

Features

Off-Chip Capacitive Isolation to Achieve Reliable High Voltage Insulation

DTI (Distance Through Insulation): 0.5 mm

Maximum Working Insulation Voltage: 2000 V_{peak}

Bi-directional Communication

100 kV/μs Minimum Common Mode Rejection

8 mm Creepage and Clearance Distance to Achieve Reliable High Voltage Insulation

Specifications Guaranteed Over 2.5 V to 5.5 V Supply Voltage and -40 °C to 125 °C Extended Temperature Range

Over Temperature Detection

Output Enable Function (Primary and Secondary side)

NCID9401, NCID9411, NCID9400, NCID9410

NCID9401, NCID9411, NCID9400, NCID9410

PIN CONFIGURATION

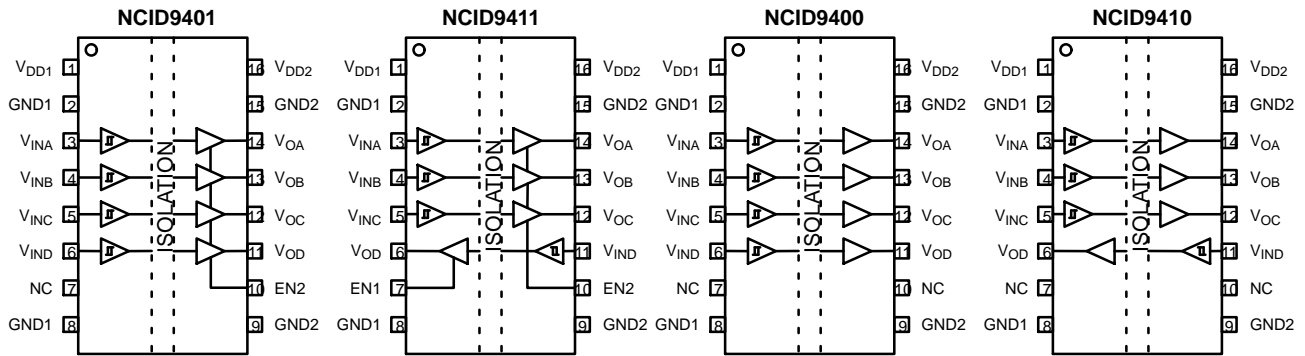


Figure 2. Pin and Channel Configuration

PIN DEFINITION

Name	Pin No. NCID9401	Pin No. NCID9411	Pin No. NCID9400	Pin No. NCID9410	Description
V _{DD1}	1	1	1	1	Power Supply, Side 1
GND1	2	2	2	2	Ground Connection for V _{DD1}
V _{INA}	3	3	3	3	Input, Channel A
V _{INB}	4	4	4	4	Input, Channel B
V _{INC}	5	5	5	5	Input, Channel C
V _{IND}	6	11	6	11	Input, Channel D
EN1	–	7	–	–	Output Enable 1
NC	7	–	7	7	No Connect
GND1	8	8	8	8	Ground Connection for V _{DD1}
GND2	9	9	9	9	Ground Connection for V _{DD2}
NC	–	–	10	10	No Connect
EN2	10	10	–	–	Output Enable 2
V _{OD}	11	6	11	6	Output, Channel D
V _{OC}	12	12	12	12	Output, Channel C
V _{OB}	13	13	13	13	Output, Channel B
V _{OA}	14	14	14	14	Output, Channel A
GND2	15	15	15	15	Ground Connection for V _{DD2}
V _{DD2}	16	16	16	16	Power Supply, Side 2

NCID9401, NCID9411, NCID9400, NCID9410

NCID9401, NCID9411, NCID9400, NCID9410

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit
T_{STG}	Storage Temperature	-55 to +150	C
T_{OPR}	Operating Temperature	-40 to +125	C
T_J	Junction Temperature	-40 to +150	C
T_{SOL}	Lead Solder Temperature (Refer to Reflow Temperature Profile)	260 for 10 s	C
V_{DD}	Supply Voltage (V_{DDx})	-0.5 to 6	V
V	Voltage (V_{INx} , V_{Ox} , ENx)	-0.5 to 6	V

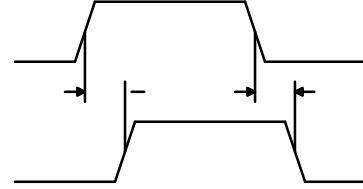
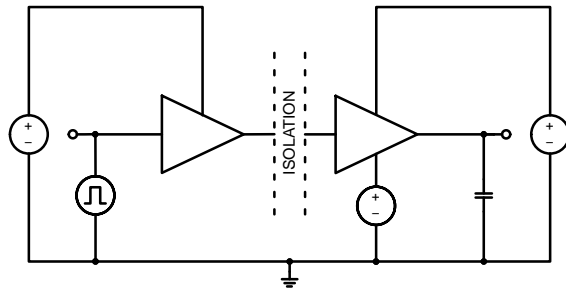
NCID9401, NCID9411, NCID9400, NCID9410

SWITCHING CHARACTERISTICS – NCID9411/NCID9410

Apply over all recommended conditions, $T_A = -40$ C to $+125$ C unless otherwise specified. All typical values are measured at $T_A = 25$ C.

Symbol	Parameter	Ch	Conditions	Min	Typ	Max	Unit	Figure
t_{PHL}	Propagation Delay to Logic Low Output (Note 8)	A, B, C	$V_{DD} = 5$ V, $C_L = 15$ pF					

TEST CIRCUITS



NCID9401, NCID9411, NCID9400, NCID9410

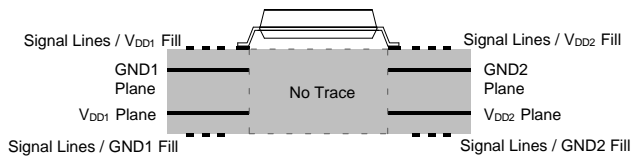


Figure 20. 4-Layer PCB for Digital Isolator



Figure 21. Placement of Bypass Capacitors

SOIC16 W



onsemi, **onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi**
