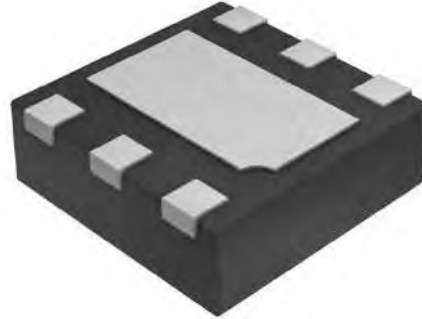


AB-EZPC (AC IC series) datasheet

Current regulator with bias voltage rectification

Features

- Automotive applications
- DFN packages
- PWM dimmable
- Built-in rectification circuit
- Accurate constant current ($I_s \pm 3\%$)
- Over Current Protection (OCP)
- Over temperature protection (OTP)



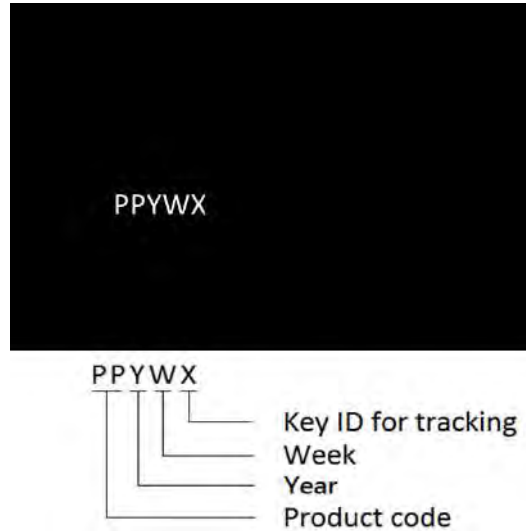
Description

AB-EZPC is a constant current regulator with built-in bias voltage rectification circuit. It is designed to maintain constant current and hence constant luminance for DC powered LED lighting applications. AB-EZPC rectifies power input for the LED string to operate regardless of the polarity of the bias voltage. Additionally, to ensure system reliability, it is built with thermal protection function (OTP).

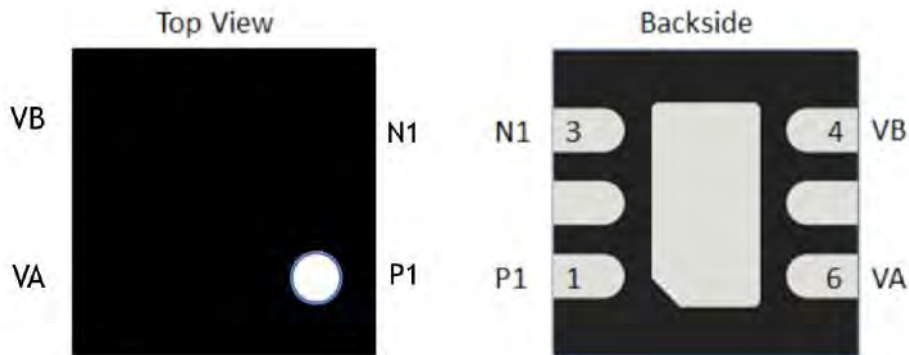
*The information in this document is subject to change without American Bright Optoelectronics Corp. notice.

Marking Information

DFN Package



Pin Configuration (Top View & Backside)



Pin Description

| Pin No. | Name | Function |
|---------|-----------|---|
| 1 | N1 | Output pin to connect external LED negative (-) |
| 2 | NC | No connection |
| 3 | P1 | Output pin to connect external LED positive (+) |
| 4 | VA | Power input pin A |
| 5 | NC | No connection |
| 6 | VB | Power input pin B |

Ordering Information

| Part number | Power (W) | Output Current (mA) | Applied Voltage (V) |
|-------------|-----------|---------------------|---------------------|
| AB-EZPC-05 | 0.5W | 25mA | 0.5-40V |
| AB-EZPC-10 | 1.0W | 50mA | 0.5-40V |
| AB-EZPC-20 | 2.0W | 100mA | 0.5-40V |

Absolute Maximum Ratings

| Parameter | Value |
|---|-------------|
| Supply Voltage VA-VB | 38V |
| Junction Temperature | 150°C |
| Operating ambient temperature TA | -20°C-85°C |
| Storage temperature range | -40°C-150°C |
| DFN Package thermal resistance (junction to ambience) | 50°C/W |
| Lead temperature (All Pb free packages, soldering, 10s) | 260°C |
| ESD voltage protection, human body model | 4KV |

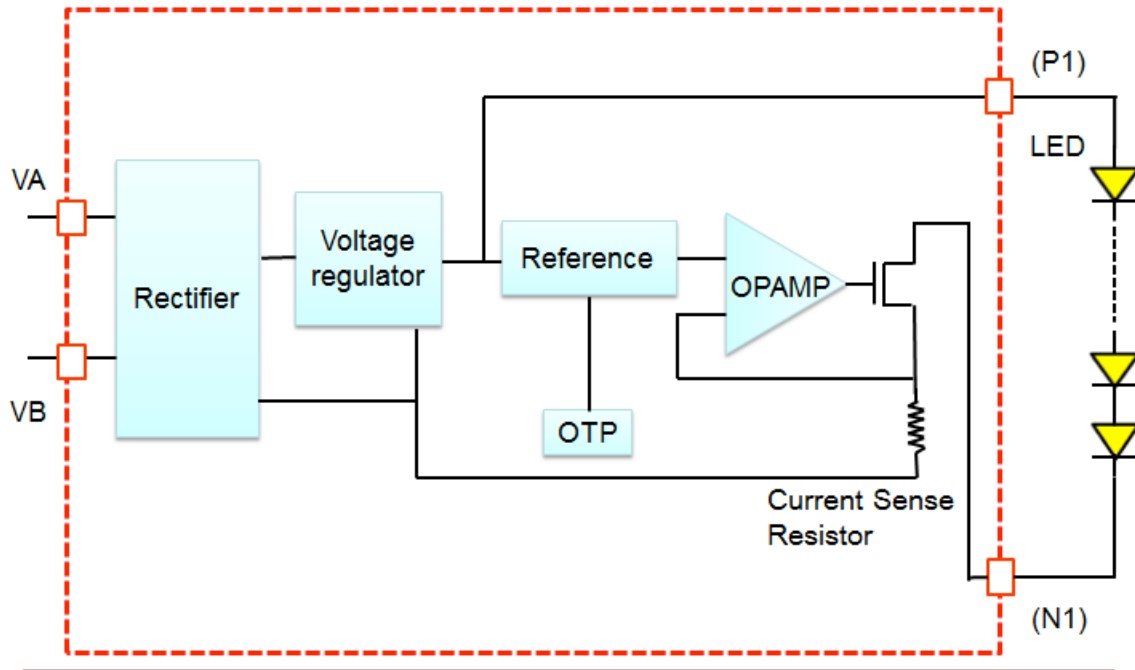
Recommended Operating Conditions

| Symbol | Parameter | Min/Max | Unit |
|--------|-------------------------------|----------|------|
| VA-VB | Supply Voltage | 1.8 / 40 | V |
| TA | Operating ambient temperature | -20 / 85 | °C |

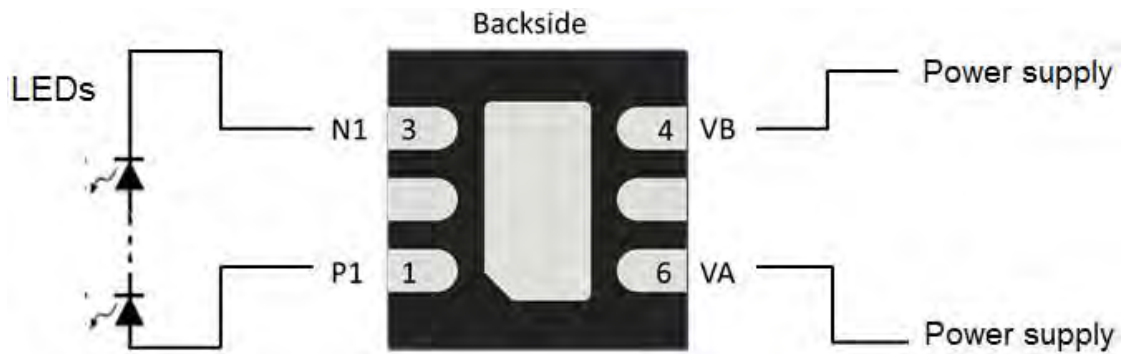
Electrical Characteristics (TA=+25°C, unless otherwise specified)

| Characteristic | Symbol | Condition | Min. | Typ. | Max. | Unit |
|------------------------------|--------|----------------------------|------|------|------|------|
| Output current | Is | VA-VB > 1.8 | 25 | | 200 | mA |
| Output ramp down temperature | T1A | Start point (100% current) | | 120 | | °C |
| Shutdown temperature | T2 | IP = 0mA (0 current) | | 160 | | °C |

Function Block



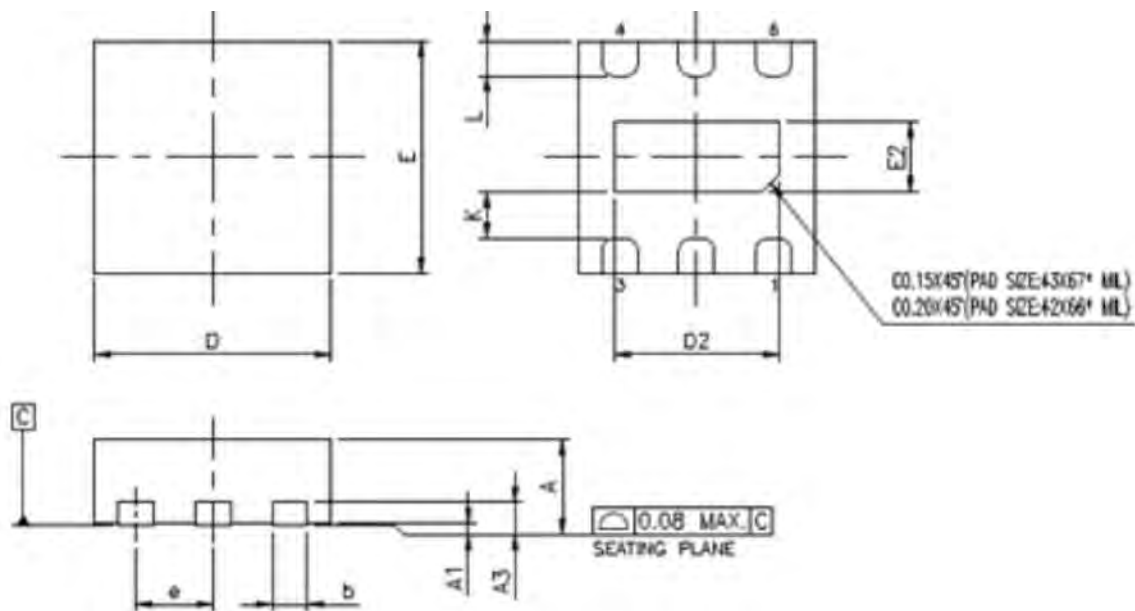
Application Note



Package Information

Dual Flat No-Lead (DFN) packages is lead-less, near Chip Scale Packages (CSP) with a low profile, moderate thermal dissipation for high power application, and good electrical performance. DFN is a surface mount plastic package with leads located at the bottom of the package, with the DFN having leads on two sides of the package versus on four sides for the QFN.

The dimension of currently available package is 2.0 x 2.0 x 0.75 mm. The electrical lead pitch is 0.65mm; six electrical pads exposed area are all 0.3 x 0.35 mm; central thermal pad exposed is 1.0 x 1.6 mm. (For AB-EZPC series only)



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