

LZP-series Support Infrastructure

LZP-series 25-die emitter package

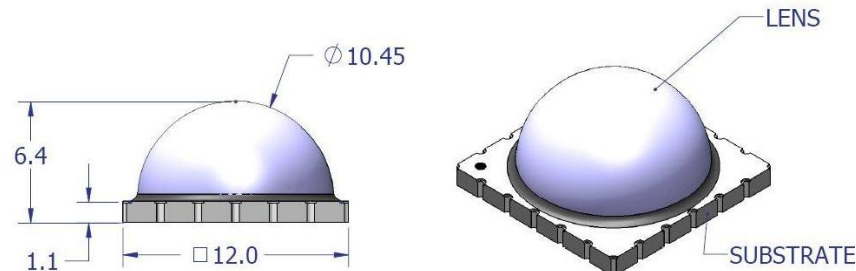
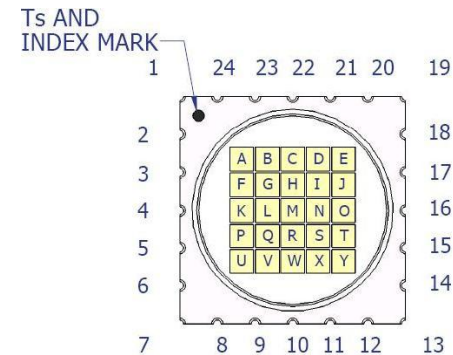
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Introduction LZP-series Emitter

Key Features

- Highest luminous flux / area single LED emitter
 - 40mm² light emitting area
- Compact 12.0mm x 12.0mm x 6.7mm package
- Unique power package design allows emitter to be driven reliably at 1000mA/die, 90W
- Industry leading lumen maintenance
- Surface mount ceramic package with integrated glass lens
- JEDEC Level 1 for Moisture Sensitivity Level
- Lead (Pb) free and RoHS compliant
- Reflow solderable (up to 6 cycles)
- Emitter available on copper core MCPCB
- Complementary TIR lens family (LLxx-3T11) specifically designed for LZP-series LEDs

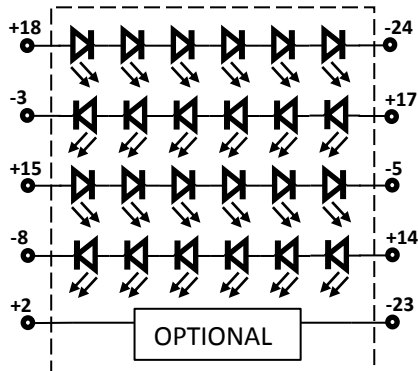


Driver Solutions for LZP-series

Electrical Layout

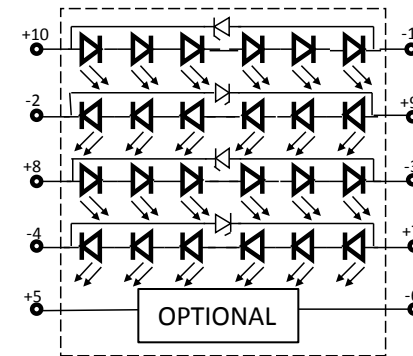
Emitter

- Configure is 4 strings of 6 dies in series (4x6) and one optional die or detector



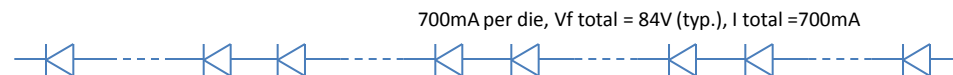
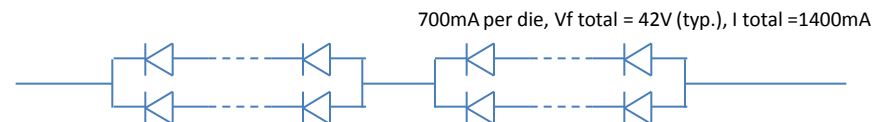
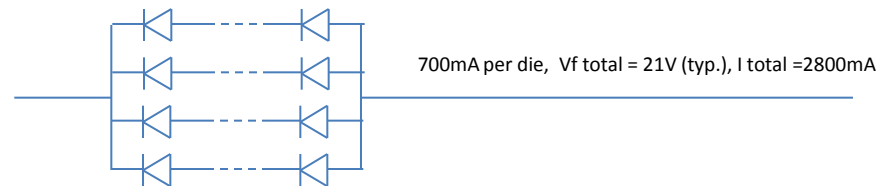
MCPCB

- Integrated zener diodes for ESD protection
 - BZT52C36LP of Diodes Inc. (36V, 250mW zener diode)



Drive options (24 die)

- 4x6
- 2x12
- 1x24



Driver Solutions for LZP-series

Drivers units

MeanWell

www.meanwell.com

- **HLG-100-24**

- Input voltage: 110-220VAC, Current control: setscrew in supply
- 1Ch with 2.5-4A (12-24V).

High Perfection Tech

www.highperfection.com.tw / Magtech: www.magtechind.com

- **LP1090-24-YZ-E**

- Input voltage: 110-220VAC, Current control: setscrew in supply
- 1Ch with 2.5-4A (12-24V).

Excelsys

www.excelsys.com/products/shelf_power.html

- **LXV-100**, 80W driver

EldoLED

www.eldoled.com

- **AC POWERdrive 106**

- Input voltage 110-277VAC, Control: DMX, DALI, 0-10V, switch-dim
- 4Ch with 200-1050mA pro channel (x-60V, can run with 3Ch in case of 25th die. Extra channel potentially for cooling fan)

- **Powerdrive 90** (needs additional power supply)

- Input voltage up to 32VDC, Control: DMX
- 4Ch with 200-1050mA pro channel (x-30V, the 25th die need to be in series with one of the other strings)

- **LM Dot Connector (PCB)** (needs additional power supply)

- Input voltage up to 32VDC, Control: DMX
- 4Ch with 200-1050mA pro channel (x-30V, the 25th die need to be in series with one of the other strings)

- **LM Dot Standard (PCB)** (needs additional power supply)

- Input voltage up to 32VDC, Control: DMX
- 4Ch with 200-1050mA pro channel (x-30V, the 25th die need to be in series with one of the other strings)

Driver Solutions for LZP-series

Driver IC's

National: www.national.com [Ledengin](#)

- LM3409HV
 - Buck driver up to 75V
- LM3223
 - Buck driver up to 75V
- LM3464
 - 4 Channel led driver with dynamic headroom control and thermal feedback
 - [LM3464 National demonstration video](#)

iWatt: www.iwatt.com [iW1710](#)

- iW1710 (requires 4 IC's, ask iWatt for details)
 - 4 Channels of 6 dies

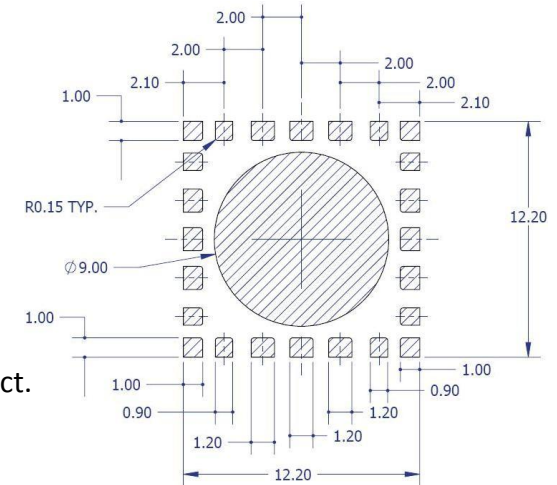
Thermal Solutions for LZP-Series

LZP-series 25 die package

- Compact 12.0mm x 12.0mm package
- Low thermal resistance of 0.35C/W
- Thermal slug of 9mm in diameter

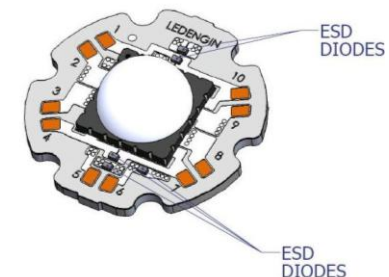
MCPCB with Copper Core

- Copper core is in direct contact with LED thermal slug
 - Bridge Semiconductors offers copper boards with direct emitter slug contact.
 - www.bridgesemiconductor.com Super-mcpcb
- MCPCB thermal resistance is 0.15C/W
- LED + MCPCB thermal resistance is only 0.5C/W
- 5 channel electrical arrangement
 - 4 channels with 6 white LEDs each
 - 1 channel for optional LED or detector



Suggested Materials

- Solder:
 - SAC305/SAC387, Indium 5.1 (no-clean, lead free, 250deg)
 - www.indium.com Indium5.1
- Thermal interface materials:
 - MG Chemicals 8331 (general purpose, electrically conductive epoxy)
 - AIT Technology ME7359-LV (diamond filled, non electrically conductive epoxy)
 - Electrolube EHTC (paste)



Thermal Solutions for LZP-Series

Heatsinks

AAVID THERMALLOY

www.aavidthermalloy.com

- 82160 0.42 C/W (P) 100x205x64 1.34kg

ATS Extrusion Profiles

www.gats.com

- ATS-EXL31-150-R0 0.26 C/W (1) 152x154x57
- ATS-EXL424-165-R0 0.65 C/W (1) 165x188x17
- ATS-57000-C1-R0 0.51 C/W (1) 56x56x52

CST crydom

www.crydom.com

- HS053 0.5 C/W (P) 124.4x152.4x88.9
- HS072 0.7 C/W (P) 100.3x139.7x66.8

Cooliance

www.cooliance.com

- Coolstrate CSL850Q1 0.41 C/W (A) 92x82Ø
 - Advertized for lighting applications

Nuventix

www.nuventix.com

- SP38S-CM005-015 0.70 C/W (A) 57x38Ø
 - PAR38-Ultra High Performance 60W cooler
- SSSLS-CM012-007 0.63 C/W (A) 57x138Ø
 - Universal DLM cooler, 48W High Performance

Newport

www.newport.com 764H-061

- 764H-061 (TEC) 61W down to 25deg
 - R&D and scientific use

Optical Solutions for LZP-Series

Lenses

Custom lenses to obtain the highest quality and quantity of light in beam

- Narrow Flood (23°) and Flood (35°) lens options maximize Lux on Target and provide a smooth, uniform light gradient across beam
- Spot (15°) lens option in development
- All lenses come with holders www.ledengin.com Lenses

Specifications – Typical Values

Parameter	Value
Viewing Angle (FWHM)	23° and 32°
Optical Efficiency	80%
Height from Seating Plane (holder)	25.0mm
Maximum Width	47.50mm

