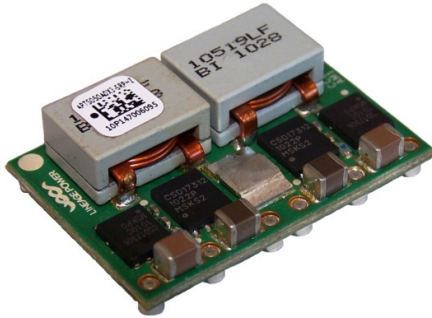


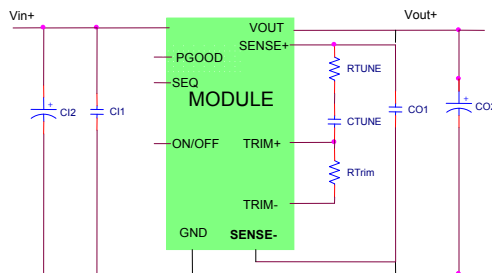
GigaTLynx[™] Non-isolated Power Modules: 4.5Vdc – 14Vdc input; 0.7Vdc to 2Vdc, 50A Output

TUNABLE[™]
LOOP
A LINEAGE POWER TRADEMARK



Applications

- Distributed power architectures
- Intermediate bus voltage applications
- Industrial applications
- Telecommunications equipment



Description

The GigaTLynx[™] series of power modules are non-isolated dc-dc converters that can deliver up to 50A 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 0.7Vdc to 2.0Vdc, programmable via an external resistor. Features include remote On/Off, adjustable output voltage, over current and over temperature protection, output voltage sequencing and paralleling. The Ruggedized version (-D) is capable of operation up to 105°C and withstand high levels of shock and vibration. The Tunable Loop[™] feature, 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)
- Compliant to RoHS EU Directive 2002/95/EC with lead solder exemption (non-Z versions)
- Input voltage from 4.5Vdc to 14Vdc
- Output voltage programmable from 0.7 Vdc to 2.0Vdc via external resistor
- Output current up to 50A
- Tunable control loop for fast transient response
- True differential remote sense
- Negative remote On/Off logic
- Output voltage sequencing (EZ-SEQUENCE[™])
- Output over current protection (non-latching)
- Over temperature protection
- Monotonic startup under pre-bias conditions
- Parallel operation with active current sharing
- Small size and low profile:
33 mm x 22.9 mm x 10 mm (max.)
(1.3 in x 0.9 in x 0.393 in (max.))
- Wide operating temperature range [-40°C to 105°C (Ruggedized: -D), 85°C (Regular)]
- UL* 60950-1, 2nd Ed. Recognized, CSA[†] C22.2 No. 60950-1-07 Certified, and VDE[‡] (EN60950-1, 2nd Ed.) 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	14	Vdc
Sequencing pin voltage	All	V_{SEQ}	-0.3	4	Vdc
Operating Ambient Temperature (see Thermal Considerations section)	All -D version	T_A T_A	-40 -40	85 105	°C °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	$V_{O,set} \leq 2.0$	V_{IN}	4.5	—	14	Vdc
Maximum Input Current ($V_{IN} = V_{IN,min}$ to $V_{IN,max}$, $I_O = I_{O,max}$)	All	$I_{IN,max}$			26	Adc
Inrush Transient	All	$I^2 t$			1	A ² s
Input No Load Current ($V_{IN} = V_{IN,nom}$, $I_O = 0$, module enabled)	$V_{O,set} = 0.7Vdc$ $V_{O,set} = 1.8Vdc$	$I_{IN,No load}$ $I_{IN,No load}$		73.4 136		mA mA
Input Stand-by Current ($V_{IN} = V_{IN,nom}$, module disabled)	All	$I_{IN,stand-by}$		1.3		mA
Input Reflected Ripple Current, peak-to-peak (5Hz to 20MHz, 1μH source impedance; $V_{IN,min}$ to $V_{IN,max}$, $I_O = I_{O,max}$; See Test configuration section)	All				73	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 surface mount, fast acting fuse (ie. Littelfuse 456030 series) with a maximum rating of 30 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.