

IPM INTERFACE MODULE WITH DC-DC CONVERTER

**DISCRIPTIONS**

The VLA127-03R is an interface module with 4 isolated power supplies for IPM drive.

**FEATURES**

- Containing 6 optical coupler for IPM drive and 4 optical couplers for fault signal for 3 phase inverter.
- Input voltage -----+24V (for power supply)  
+ 5V (for signal)
- Attachable to MITSUBISHI L1 series IPM easily
- RoHS compliance

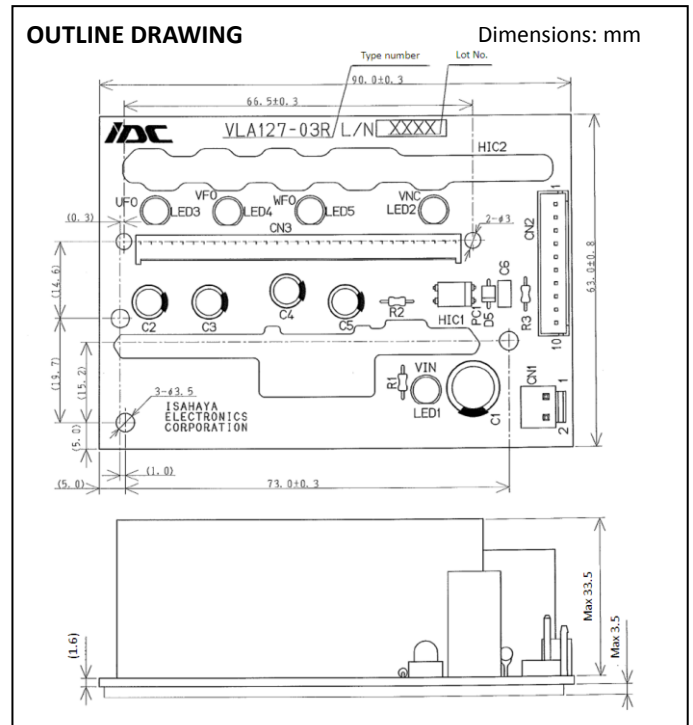
**APPLICATIONS**

Interface for 3 phase IPM

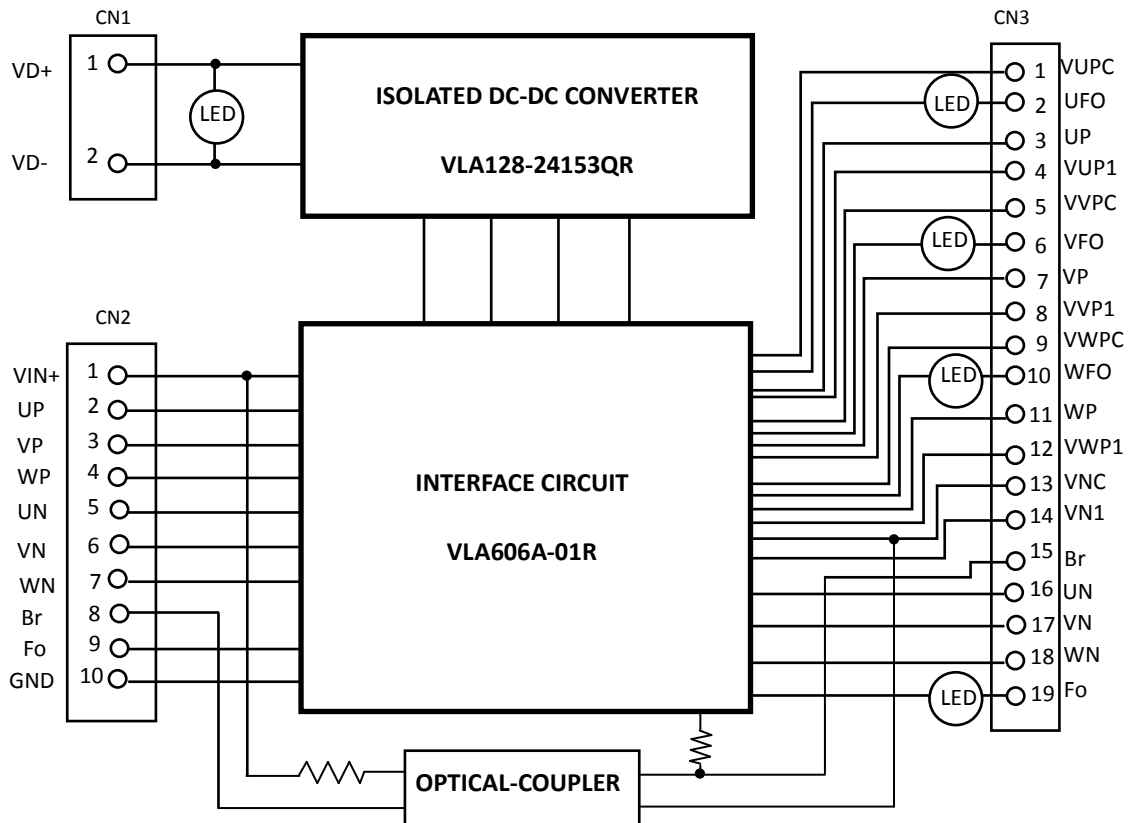
**RECOMMENDED IPM**

MITSUBISHI L1 series

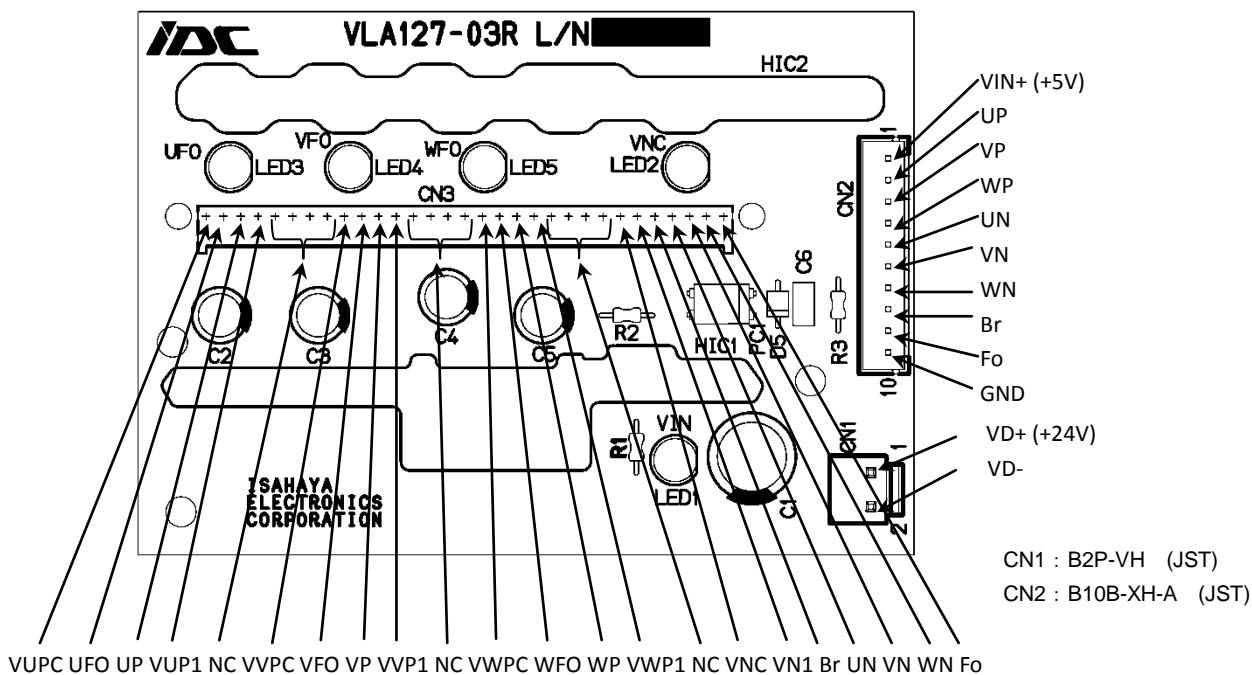
**OUTLINE DRAWING**



**BLOCK DIAGRAM**



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**MAXIMUM RATINGS** (unless otherwise noted,  $V_{IN}=24V, T_a=25^{\circ}C$ )

Symbol	Parameter	Conditions	Ratings	Unit
VD	supply voltage	CN1 Between pins 1 and 2	26	V
VCC	supply voltage	CN2 Between pins 9 and 10	40	V
VIN	Input voltage	CN2 Between pins 1 and 10	6	V
IF	Input current	CN2 Between pins 1-2,1-3,1-4,1-5,1-6,1-7.1-8	20	mA
VR	reverse voltage	CN2 Between pins 1-2,1-3,1-4,1-5,1-6,1-7.1-8	5	V
Topr	Operating temperature	No condensation	-10 ~ +70	$^{\circ}C$
Tstg	Storage temperature	No condensation	-20 ~ +85	$^{\circ}C$
Viso	Isolation voltage between primary to secondary	Sine wave voltage, 60Hz, 1min	2500	Vrms

\*Other maximum ratings apply to individual Hic.

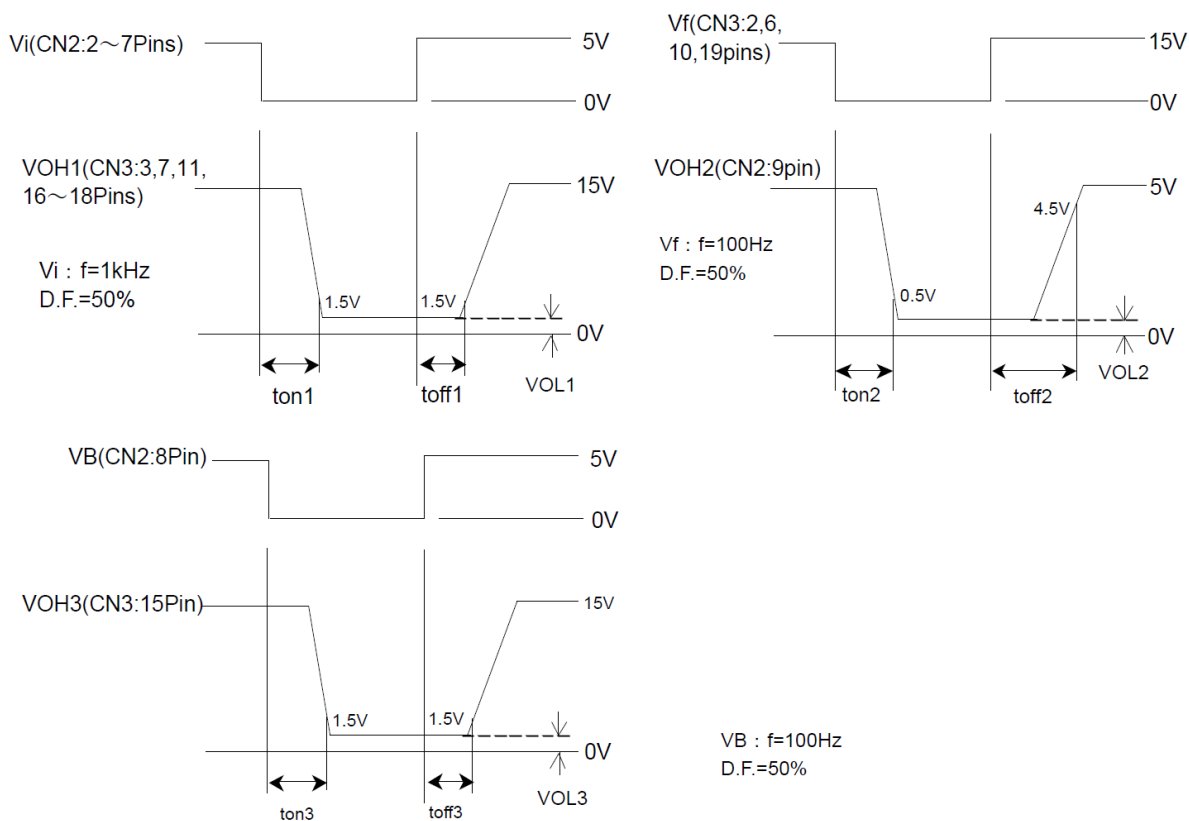
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ELECTRICAL CHARACTERISTICS (unless otherwise noted, Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			MIN.	TYP.	MAX.	
VD	supply voltage	Recommended range	22.8	24	25.2	V
I <sub>F</sub>	Input current	Recommended range	10	-	20	mA
VG1~4	output voltage	CN3 Between pins 4-1,8-5,12-9,14-13 No Load	14	15	16	V
VOH1	output High voltage1	(Note 1) Vi=H	13.7	15.0	16.3	V
VOL1	output Low voltage1	(Note 1) Vi=L	-	-	0.5	V
ton1	turn-on time1	(Note 1)	-	-	1.0	μs
toff1	turn-off time1	(Note 1)	-	-	1.0	μs
VOH2	output High voltage2	(Note 1) Vf=H	4.9	5.0	5.1	V
VOL2	output Low voltage2	(Note 1) Vf=L	-	-	0.5	V
ton2	turn-on time2	(Note 1)	-	2.0	-	μs
toff2	turn-off time2	(Note 1)	-	40	-	μs
VOH3	output High voltage3	(Note 1) Vf=H	13.7	15.0	16.3	V
VOL3	output Low voltage3	(Note 1) Vf=L	-	-	0.5	V
ton3	turn-on time3	(Note 1)	-	2.0	-	μs
toff3	turn-off time3	(Note 1)	-	50	-	μs

\*Characteristic of Hic unit apply to individual Hic.

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



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**FOR SAFETY USING**

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

CAUTIONS	
Packing	The materials used in packing products can only withstand normal external conditions. When exposed to outside shocks, rain and certain environmental contaminants, the packing materials will deteriorate. 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 products, 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, products must be kept non-processed. When using products 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 products within the maximum ratings. The temperature, current, voltage, etc. must not exceed these conditions.
Polarity	To protect products 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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