

Poke-home Connector MCPCB
with thermistor for LZP emitter family

LZP-H0xxT1

4x6 configuration



Key Features

- Poke-home connectors already mounted on the MCPCB for easy connections
- 1-channel configuration allows for easy driver control for LZP emitters
- Very low Thermal Resistance for MCPCB adds only 0.1°C/W
- Zener Diodes for ESD protection
- On-board thermistor for common constant current source with thermal feedback option
- LuxiGen LZP Lens family (15° / 23° / 32°) holders align with the MCPCB cutouts
- Optional center die control for custom emitters

Description

The LZP-HxxxT1, MCPCB with three 2-pin poke-home connectors provides a convenient method to connect LED Engin’s LZP emitters. One 2 pin poke-home connector supports 4 parallel strings of 6 die in series; a second one is for connecting to the thermistor, and a third one is available for an optional center die for custom emitters. Four recessed features allow the use of M3 or #4-40 screws to mount the MCPCB to a heat sink. There are additional mounting holes for the complementary TIR lenses and Zener diodes for enhanced ESD protection.

Standard Product Part Numbers additional parts based on emitter nomenclature

| | |
|------------|---|
| LZP-H0WWT1 | LZP-series, Warm White 24 die emitter mounted on connector board in 4x6 configuration with 1000kΩ thermistor |
| LZP-H0NWT1 | LZP-series, Neutral White 24 die emitter mounted on connector board in 4x6 configuration with 1000kΩ thermistor |
| LZP-H0CWT1 | LZP-series, Cool White 24 die emitter mounted on connector board in 4x6 configuration with 1000kΩ thermistor |

Thermistor Options

| Part Designator | Thermistor type | Resistance @ 25° |
|-----------------|-----------------------------|------------------|
| -T1 | Murata, PN: NCP15WF104F03RC | 100kΩ |

R θ_{J-B} Lookup Table

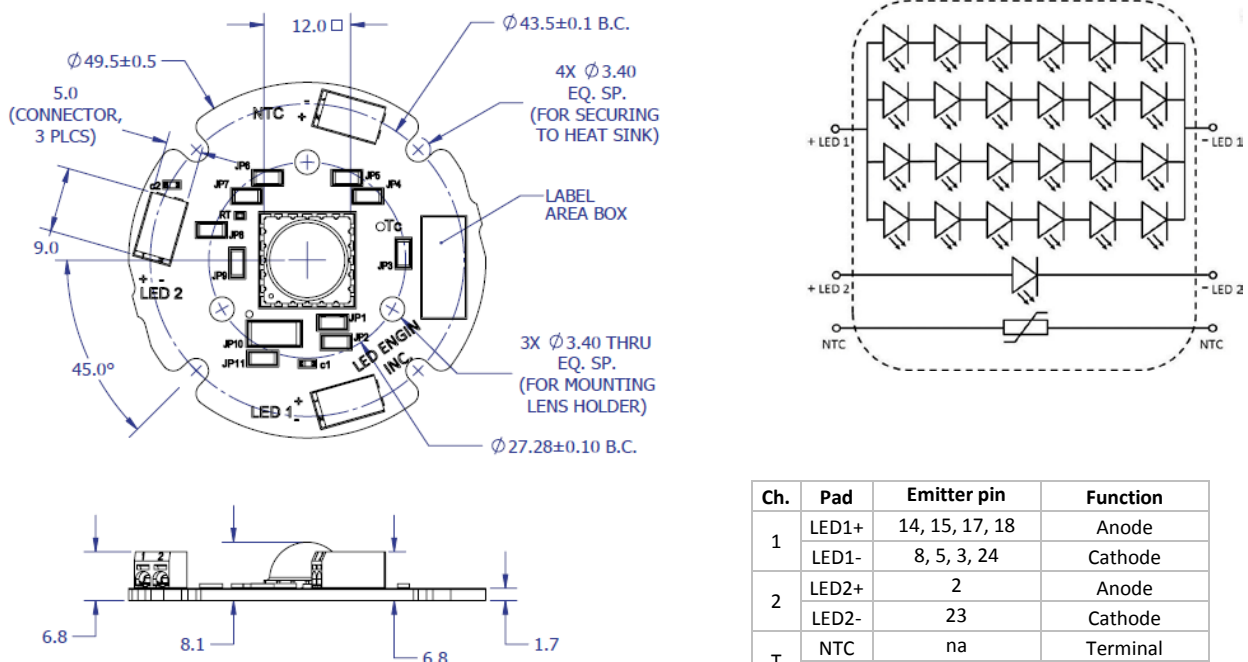
| Product | Emitter θ_{J-C} | | MCPCB $R\theta_{C-B}$ | | Emitter + MCPCB $R\theta_{J-B}$ |
|------------|---------------------------|---|--------------------------|---|------------------------------------|
| LZP-HMPCPB | 0.6°C/W | + | 0.1°C/W | = | 0.7°C/W |

- $R\theta_{J-B}$ is the combined thermal resistance from the LED die junction to the copper core on MCPCB ($R\theta_{J-C} + R\theta_{C-B} = R\theta_{J-B}$).

Operating Temperatures:

Maximum Operation Temperature measured at Tc or thermistor: 90°C

Emitter on 2-channel MCPCB Dimensions (mm)



| Ch. | Pad | Emitter pin | Function |
|-----|-------|----------------|----------|
| 1 | LED1+ | 14, 15, 17, 18 | Anode |
| | LED1- | 8, 5, 3, 24 | Cathode |
| 2 | LED2+ | 2 | Anode |
| | LED2- | 23 | Cathode |
| T | NTC | na | Terminal |
| | NTC | na | Terminal |

Note for Figure 1:

- Unless otherwise noted, the tolerance = ± 0.2 mm. angle = $\pm 1^\circ$
- Slots in MCPCB are for M3 or #4-40 mounting screws. Maximum torque should not exceed 1N-m (8.9 lbf-in)
- LED Engin recommends plastic washers to electrically insulate screws from solder pads and electrical traces.
- LED Engin recommends using thermally conductive interface material when attaching the MCPCB to a heatsink
- Use solid or stranded wires with gauge size, 18, 20, 22 or 24AWG. See section on Wire Insertion and Extraction for further instructions.

Components used

| | | |
|-------------|-----------------------|---------------------------------|
| MCPCB: | SuperMCPCB (copper) | (Bridge Semiconductor) |
| ESD chips: | BZX585-C30 | (NXP, for 6 LED dies in series) |
| | BZX585-C9 | (NXP, for optional center die) |
| Thermistor: | NCP15WF104F03RC | (Murata, 100kOhm) |
| Connectors: | 00-9276-002-0-21-1-06 | (AVX, poke-home) |

Wire Insertion and Extraction Instructions

For the connectors it is recommended to use solid or stranded wires with gauge size, 18, 20, 22 or 24AWG. Push in and then give slight tug on the wire to confirm that it is properly engaged.

Extraction Tool References:

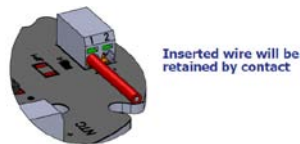
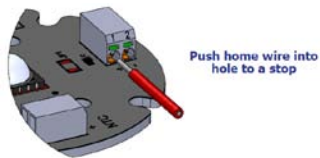
Thin Blade Wire Extraction Tool: AVX P/N - 0692-7670-0101-000

Miniature Precision Screw Driver, 0.047" Tip Width

Wire Insertion

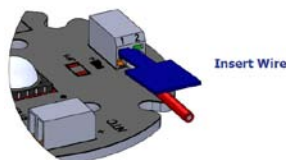
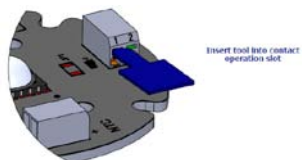
Solid conductor

- Strip insulation length 4-5mm
- Insert into appropriate hole to a stop
- Inserted wire will be retained by contact



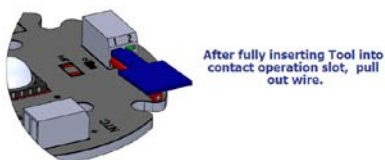
Stranded wire conductor

- Twist strands together
- Insert tool into contact operation slot
- Insert wire
- Remove tool



Wire extraction

- Insert tool into contact
- Extract wire
- Remove tool



Company Information

LED Engin, based in California's Silicon Valley, specializes in ultra-bright, ultra compact solid state lighting solutions allowing lighting designers & engineers the freedom to create uncompromised yet energy efficient lighting experiences. Our LuxiGen™ Platform— an emitter and lens combination or integrated module solution, delivers superior flexibility in light output, ranging from 3w to 90w, a wide spectrum of available colors, including whites, multi-color and UV, and the ability to deliver upwards of 5,000 high quality lumens to a target. The small size, yet remarkably powerful output, allows for a previously unobtainable freedom of design wherever high-flux density, directional light is required. www.LED Engin.com

Please contact Sales@LED Engin.com or (408) 492-0620 for more information.