SYNShop DefCon 34 - 2026 Type 1 Badge Assembly Instructions

These instruction are for the DC2026_Type1 badge. These badges are simple through-hole practice projects and the builder should only need minimal experience in soldering through-hole devices.

The Type1 badge can be powered with 3v by an SAO host or a CR2032 coin cell battery holder. Only one should be active at a time. REMEMBER, DO NOT use the battery with the SAO connected.

The SAO connector I2C lines (SDA & SCL) and test point lines are available for those experimenting with SAO 'hacks'.

To Start

Insure that you have all of the parts required. Refer to the parts list below.

Reference	Value	Description	Qty
BT1	3v 2032	HOLDER COIN 20MM PC PIN	1
D1,D2	LED	LED 5mm Round T/H	2
J1	SAO-2x3	CONN HEADER VERT 6POS 2.54MM	1
R1,R2,R3	91	RES 91 OHM 5% 1/4W AXIAL	3
B1	CR2032	LITHIUM 3V COIN 20MM	1
PCB		1.6" dia PCB	1

Part Orientation

The LEDs have a flat edge that indicates the Cathode (negative) pin as shown in the figure below.

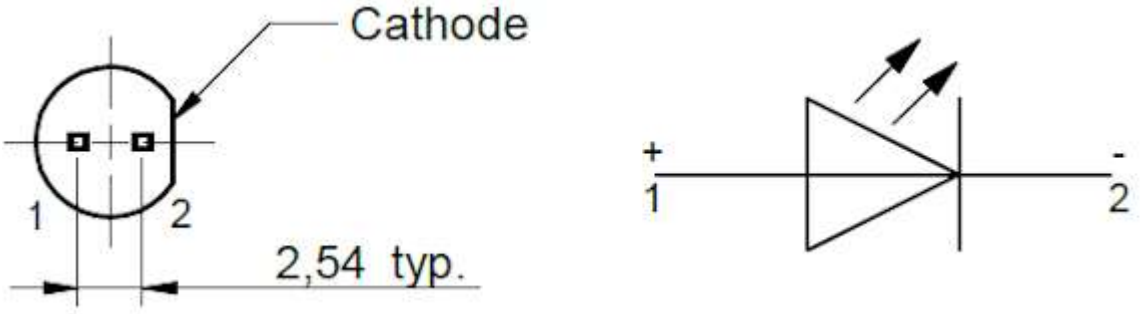

Figure 1

The diode D3 has a stripe for the cathode end as shown on the Printed Circuit Board (PCB).

Notes:

1. The resistors, diode, and LEDs are mounted on the front side. The coin battery holder and SAO connector are mounted on the back side.
2. The SAO test pins have no components to mount but are spaced at 0.1" for standard pin headers or sockets.

Assembly Suggestions

05/22/26

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1. Begin with the through-hole resistors, R1 and R2. Bend the leads to match the spacing on the PCB and slide the resistor leads into it holes from the top of the board. A piece of blue painters tape can be used to hold the resistor in place when the PCB is turned over to access the bottom side. Through-hole devices are generally inserted from the top side and soldered on the bottom side.
2. Apply solder and soldering iron tip to the one of the resistor leads and pad at the same time. Remove the solder and soldering iron tip after the solder flows around the lead for one to two seconds.
3. Repeat for the other resistor lead.
4. Repeat steps 1-3 for R3.
5. Repeat steps 1-3 for the LEDs D1 and D2.
6. Place the batter holder on the bottom side of the board and hold it in place with a small piece of blue painters tape as before.
7. Solder the batter holder pins from the top side of the board.
8. Repeat steps 6-7 for the SAO connector J1.
9. Install a coin battery or mount the board on a SAO host to apply power and test that the LEDs light up.

References

ref1: DC2026_Type1_SCH.pdf – Schematic drawing
ref2: DC2026_Type1_PCB_F.pdf – Printed circuit layout
ref3: DC2026_Type1_PCB_B.pdf – Printed circuit layout