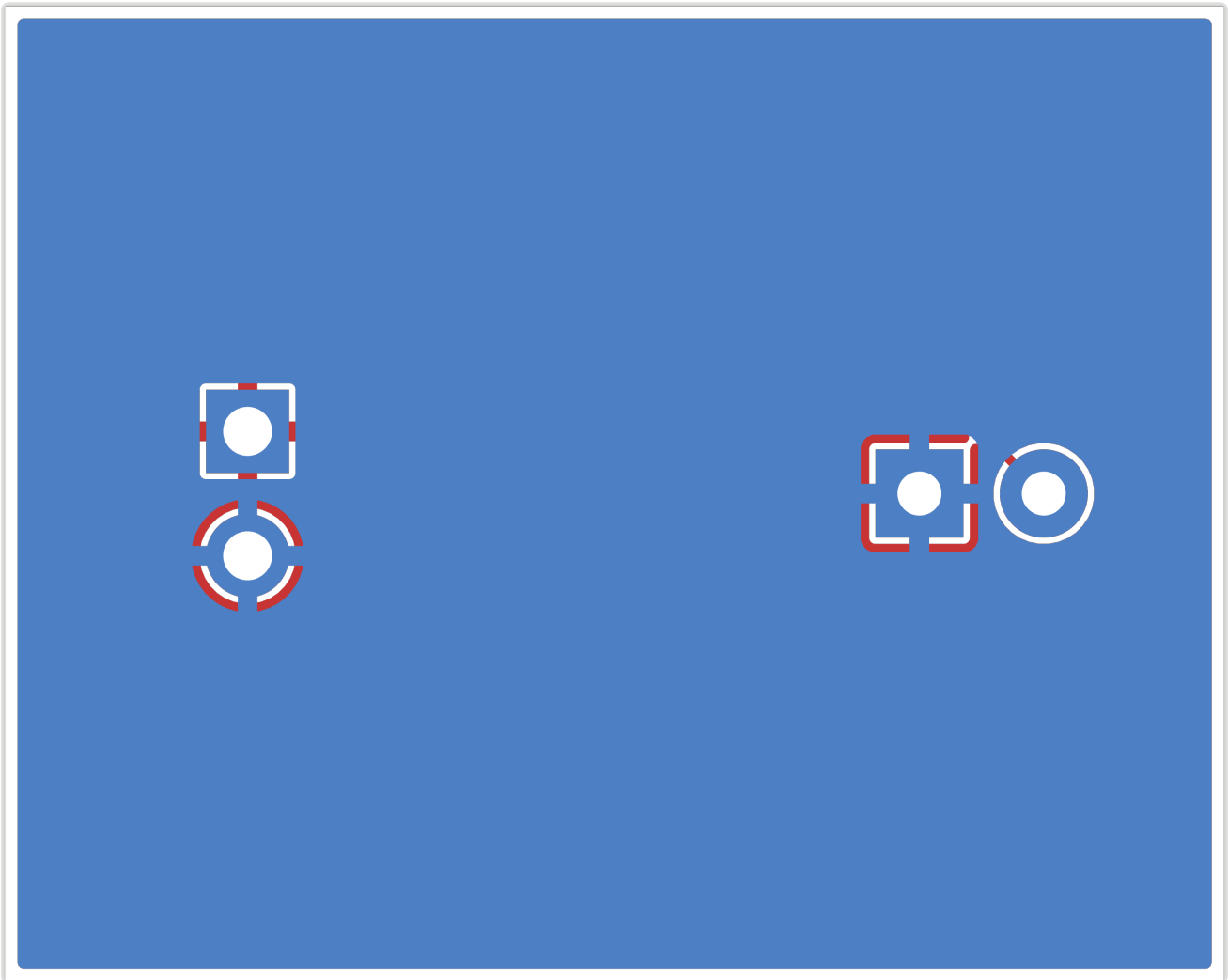


PCB Layout

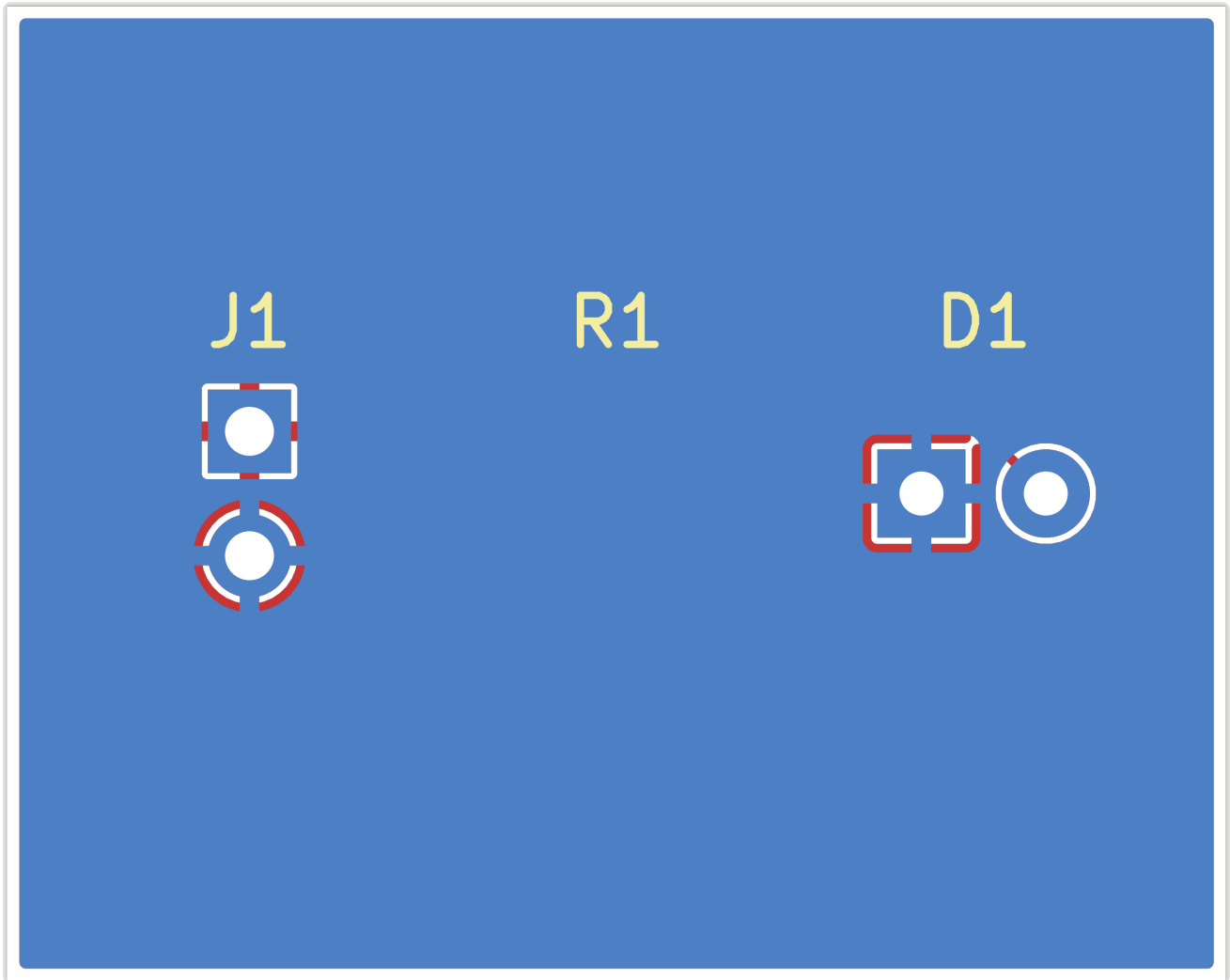




Copper

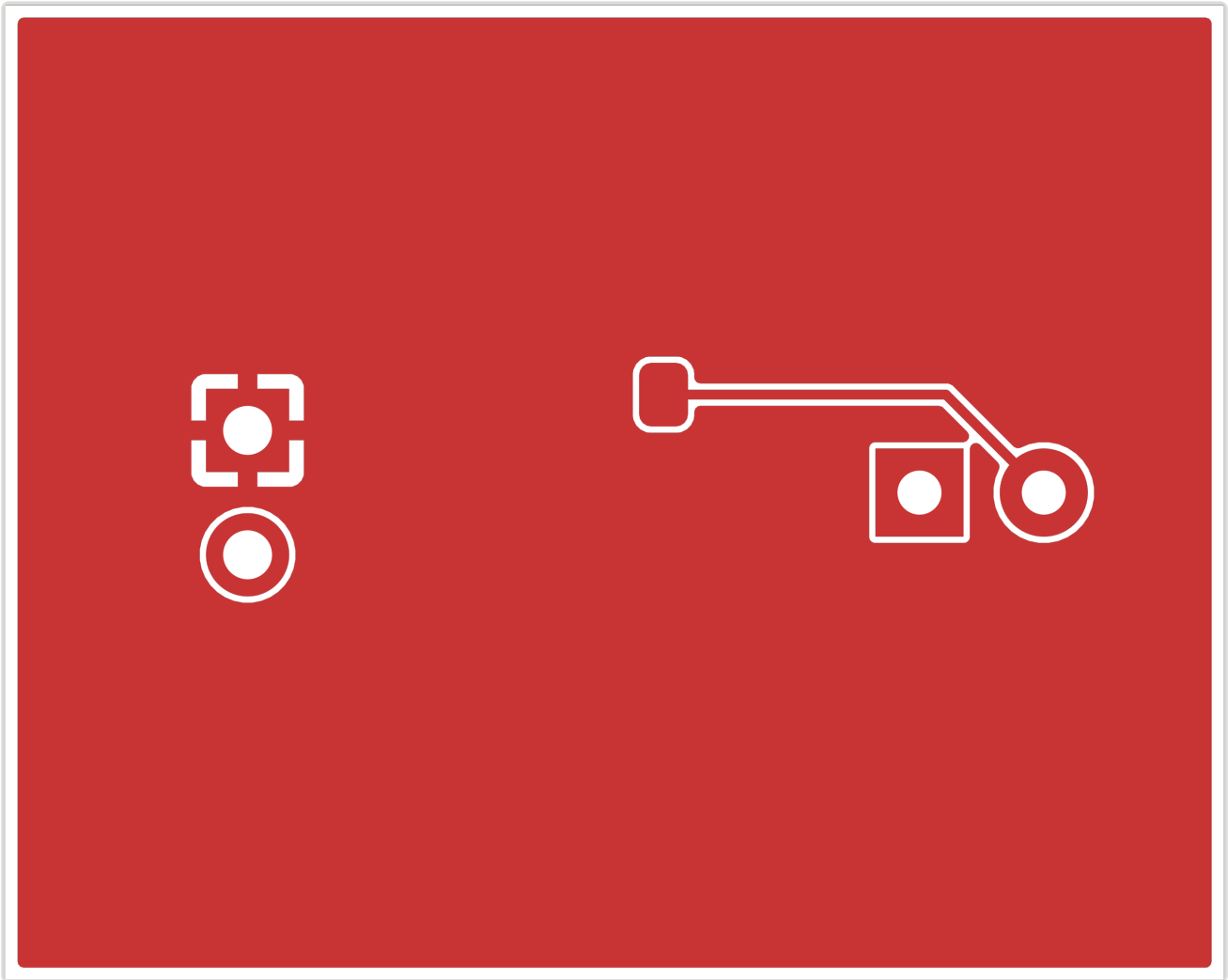


Assembly



Copper Layers

F.Cu



B.Cu



Bill of Materials

Value	Package	Qty	References
LED	LED_D5.0mm	1	D1
PWR	PinHeader_1x02_P2.54 mm_Vertical	1	J1
330	R_0805_2012Metric	1	R1

DRC Status

Metric	Count
Errors	0
Warnings	0
Blocking	0

Status: PASS

Manufacturing Readiness

Verdict: READY

Action Items

- **[OPTIONAL]** Verify zone fill in KiCad for 2 zone-connected nets

Routing Status

Metric	Value
Signal Net Completion	100.0% (1/1)
Overall Completion	100.0%
Complete Nets	3 / 3
Zone-Connected Nets	2
Incomplete Nets	0
Unconnected Pads	0

Zone-Connected Nets

- GND
- VCC

Cost Estimate

Metric	Per Board (estimated)
PCB Fabrication	~0.5 USD
Components (estimated)	~0.12 USD
Assembly (estimated)	~1.92 USD
Total (estimated)	~2.55 USD
Batch Quantity	5
Batch Total (estimated)	~12.73 USD