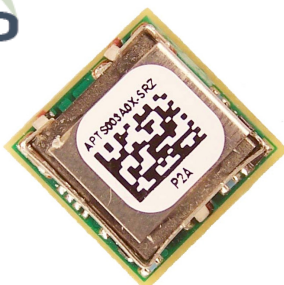


12V Pico TLynx™ 3A: Non-Isolated DC-DC Power Modules

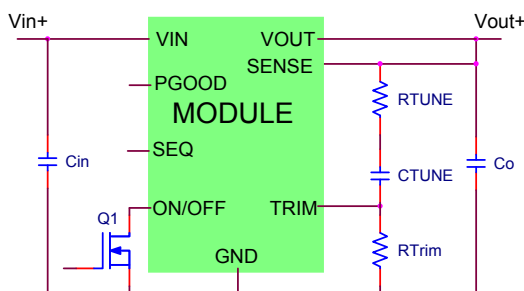
4.5Vdc –14Vdc input; 0.59Vdc to 5.5Vdc output; 3A Output Current



RoHS Compliant EZ-SEQUENCE™

Applications

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



Description

The 12V PicoTLynx™ 3A power modules are non-isolated dc-dc converters that can deliver up to 3A of output current. These modules operate over a wide range of input voltage ($V_{IN} = 4.5\text{Vdc} - 14\text{Vdc}$) and provide a precisely regulated output voltage from 0.59Vdc to 5.5Vdc, programmable via an external resistor. Features include remote On/Off, adjustable output voltage, over current and overtemperature protection, and output voltage sequencing (APTS versions). The Ruggedized version (-D) is capable of operation up to 105°C and withstand high levels of shock and vibration. A new feature, the Tunable Loop™, allows the user to optimize the dynamic response of the converter to match the load with reduced amount of output capacitance leading to savings on cost and PWB area.

Features

- Compliant to RoHS EU Directive 2002/95/EC (Z versions)
- Compatible in a Pb-free or SnPb reflow environment (Z versions)
- Wide Input voltage range (4.5Vdc-14Vdc)
- Output voltage programmable from 0.59Vdc to 5.5Vdc via external resistor
- Tunable Loop™ to optimize dynamic output voltage response
- Flexible output voltage sequencing EZ-SEQUENCE (APTS versions)
- Remote sense
- Power Good signal
- Fixed switching frequency
- Output overcurrent protection (non-latching)
- Overtemperature protection
- Remote On/Off
- Ability to sink and source current
- Cost efficient open frame design
- Small size: 12.2 mm x 12.2 mm x 6.25 mm (0.48 in x 0.48 in x 0.246 in)
- Wide operating temperature range [-40°C to 105°C(Ruggedized: -D), 85°C(Regular)]
- 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
Sequencing Voltage	APTS	V_{SEQ}	-0.3	V_{IN}	Vdc
Operating Ambient Temperature (see Thermal Considerations section)	All -D version	T_A T_A	-40 -40	85 105	°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	All	V_{IN}	4.5	—	14.0	Vdc
Maximum Input Current ($V_{IN}=4.5V$ to $14V$, $I_O=I_{O,max}$)	All	$I_{IN,max}$			3.5	Adc
Input No Load Current ($V_{IN} = 12.0Vdc$, $I_O = 0$, module enabled)	$V_{O,set} = 0.6 Vdc$ $V_{O,set} = 3.3Vdc$	$I_{IN,No load}$ $I_{IN,No load}$		17 55		mA
Input Stand-by Current ($V_{IN} = 12.0Vdc$, module disabled)	All	$I_{IN,stand-by}$		1		mA
Inrush Transient	All	I^2t			1	A ² s
Input Reflected Ripple Current, peak-to-peak (5Hz to 20MHz, 1μH source impedance; $V_{IN}=0$ to 14V, $I_O=I_{O,max}$; See Test Configurations)	All			43		mAp-p
Input Ripple Rejection (120Hz)	All			50		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 an integrated part of sophisticated 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 5A (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.