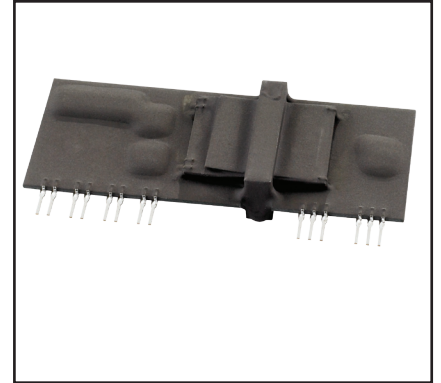
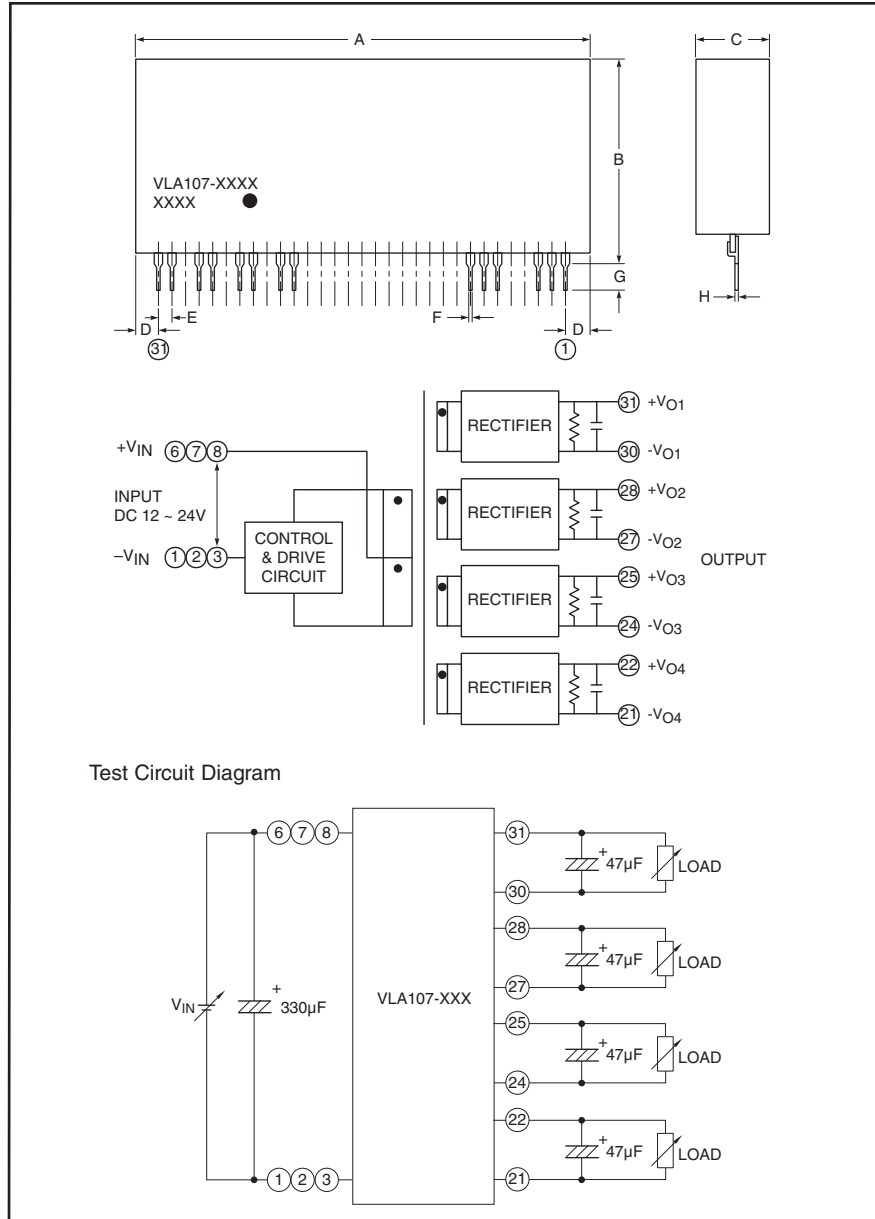


Isolated DC/DC Converter



Description:

VLA107-644R is an isolated DC-DC converter module having four (4) outputs designed to inverter control. Output power and input is isolated from the output. The over-current protection circuit is built-in. This device is used for on-board power supplies in industrial control equipment.

Features:

- ☐ Input Voltage Range: 12 ~ 24V DC
- ☐ Output: 15V, 120mA x4 (Output Power: 7.2W)
- ☐ Thin Profile, Lightweight Design
- ☐ Electrical Isolation Voltage Between Input and Output: 2500 V_{rms} for 1 Minute
- ☐ Low Noise
- ☐ No Optocoupler
- ☐ RoHS Compliant

Application:

Three-phase inverter control.

Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	3.42 Max.	87.0 Max.
B	1.53 Max.	39.0 Max.
C	0.55 Max.	14.0 Max.
D	0.22 Max.	5.5 Max.
E	0.1	2.54
F	0.03±0.004	0.75±0.1
G	0.18±0.06	4.5±1.5
H	0.02±0.008/-0.004	0.5±0.2/-0.1



Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272 www.pwr.com

VLA107-644R

Isolated DC/DC Converter

Absolute Maximum Ratings, $T_a = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Symbol	VLA107-644R	Units
Input Voltage (Between Pins 1, 2, 3 and 6, 7, 8)	V_{IN}	25	Volts
Output Current (Between Pins 21-22, 24-25, 27-28, and 30-31)	I_O	120	mA
Operating Temperature (No Condensation)*	T_{opr}	-30 ~ 75	$^\circ\text{C}$
Storage Temperature (No Condensation)	T_{stg}	-40 to 85	$^\circ\text{C}$
Isolation Voltage Between Input and Output (Sine Wave Voltage, 60Hz, 1 Minute)	V_{ISO1}	2500	V_{rms}
Isolation Voltage Between Each Output (Sine Wave Voltage, 60Hz, 1 Minute)	V_{ISO}	2500	V_{rms}

*Please refer to derating characteristics.

Electrical and Mechanical Characteristics, $T_a = 25^\circ\text{C}$, $V_{IN} = 24\text{V}$ unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Input Voltage	V_{IN}	Recommended Range	12	—	24	Volts
Output Voltage	V_{OX}	$V_{IN} = 24\text{V}$, $I_{O1} = I_{O2} = I_{O3} = I_{O4} = 0\text{mA}$	15.5	16.5	17.5	Volts
		$V_{IN} = 24\text{V}$, $I_{O1} = I_{O2} = I_{O3} = I_{O4} = 120\text{mA}$	13	14	15	Volts
		$V_{IN} = 24\text{V}$, $I_{O1} = I_{O2} = I_{O3} = 10\text{mA}$, $I_{O4} = 30\text{mA}$	14.5	15.5	16.5	Volts
		$V_{IN} = 24\text{V}$, $I_{O1} = I_{O2} = I_{O3} = 30\text{mA}$, $I_{O4} = 90\text{mA}$	14	15	16	Volts
Load Regulation	Reg-L	$V_{IN} = 24\text{V}$, $I_{O1} = I_{O2} = I_{O3} = I_{O4} = 0 \sim 120\text{mA}$	—	13	—	%
		$V_{IN} = 24\text{V}$, $I_{O1} = I_{O2} = I_{O3} = 0\text{mA}$, $I_{O4} = 0 \sim 120\text{mA}$	—	6	—	%
Output Ripple Voltage	V_{P-P}	$V_{IN} = 24\text{V}$, $I_{OX} = 120\text{mA}$	—	40	—	mVp-p
Efficiency	η	$V_{IN} = 24\text{V}$, $I_{O1} = I_{O2} = I_{O3} = I_{O4} = 120\text{mA}$	—	75	—	%

VLA107-644R Isolated DC/DC Converter

