

Austin SuperLynx™ II SMT Non-isolated Power Modules: 2.4Vdc – 5.5Vdc input; 0.75Vdc to 3.63Vdc Output; 16A Output Current



RoHS Compliant



EZ-SEQUENCE™

Features

- Compliant to RoHS EU Directive 2002/95/EC (-Z versions)
- Compliant to ROHS EU Directive 2002/95/EC with lead solder exemption (non-Z versions)
- Flexible output voltage sequencing EZ-SEQUENCE
- Delivers up to 16A of output current
- High efficiency – 95% at 3.3V full load ($V_{IN} = 5.0V$)
- Small size and low profile:
33.00 mm x 13.46 mm x 8.28 mm
(1.300 in x 0.530 in x 0.326 in)
- Low output ripple and noise
- High Reliability:
Calculated MTBF > 11.12 M hours at 25°C Full-load
- Output voltage programmable from 0.75 Vdc to 3.63Vdc via external resistor
- Line Regulation: 0.3% (typical)
- Load Regulation: 0.4% (typical)
- Temperature Regulation: 0.4% (typical)
- Remote On/Off
- Remote Sense
- Output overcurrent protection (non-latching)
- Overtemperature protection
- Wide operating temperature range (-40°C to 85°C)
- *UL** 60950-1 Recognized, *CSA*† C22.2 No. 60950-1-03 Certified, and *VDE*‡ 0805:2001-12 (EN60950-1) Licensed
- ISO** 9001 and ISO 14001 certified manufacturing facilities

Applications

- Distributed power architectures
- Intermediate bus voltage applications
- Telecommunications equipment
- Servers and storage applications
- Networking equipment

Description

Austin SuperLynx™ II SMT (surface mount technology) power modules are non-isolated dc-dc converters that can deliver up to 16A of output current with full load efficiency of 95% at 3.3V output. These modules provide a precisely regulated output voltage programmable via external resistor from 0.75Vdc to 3.63Vdc over a wide range of input voltage ($V_{IN} = 2.4 - 5.5Vdc$). Austin SuperLynx™ II has a sequencing feature, EZ-SEQUENCE™ that enable designers to implement various types of output voltage sequencing when powering multiple modules on board. Their open-frame construction and small footprint enable designers to develop cost- and space-efficient solutions. In addition to sequencing, standard features include remote On/Off, remote sense, programmable output voltage, over current and over temperature protection.

* *UL* is a registered trademark of Underwriters Laboratories, Inc.
† *CSA* is a registered trademark of Canadian Standards Association.
‡ *VDE* is a trademark of Verband Deutscher Elektrotechniker e.V.
** *ISO* is a registered trademark of the International Organization of Standards

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only, functional operation of the device is not implied at these or any other conditions in excess of those given in the operations sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect the device reliability.

| Parameter | Device | Symbol | Min | Max | Unit |
|---|--------|-----------|------|---------------|------|
| Input Voltage Continuous | All | V_{IN} | -0.3 | 5.8 | Vdc |
| Sequencing Voltage | All | V_{SEQ} | -0.3 | $V_{IN, Max}$ | Vdc |
| Operating Ambient Temperature (see Thermal Considerations section) | All | T_A | -40 | 85 | °C |
| Storage Temperature | All | T_{stg} | -55 | 125 | °C |

Electrical Specifications

Unless otherwise indicated, specifications apply over all operating input voltage, resistive load, and temperature conditions.

| Parameter | Device | Symbol | Min | Typ | Max | Unit |
|--|---------------------------------|--------------------|-----|-----|------|------------------|
| Operating Input Voltage | $V_{O, set} \leq V_{IN} - 0.5V$ | V_{IN} | 2.4 | — | 5.5 | Vdc |
| Maximum Input Current ($V_{IN} = V_{IN, min}$ to $V_{IN, max}$; $I_O = I_{O, max}$; $V_{O, set} = 3.3Vdc$) | All | $I_{IN, max}$ | | | 16.0 | Adc |
| Input No Load Current ($V_{IN} = 5.0Vdc$, $I_O = 0$, module enabled) | $V_{O, set} = 0.75 Vdc$ | $I_{IN, No load}$ | | 25 | | mA |
| | $V_{O, set} = 3.3Vdc$ | $I_{IN, No load}$ | | 40 | | mA |
| Input Stand-by Current ($V_{IN} = 5.0Vdc$, module disabled) | All | $I_{IN, stand-by}$ | | 1.5 | | mA |
| Inrush Transient | All | I^2t | | | 0.1 | A ² s |
| Input Reflected Ripple Current, peak-to-peak (5Hz to 20MHz, 1 μ H source impedance; $V_{IN, min}$ to $V_{IN, max}$, $I_O = I_{O, max}$; See Test configuration section) | All | | | 100 | | mAp-p |
| Input Ripple Rejection (120Hz) | All | | | 30 | | dB |

CAUTION: This power module is not internally fused. An input line fuse must always be used.

This power module can be used in a wide variety of applications, ranging from simple standalone operation to being part of a complex power architecture. To preserve maximum flexibility, internal fusing is not included, however, to achieve maximum safety and system protection, always use an input line fuse. The safety agencies require a fast-acting fuse with a maximum rating of 20A (see Safety Considerations section). Based on the information provided in this data sheet on inrush energy and maximum dc input current, the same type of fuse with a lower rating can be used. Refer to the fuse manufacturer's data sheet for further information.