

# M57182N-315

UNINSULATED DC-DC CONVERTER

## DESCRIPTION

M57182N-315 is an un-insulated type DC-DC converter with that voltages obtained from rectifying 200VAC can be directly inputted.

This hybrid IC gives +15V, 200mA with several external components such as electrolytic capacitors and choke coil.

## FEATURES

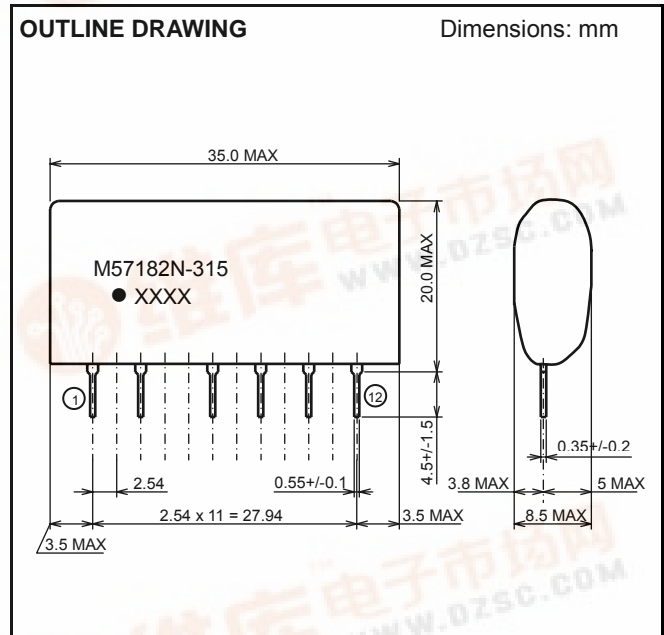
- Input voltage rage ..... DC 220V ~ 380V
- Output specifications..... 15V, 200mA

## APPLICATIONS

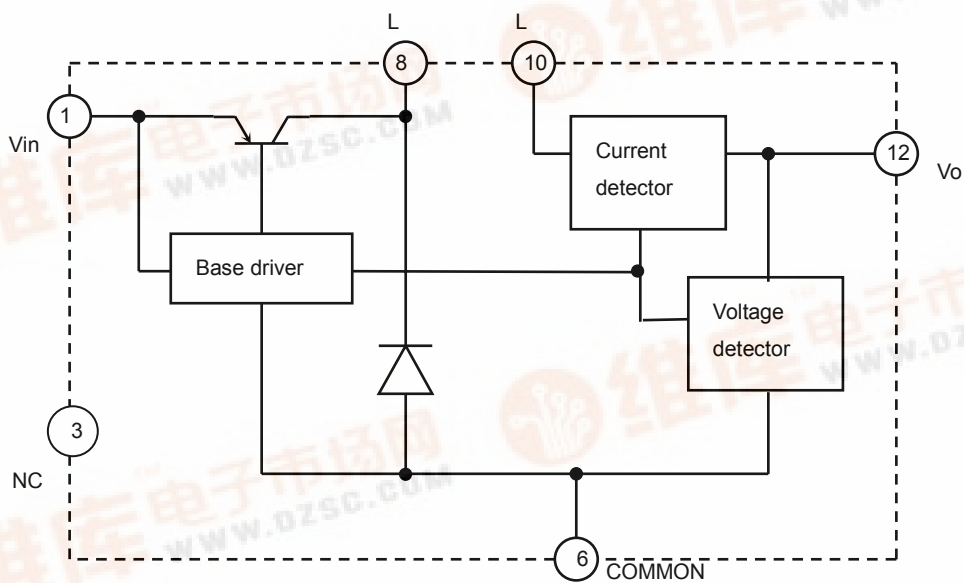
DIP-IPM driving power supply using for electric household appliances and so on.

## OUTLINE DRAWING

Dimensions: mm



## BLOCK DIAGRAM

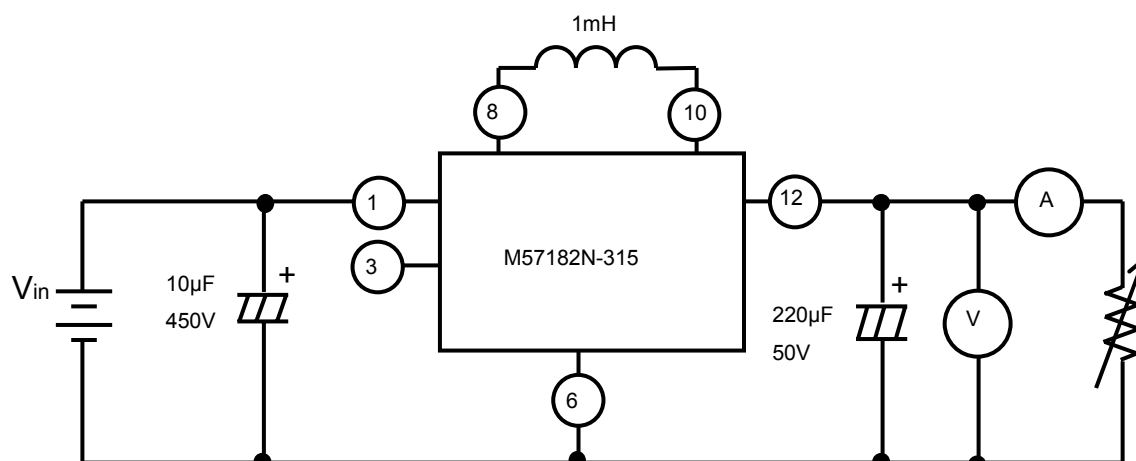


**MAXIMUM RATINGS** (unless otherwise noted, Ta=25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V <sub>in</sub>	Input voltage	—————	450	V
I <sub>L</sub>	Load current	—————	200	mA
T <sub>opr</sub>	Operating temperature	No condensation allowable	-10 ~ +70	°C
T <sub>stg</sub>	Storage temperature	No condensation allowable	-20 ~ +85	°C

**ELECTRICAL CHARACTERISTICS** (Unless otherwise noted, Ta=25°C, V<sub>in</sub>=280V)

Symbol	Parameter	Conditions	Limits			Unit
			Min	Typ	Max	
V <sub>in</sub>	Input voltage	Recommended range	220	280	380	V
V <sub>o</sub>	Output voltage	I <sub>L</sub> = 0 ~ 200mA	14	15	16	V
Reg-I	Input regulation	I <sub>L</sub> =200mA, V <sub>I</sub> =220 ~ 380V	-	-	200	mV
Reg-L	Load regulation	I <sub>L</sub> =0 ~ 200mA	-	-	200	mV
η	Efficiency	I <sub>L</sub> =200mA	-	70	-	%

**MEASUREMENT CIRCUIT**

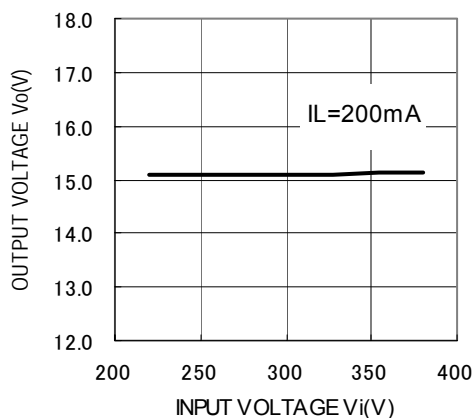
(\*) Please use power inductors with good performance of DC superimposition.

(We used C13 – FR –102: made in MITSUMI ELECTRIC CO., LTD.)

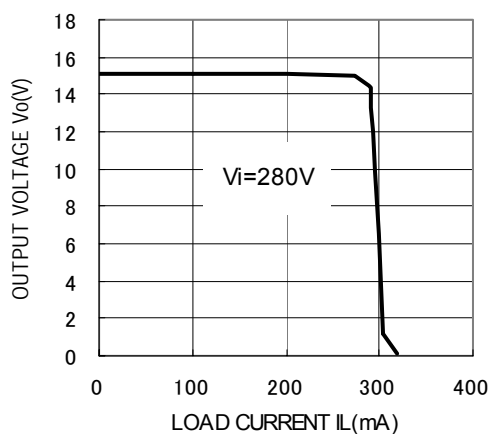
(\*\*) Please use electrolytic capacitor of output side with high frequency and low impedance.

**TYPICAL CHARACTERISTICS**

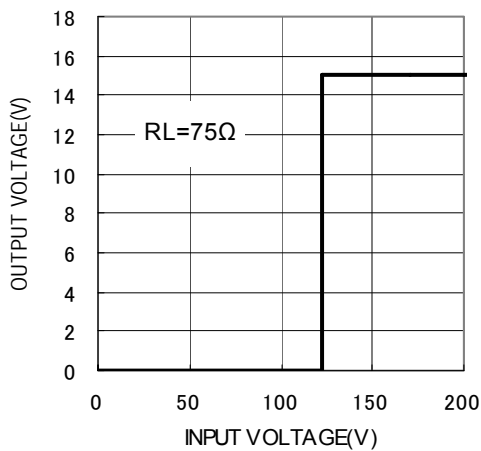
OUTPUT VOLTAGE VS.  
INPUT VOLTAGE CHARACTERISTICS



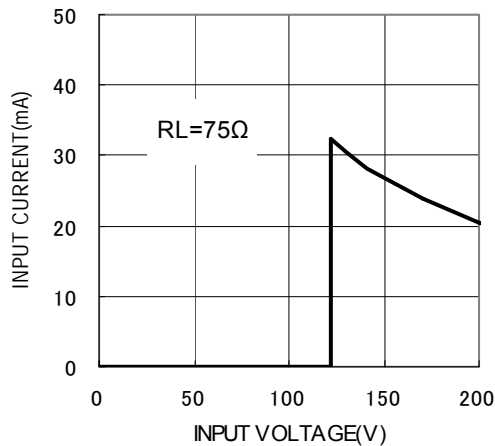
OUTPUT VOLTAGE VS.  
LOAD CURRENT CHARACTERISTICS



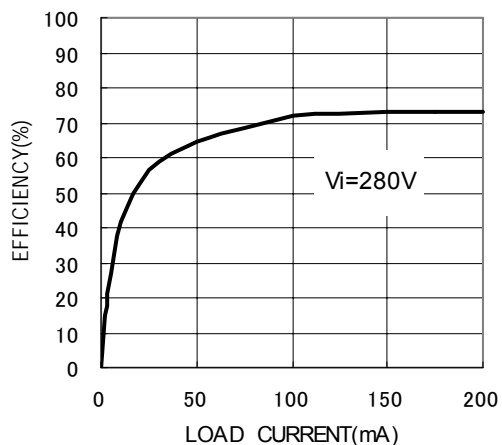
OUTPUT VOLTAGE VS.  
INPUT VOLTAGE CHARACTERISTICS



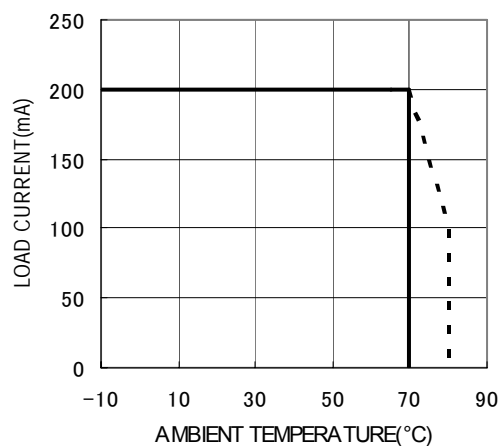
INPUT CURRENT VS.  
INPUT VOLTAGE CHARACTERISTICS



EFFICIENCY VS.  
LOAD CURRENT CHARACTERISTICS



DERATING CHARACTERISTICS



**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 its 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	<p>The materials used in packing Hics can only withstand normal external conditions. When exposed to outside shocks, rain and certain environmental contaminants, the packing materials will deteriorates. Please take care in handling.</p>
Carrying	<ol style="list-style-type: none"> <li>1) Don't stack boxes too high. Avoid placing heavy materials on boxes.</li> <li>2) Boxes must be positioned correctly during transportation to avoid breakage.</li> <li>3) Don't throw or drop boxes.</li> <li>4) Keep boxes dry. Avoid rain or snow.</li> <li>5) Minimal vibration and shock during transportation is desirable.</li> </ol>
Storage	<p>When storing Hics, please observe the following notices or possible deterioration of their electrical characteristics, risk of solderability, and external damage may occur.</p> <ol style="list-style-type: none"> <li>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%.</li> <li>2) Avoid locations where corrosive gasses are generated or where much dust accumulates.</li> <li>3) Storage cases must be static proof.</li> <li>4) Avoid putting weight on boxes.</li> </ol>
Extended storage	<p>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.</p>
Maximum ratings	<p>To prevent any electrical damages, use Hics within the maximum ratings. The temperaqture, current, voltage, etc. must not exceed these conditions.</p>
Polarity	<p>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.</p>



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**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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