

**DESCRIPTION**

The VLA606A-01R is the interface module for IPM drive.

**FEATURES**

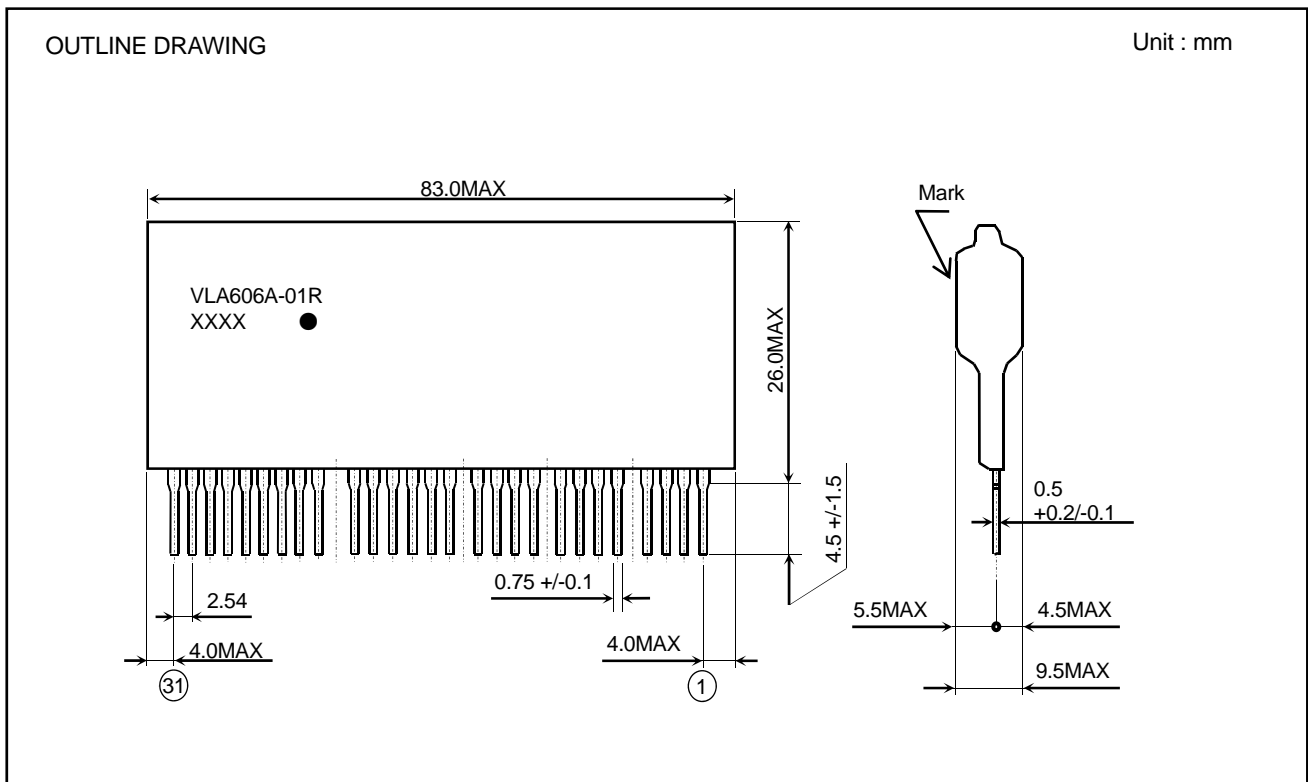
- Containing 6 opto-couplers for IPM drive and 4 opto-couplers for Fault Signal for 3 phase inverter
- With diodes for protection from reverse input voltage
- SIP saves more space on mother board
- Pin arrangement fit IPM's pin assign
- The Isolation voltage between primary and secondary is 2500Vrms(1 min.)

**APPLICATIONS**

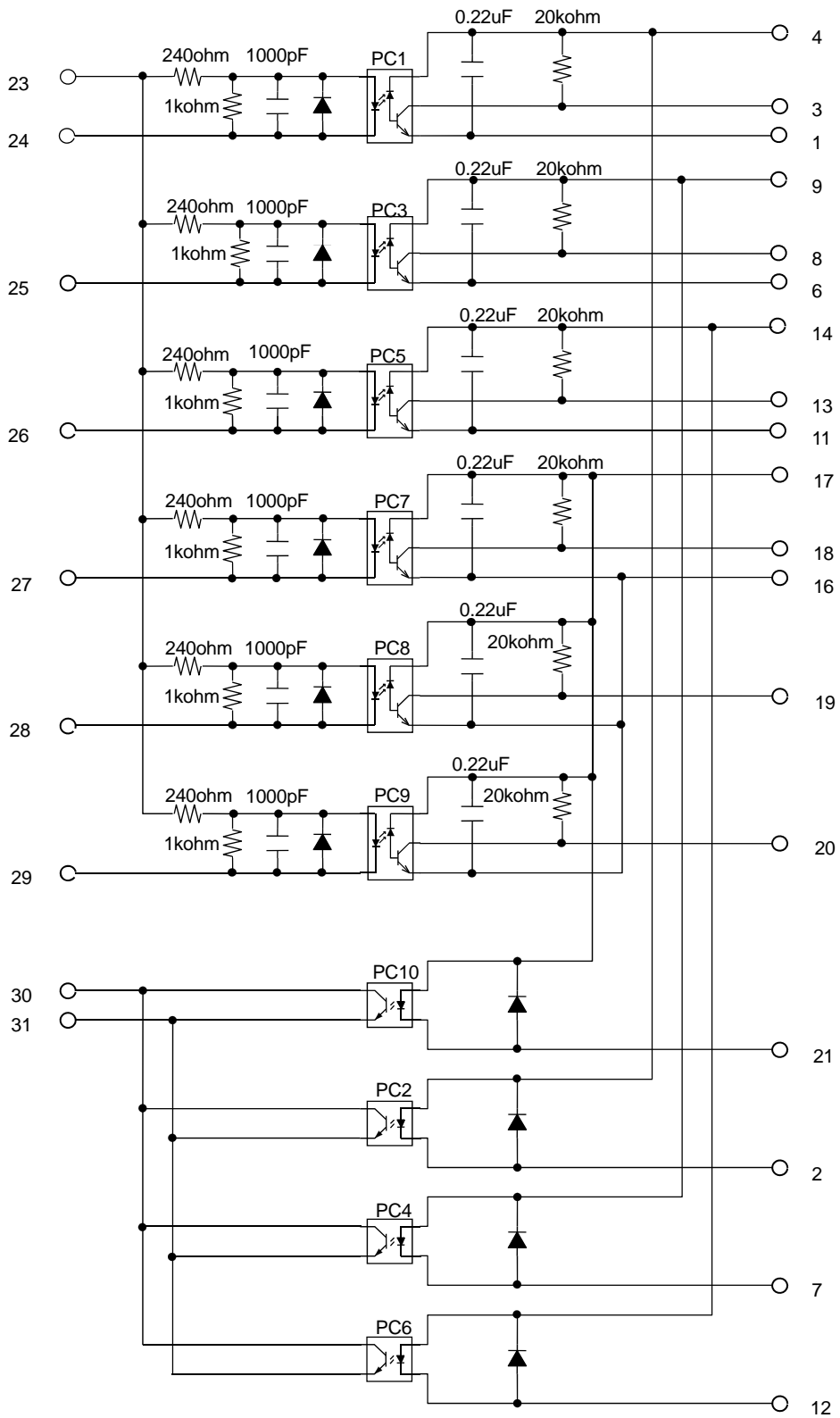
Interface for IPM

**RECOMMENDED IPM**

MITSUBISHI IPM series



EQUIVALENT CIRCUIT



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

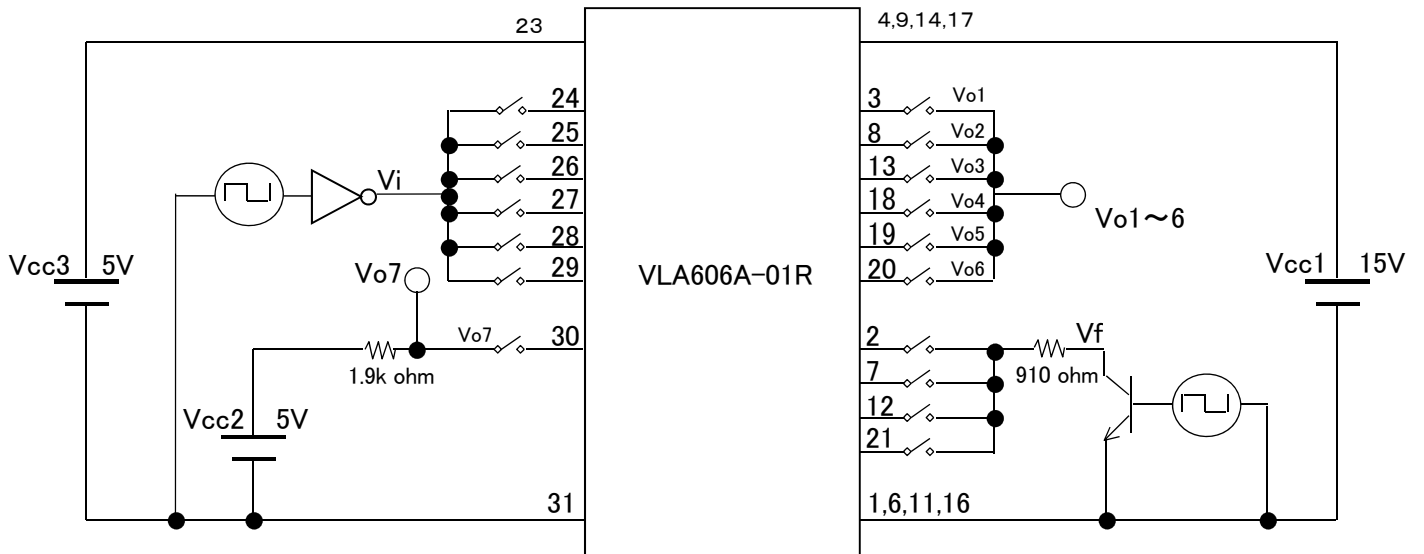
| Parameter                      | Symbol | Conditions  | Ratings    | Unit |
|--------------------------------|--------|---|------------|------|
| Supply voltage 1               | Vcc1   | Between pins<br>4-1,9-6,14-11,17-16                 | -0.5 ~ +20 | V    |
| Supply voltage 2               | Vcc2   | Between pins<br>30-31                               | -6 ~ +40   | V    |
| Supply voltage 3               | Vcc3   | Between pins<br>23-31                               | 6          | V    |
| Input current 1                | IF1    | Between pins<br>23-24,23-25,23-26,23-27,23-28,23-29 | 20         | mA   |
| Input current 2                | IF2    | Between pins<br>4-2,9-7,14-12,17-21                 | 25         | mA   |
| Operating temperature          | Topr   | No condensation                                     | -20 ~ +70  | °C   |
| Storage temperature            | Tstg   | No condensation                                     | -25 ~ +100 | °C   |
| Input-output isolation voltage | Viso   | primary – secondary<br>AC, 1min                     | 2500       | Vrms |

**ELECTRICAL CHARACTERISTICS** (unless otherwise noted, Ta=25°C)

| Parameter            | Symbol | Test conditions | Limits |      |      | Unit |
|----------------------|--------|-----------------|--------|------|------|------|
|                      |        |                 | MIN.   | TYP. | MAX. |      |
| Output High voltage1 | VH1    | (Note 1)        | 14.7   | 15.0 | 15.3 | V    |
| Output Low voltage1  | VL1    | (Note 1)        | —      | —    | 0.5  | V    |
| Turn-on time1        | ton1   | (Note 1)        | —      | —    | 1.0  | us   |
| Turn-off time1       | toff1  | (Note 1)        | —      | —    | 1.0  | us   |
| Output High voltage2 | VH2    | (Note 1)        | 4.9    | 5.0  | 5.1  | V    |
| Output Low voltage2  | VL2    | (Note 1)        | —      | —    | 0.5  | V    |
| Turn-on time2        | ton2   | (Note 1)        | —      | 2.0  | —    | us   |
| Turn-off time2       | toff2  | (Note 1)        | —      | 40   | —    | us   |

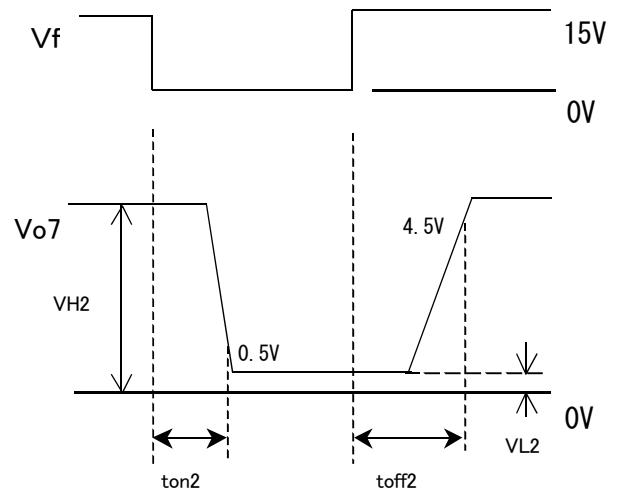
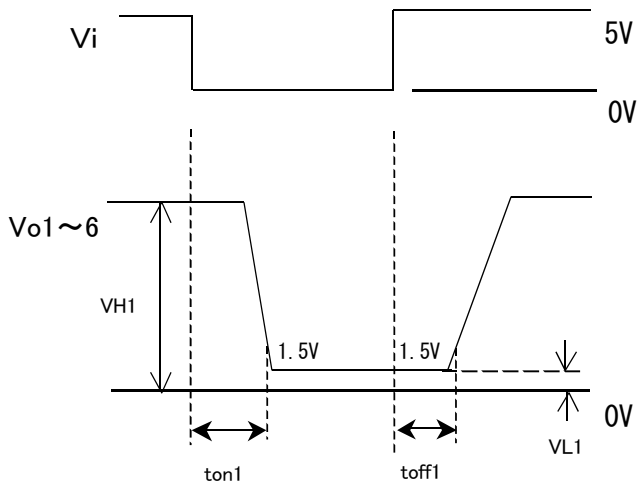
(Note 1) Please refer to the test conditions of the following page.

TEST CONDITIONS

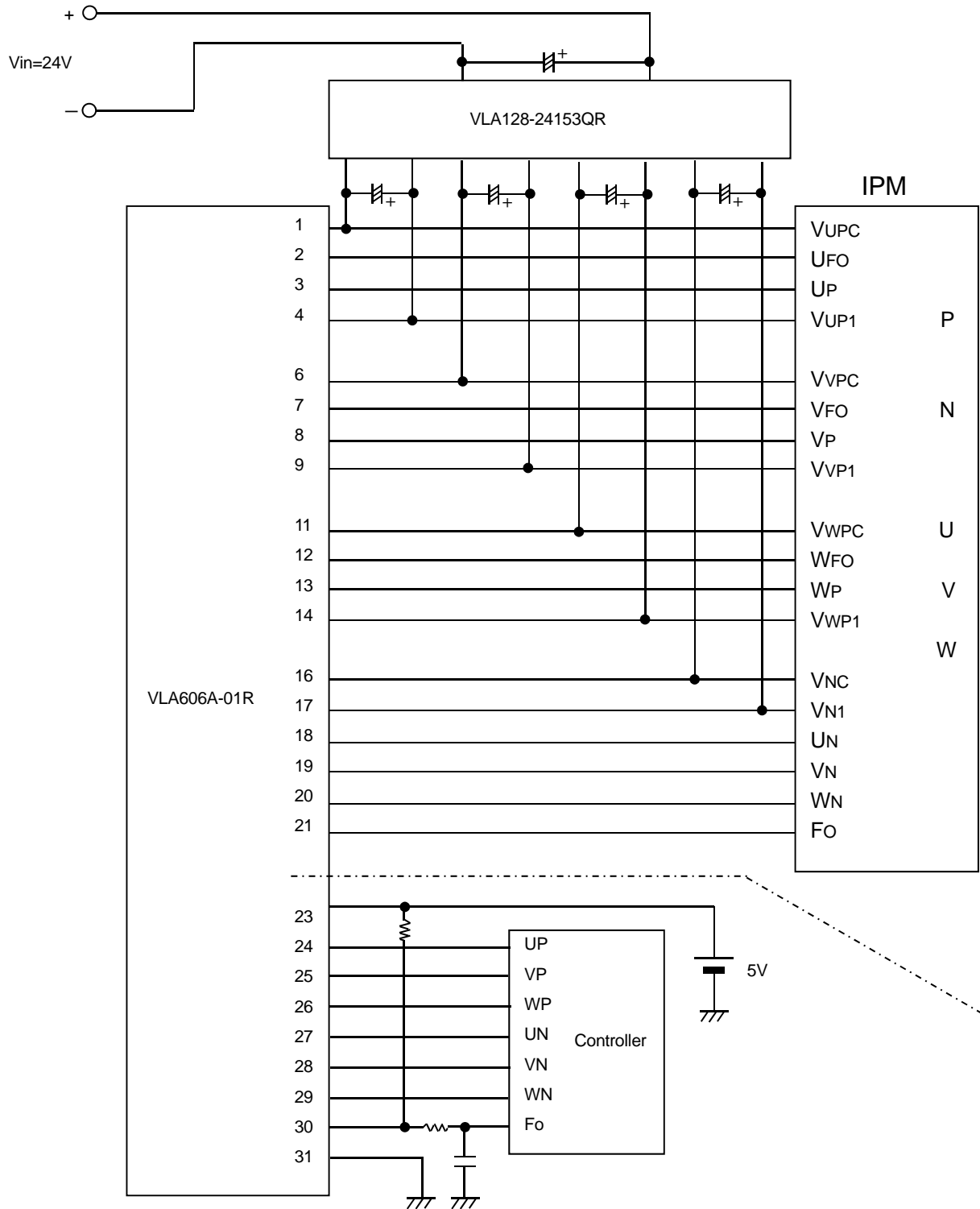


Vi: f=1kHz  
D.F.=50%

Vf: f=100Hz  
D.F.=50%



CONNECTION EXAMPLE



**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          | 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         | <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 | 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 temperaqture, current, vottage, 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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