

Austin SuperLynx™ 12V SMT Non-isolated Power Modules: 10Vdc – 14Vdc input; 0.75Vdc to 5.5Vdc Output; 16A Output Current

RoHS Compliant



Applications

- Distributed power architectures
- Intermediate bus voltage applications
- Telecommunications equipment
- Servers and storage applications
- Networking equipment
- Enterprise Networks
- Latest generation IC's (DSP, FPGA, ASIC) and Microprocessor powered applications

Description

Austin SuperLynx™ 12V 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 92% at 3.3V output. These modules provide a precisely regulated output voltage ranging from 0.75Vdc to 5.5Vdc, programmable via an external resistor over a wide range of input voltage ($V_{IN} = 10 - 14Vdc$).

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)
- Delivers up to 16A output current
- High efficiency – 92% at 3.3V full load ($V_{IN} = 12.0V$)
- Small size and low profile:
33.0 mm x 13.46 mm x 8.28 mm
(1.30 in x 0.53 in x 0.326 in)
- Low output ripple and noise
- High Reliability:
Calculated MTBF = 4.4M hours at 25°C Full-load
- Constant switching frequency (300 kHz)
- Output voltage programmable from 0.75 Vdc to 5.5Vdc 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)
- 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

* 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	15	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}	10.0	12.0	14.0	Vdc
Maximum Input Current ($V_{IN}=10.0V$ to $14.0V$, $I_O=I_{O,max}$)	All	$I_{IN,max}$			9.5	Adc
Input No Load Current ($V_{IN} = 12.0Vdc$, $I_O = 0$, module enabled)	$V_{O,set} = 0.75 Vdc$	$I_{IN,No load}$		40		mA
	$V_{O,set} = 5.0Vdc$	$I_{IN,No load}$		100		mA
Input Stand-by Current ($V_{IN} = 12.0Vdc$, module disabled)	All	$I_{IN,stand-by}$		2		mA
Inrush Transient	All	I^2t			0.4	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			30		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 15 A (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.