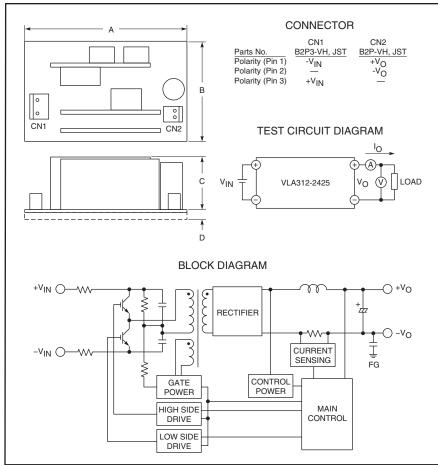


Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272

Isolated DC-DC Converter



Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	3.54	90.0
В	2.16	55.0
С	1.38	35.0
D	0.20	5.0

Description:

VLA312-2425 is an isolated DC-DC converter designed for industrial equipment. It is designed to convert a rectified line voltage ranging from 475 to 850V DC into 24V DC. Total output power is 25W.

Features:

- Input Voltage Range: 475V to 850V DC
- Output: +24V, 1.05A
 (Output Power: 25.2W)
- □ Electrical Isolation Voltage Between Input and Output: 2500 V_{rms} for 1 Minute
- Over-current Protection (Auto Resumption)
- □ Over-voltage Protection

Application:

On-board pre-regulator for industrial control equipment.



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VLA312-2425

Isolated DC-DC Converter

Absolute Maximum Ratings, Ta = 25°C unless otherwise specified

Characteristics	Symbol	VLA312-2425	Units
Input Voltage	V _{IN}	850	Volts
Output Current	Ι _Ο	1.05	А
Operating Temperature (No Condensation) ^{*1}	T _{opr}	-10 ~ +55	°C
Storage Temperature (No Condensation)	T _{stg}	-20 ~ +75	°C
Input-Output Isolation Voltage (Sine Wave Voltage, 60Hz, 1 Minute)	V _{ISO}	2500	V _{rms}

Electrical and Mechanical Characteristics, $T_a = 25^{\circ}C$, $V_{IN} = 680V$ unless otherwise noted

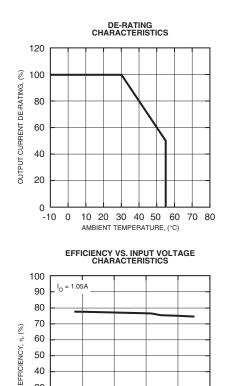
30

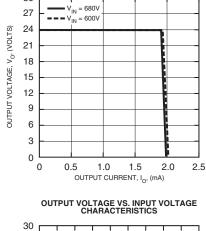
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Input Voltage	V _{IN}	Recommended Range	475	680	850	Volts
Output Voltage 1	VO	I _O = 0.1 ~ 1.05A	22.8	24.0	25.2	Volts
Input Regulation	R _{eg-I}	I _O = 1.05A, V _{IN} = 475 ~ 850V	_		100	mV
Load Regulation	R _{eg-L}	I _O = 0.1 ~ 1.05A	_	—	150	mV
Ripple Voltage	V _{P-P}	I _O = 1.05A ^{*2}		_	240	mV
Efficiency	η	I _O = 1.05A	_	77	_	%

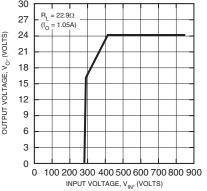
OUTPUT VOLTAGE VS. OUTPUT CURRENT CHARACTERISTICS

*1 Please refer to de-rating characteristics.

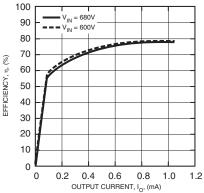
*2 Not including spike noise.



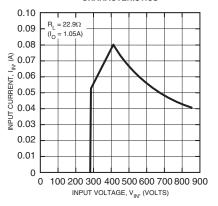








INPUT CURRENT VS. INPUT VOLTAGE CHARACTERISTICS



2

40

30

20 10

0

400

500

600

INPUT VOLTAGE, V_{IN}, (VOLTS)

700

800

900



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VLA312-2425 Isolated DC-DC Converter

Safety Precautions

Great detail and careful attention are given to the production of HVICs, such as in the development, the quality of production, and in its reliability. However, the reliability of HVICs depends not only on their own factors but also in how they are used. When handling HVICs please note the following cautions.

CAUTIONS

- Packaging: The materials used in packaging HVICs can only withstand normal external conditions. When exposed to outside shocks, rain, and certain environmental contamination, the packaging materials will deteriorate. Please take care in handling.
- Carrying: 1. Don't stack boxes too high. Avoid placing heavy materials on boxes.
 - 2. Boxes must be positioned correctly during transportation to avoid breakage.
 - 3. Don't throw or drop boxes.
 - 4. Keep boxes dry. Avoid rain or snow.
 - 5. Minimal vibration and shock during transportation is desirable.
- Storage: When storing HVICs, please observe the following notices or possible deterioration of their electrical characteristics, risk of solderability, and external damage may occur.
 - 1. Devices must be stored where fluctuation of temperature and humidity is minimal and must not be exposed to direct sunlight. Store at the normal temperature of 5 to 30°C with humidity at 40 to 60%.
 - 2. Avoid locations where corrosive gasses are generated or where a lot of dust accumulates.
 - 3. Storage cases must be static proof.
 - 4. Avoid putting weight on boxes.

Extended When extended storage is necessary, HVICs must be kept non-processed. When using HVICs which have been stored for **Storage:** more than one year or under severe conditions, be sure to check that the exterior is free from flaws or other damage.

Maximum To prevent any electrical damage, use HVICs within the maximum ratings. The temperature, current, voltage, etc., must not exceed these conditions.

Polarity: To prevent HVICs from destruction and deterioration due to wrong insertion, make sure polarity of inserting leads into the board hole conforms to the external view for the terminal arrangement.