VLA309-2410R

ISOLATED TYPE DC-DC CONVERTER

DESCRIPTION

The VLA309-2410R is an isolated DC-DC converter designed to control the industrial equipment. It can convert the high voltage to low voltage. Total output power is 10.08W.

FEATURES

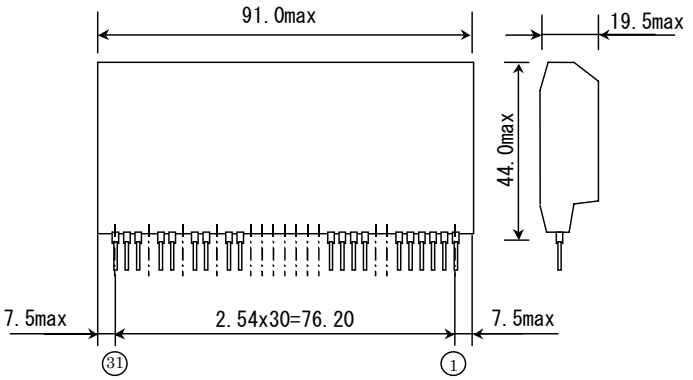
- Input ---------- DC400V to 800V DC
- Output---------- +24V,420mA (10.08W)
- Electrical isolation (between input and outputs)
  ---------- 2500Vrms 1 minute

APPLICATIONS

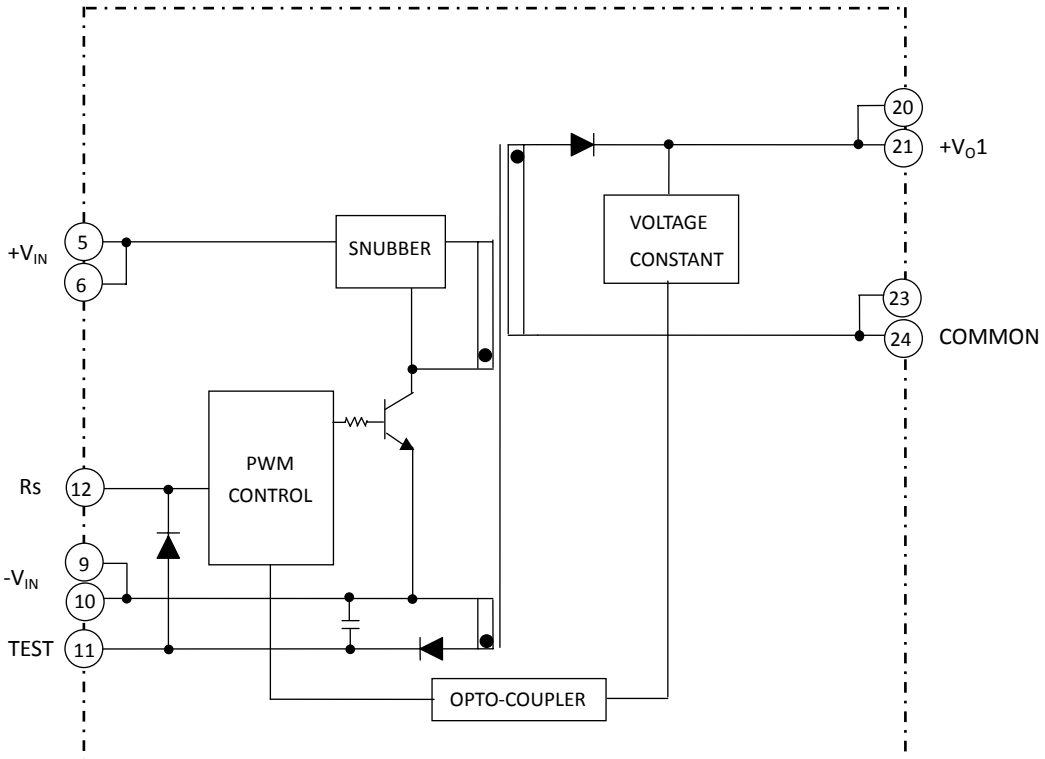
On board power supply for control equipment

OUTLINE DRAWING

Dimensions : mm



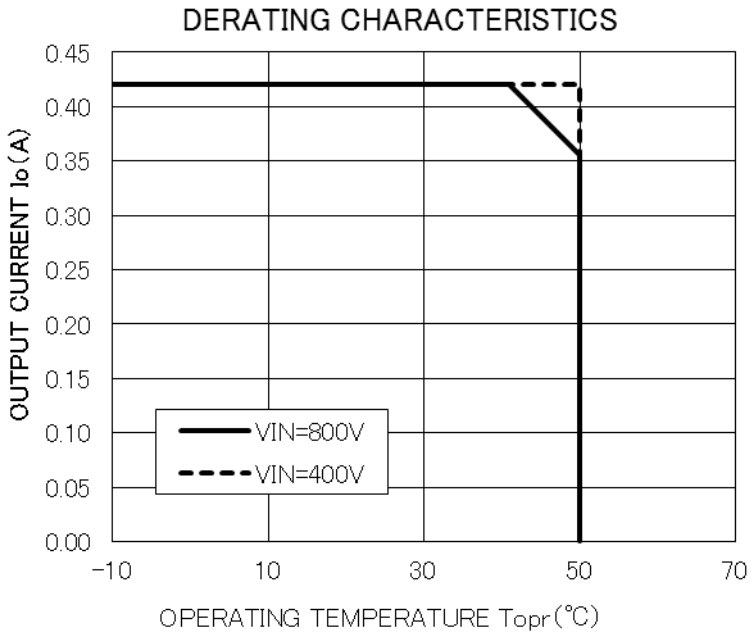
BLOCK DIAGRAM



MAXIMUM RATINGS (unless otherwise noted, Ta=25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{IN}	Input voltage	Between pins 5,6 - 9,10	800	V
I_O	Output current	Between pins 20,21 - 23,24	420	mA
Pomax	Total maximum output power	Vo*Io	10.08	W
Topr	Operating temperature	No condensation	-10 ~ +50 (*1)	°C
Tstg	Storage temperature	No condensation	-20 ~ +85	°C
Viso	Electrical isolation between input and output 1	Sine wave voltage, 60Hz, 1min	2500	Vrms

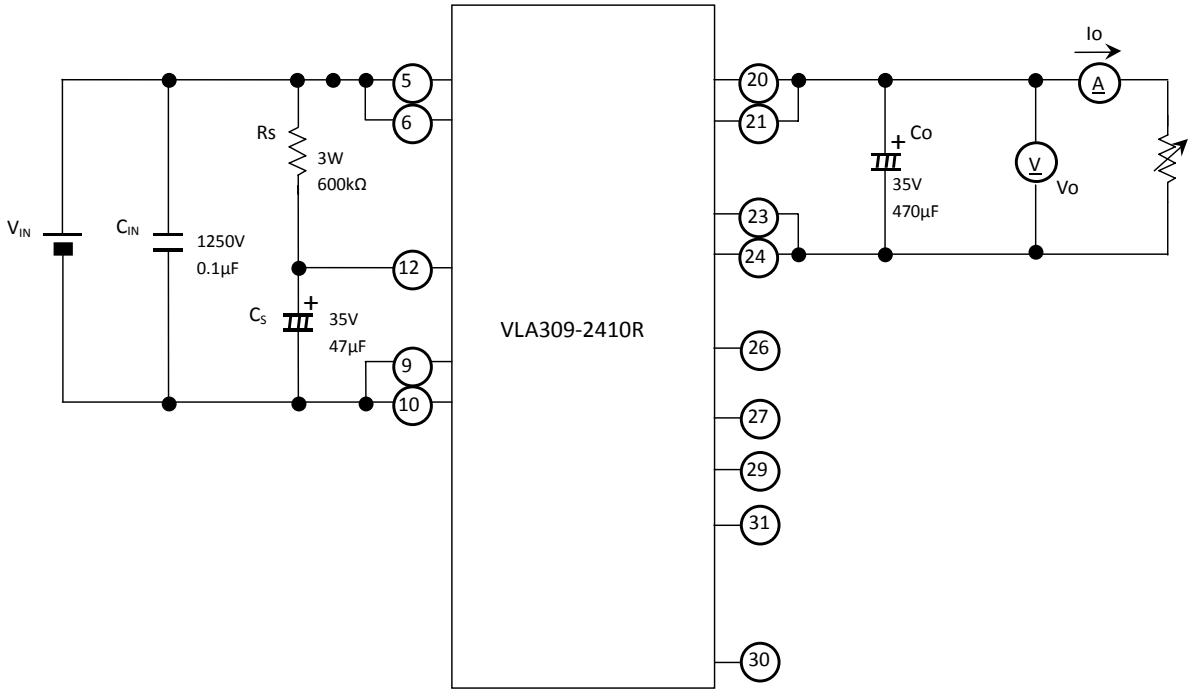
(*1) Please refer to derating characteristics.



ELECTRICAL CHARACTERISTICS (unless otherwise noted, V_{IN}=600V, Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V_{IN}	Input voltage	Recommended range	400	600	800	V
Vo	Output voltage	Io1=420mA	22.8	24.0	25.2	V
Reg-I	Input regulation	Po=10.08W,V_{IN}=400~800V	-	-	480	mV
Reg.-L	Load regulation	Io1=100~420mA	-	-	240	mV
η	Efficiency	Po=10.08W	-	68	-	%

TEST CIRCUIT DIAGRAM



【CAUTION】

(1)It is used the electrolytic capacitors which has the low impedance for output capacitor.

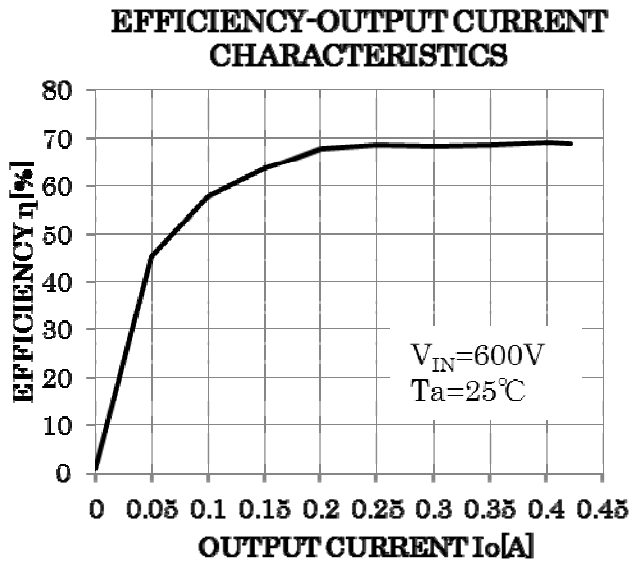
(2)VLA309-2410R haven't short circuit protection function, so please avoid the short circuit

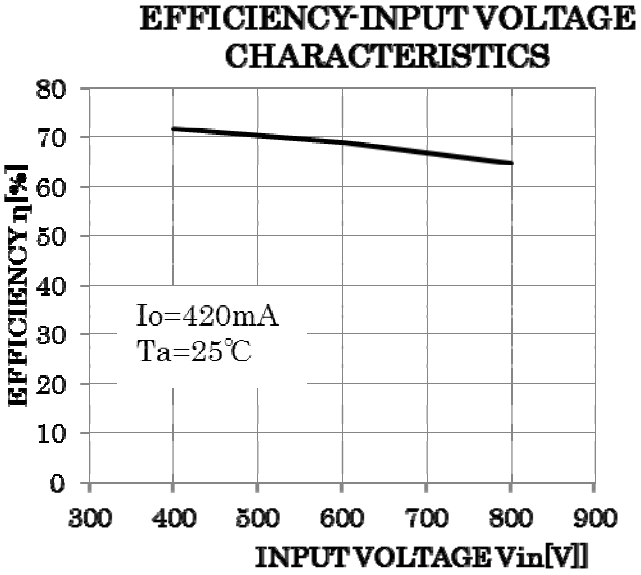
(3) The starting time(msec.) is calculated by below formula.

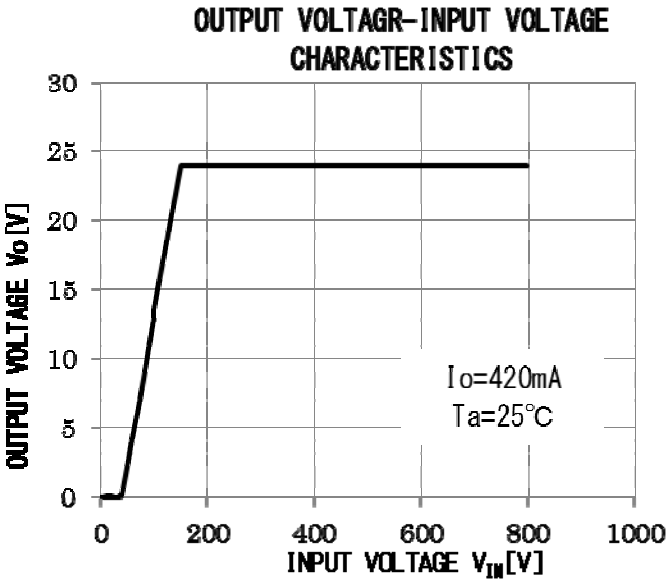
$$\mathrm{CsRsln}\left(\frac{\mathrm{Vin}-0.2(\mathrm{RS}+1/\mathrm{Cs})}{\mathrm{Vin}-17.2-0.2(\mathrm{RS}+1/\mathrm{CS})}\right)$$

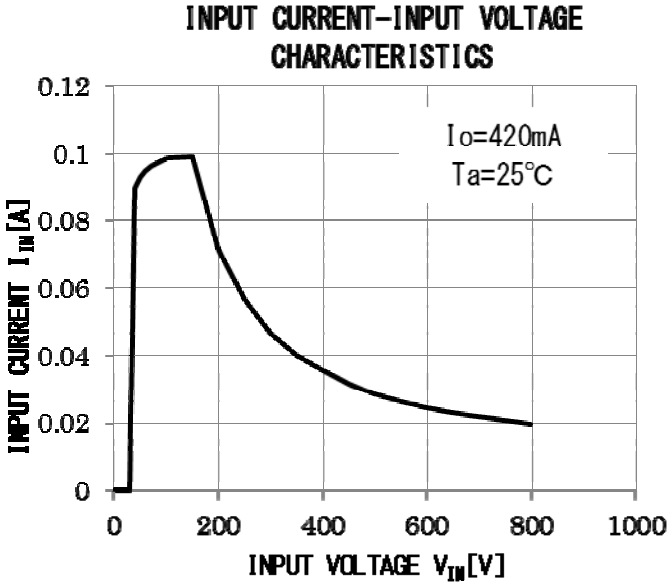
*At a no load.

TYPICAL CHARACTERISTICS CURVES（Typical characteristic）









FOR SAFETY USING

Great detail and careful attention are given to the production activity of Hics, such as the development, the quality of production, and in it's reliability. However the reliability of Hics depends not only on their own factors but also in their condition of usage. When handling Hics, please note the following cautions.

CAUTIONS	
Packing	The materials used in packing Hics can only withstand normal external conditions. When exposed to outside shocks, rain and certain environmental contaminators, the packing materials will deteriorates. 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 Hics, 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 degrees Celsius with humidity at 40 to 60%. 2) Avoid locations where corrosive gasses are generated or where much dust accumulates. 3) Storage cases must be static proof. 4) Avoid putting weight on boxes.
Extended storage	When extended storage is necessary, Hics must be kept non-processed. When using Hics which have been stored for more than one year or under severe conditions, be sure to check that the exterior is free from flaw and other damages.
Maximum ratings	To prevent any electrical damages, use Hics within the maximum ratings. The temperature, current, voltage, etc. must not exceed these conditions.
Polarity	To protect Hics from destruction and deterioration due to wrong insertion, make sure of polarity in inserting leads into the board holes, conforming to the external view for the terminal arrangement.

Keep safety first in your circuit designs!

- ISAHAYA Electronics Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (1)placement of substitutive, auxiliary circuits, (2)use of non-flammable material or (3)prevention against any malfunction or mishap.

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