

Datasheets

Digital Electronics

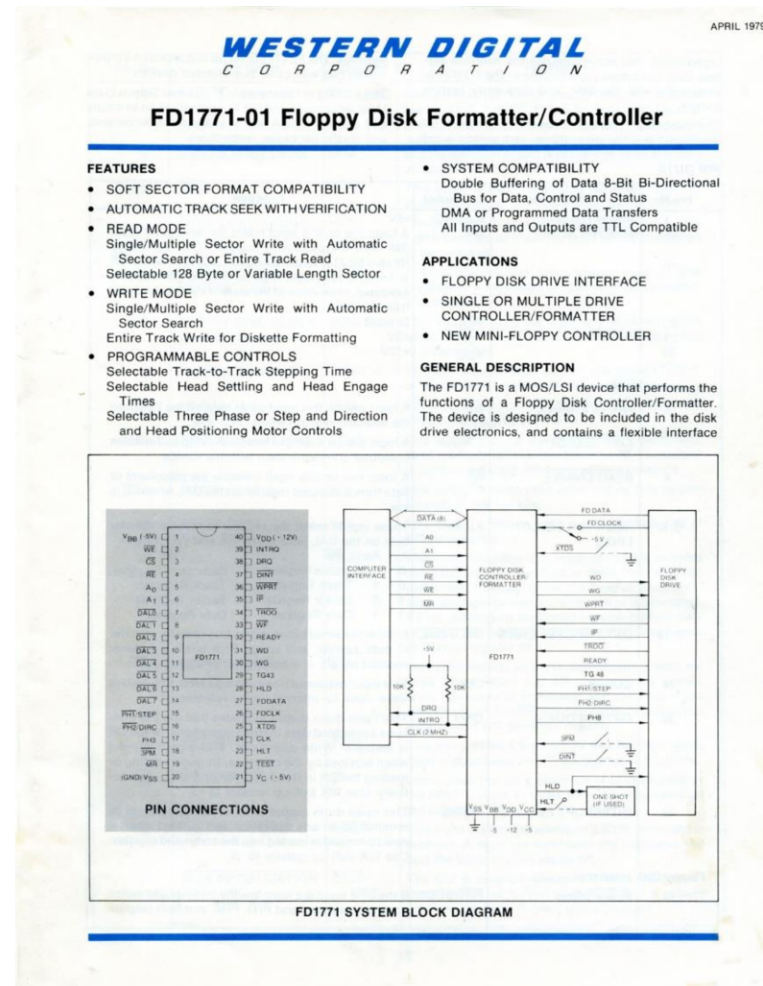
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Datasheets (1)

- Datasheet
 - Technical documentation
 - Summarizes characteristics
 - Function
 - Physical design
 - Pins and connections
 - Electrical specifications
 - Shows typical applications
 - Role of the component in a system

Datasheets (2)

- Structure
 - Title
 - Product Name
 - Subtitle
 - Characterization
 - Content
 - Specification
 - History
 - Revisions



Datasheets (3)

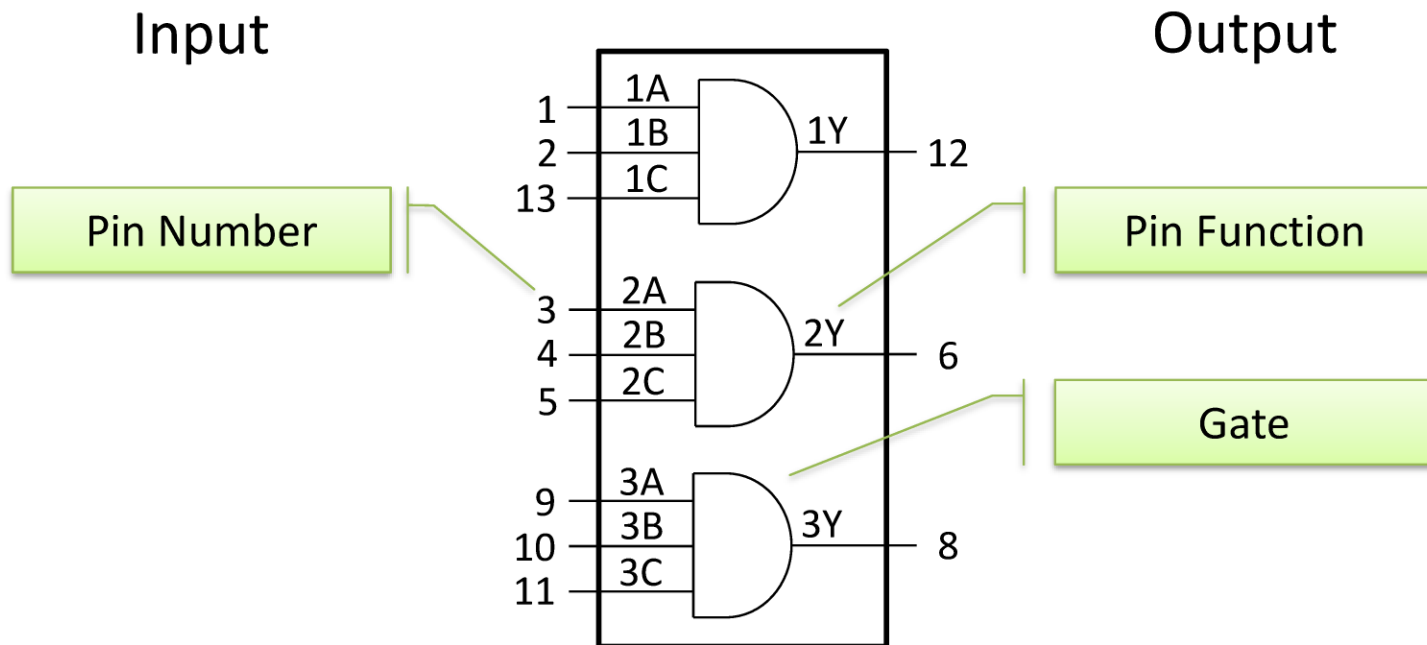
- Contents
 - General description
 - Functional diagram
 - Functional description
 - Pinning information
 - Pin description
 - Limiting values
 - Recommended operating conditions

Datasheets (4)

- Characterization
 - Example: 74HC11 - Triple 3-input AND gate
 - Triple → There are three components
 - 3-input → Each component has three input lines
 - AND gate → The component is an AND gate
 - Example: MAX7219 - 8-Digit LED Display Driver
 - 8-Digit → There are eight digits
 - LED Display → They are displayed on a LED display
 - Driver → The component drives the display

Datasheets (5)

- Functional Diagram
 - Example: 74HC11 - Triple 3-input AND gate



Datasheets (6)

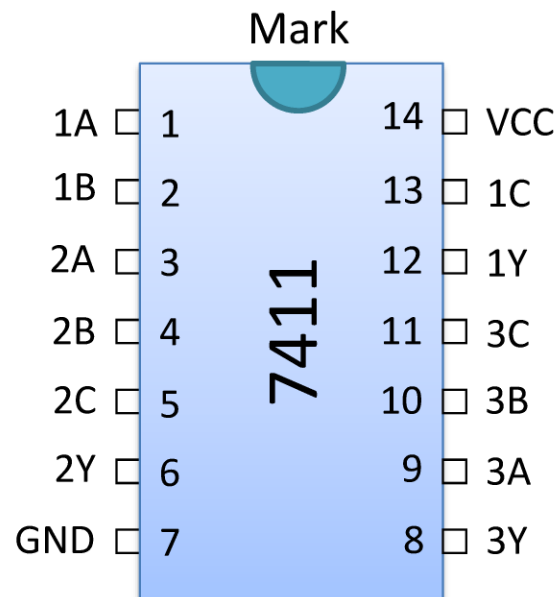
- Functional Description
 - Example: 74HC11 - Triple 3-input AND gate

Input			Output
nA	nB	nC	nY
L	X	X	L
X	L	X	L
X	X	L	L
H	H	H	H

L = low voltage; H = high voltage; X = don't care

Datasheets (7)

- Pinning Information
 - Example: 74HC11 - Triple 3-input AND gate



Datasheets (8)

- Pin Description
 - Example: 74HC11 - Triple 3-input AND gate

Symbol	Pin	Description
1A, 2A, 3A	1, 3, 9	data input
1B, 2B, 3B	2, 4, 10	data input
1C, 2C, 3C	13, 5, 11	data input
1Y, 2Y, 3Y	12, 6, 8	data output
V _{CC}	14	supply voltage
GND	7	ground (0 V)

Datasheets (9)

- Limiting Values
 - Example: 74HC11 - Triple 3-input AND gate

Symbol	Parameter	Min	Max	Unit
V_{CC}	supply voltage	-0.5	+7	V
I_O	output current		± 25	mA
I_{CC}	supply current		50	mA
T_{stg}	storage temperature	-50	+150	°C
P_{tot}	total power dissipation		500	mW

Datasheets (10)

- Recommended operating conditions
 - Example: 74HC11 - Triple 3-input AND gate

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	supply voltage	2.0	5.0	6.0	V
V_I	input voltage	0		V_{CC}	V
V_O	output voltage	0		V_{CC}	V
T_{amb}	ambient temperature	-40		+125	°C