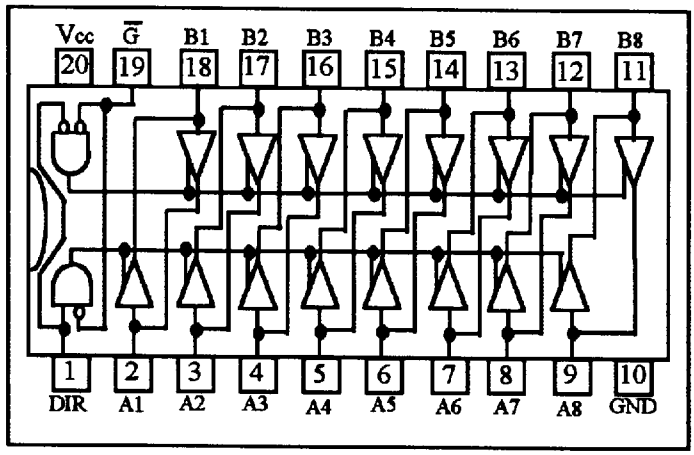
Description

The GD74F245 contains eight non-inverting bidirectional buffers with 3-State outputs and is intended for bus-oriented applications. Current sinking capability is 20mA at the A ports and 64 mA at the B ports. The device allows data transmission from A ports to the B ports or from the B ports to the A ports depending upon the logic level at the directional control(DIR) Input. The output enable Input ($\overline{G}$), when high, disables both A and B ports by placing them in a high Z condition.

Pin Configuration



Features

- Non-Inverting Buffers
- Bidirectional Data Path
- B Outputs Sink 64 mA

Function Table

Inputs		Operation
$\overline{G}$	DIR	
L	L	Bus B Data to Bus A
L	H	Bus A Data to Bus B
H	X	High Z State

X: Immaterial

Absolute Maximum Ratings

Storage Temperature	-65 ℃ ~ 150 ℃
Ambient Temperature Under Bias	-55 ℃ ~ 125 ℃
Junction Temperature Under Bias	-0.5 ℃ ~ 175 ℃
Vcc Voltage	-0.5 V ~ 7.0 V
Input Voltage	-0.5 V ~ 7.0 V
Input Current	-30 mA ~ 5.0 mA
Output Voltage	-0.5 V ~ 5.5 V

Note : Absolute Maximum ratings are values beyond which the device maybe damaged or have its useful life impaired. Functional operation under these conditions is not implied.

Recommended Operating Conditions

Free Air Ambient Temperature	0 ℃ ~ 70 ℃
Supply Voltage	4.5 V ~ 5.5 V

DC Electrical Characteristics over recommended operating free-air temperature range

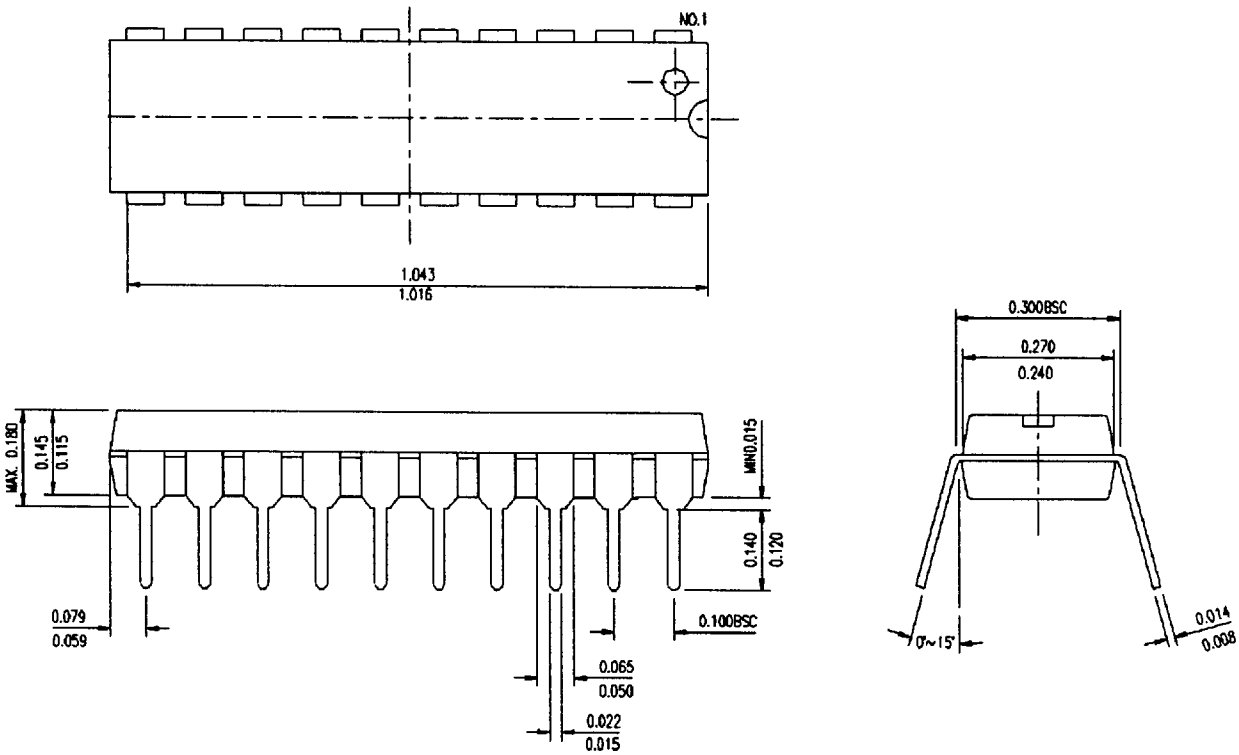
SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	Vcc	CONDITION	TEST CIRCUIT
V_{IH}	Input High Voltage	2.0			V		----------	
V_{IL}	Input Low Voltage			0.8	V		----------	
V_{CD}	Input Clamp Diode Voltage			-1.2	V	Min	I_{IN} = -18mA	See FIG. 18
V_{OH}	Output High Voltage A Ports B Ports A Ports	2.4 2.0 2.7			V	4.5 4.5 4.75	I_{OH} = - 3mA I_{OH} = - 15mA I_{OH} = - 3mA	See FIG. 19
V_{OL}	Output Low A Ports B Ports			0.5 0.55	V V	4.5 4.5	I_{OL} = 24 mA I_{OL} = 64 mA	
I_{IH}	Input High ($\overline{G}$, DIR) Current (A, B Ports)			5.0 70	µA	Max	V_{IN} = 2.7 V	See FIG. 20
I_I	Input High Current ($\overline{G}$, DIR) Breakdown Test (A, B Ports)			7.0 0.5	µA mA	Max Max	V_{IN} = 7.0 V V_{IN} = 5.5 V	
I_{IL}	Input Low ($\overline{G}$, DIR) Current (A,B Ports)			-1.2 -0.65	mA mA	Max	V_{IN} = 0.5 V	
I_{ILK}	Input Leakage Circuit Current			1.9	µA	0.0	V_{IN} = 4.75 V All other pins grounded	See FIG. 21
I_{OLK}	Output Leakage Circuit Current			3.75	µA	0.0	V_{OUT} = 150 mV All other pins grounded	See FIG. 22
I_{OZH}	Tri-State Output Off Current (High)			70	µA	Max	V_{OUT} = 2.7 V	See FIG. 23
I_{OZL}	Tri-State Output Off Current (Low)			-0.65	mA	Max	V_{OUT} = 0.5 V	

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	Vcc	CONDITION	TEST CIRCUIT
Ios	Output Short Circuit Current A Ports B Ports	- 60 -100		-150 -225	mA mA	Max	VOUT = 0 V	See FIG. 24
ICCH ICCL ICCZ	Supply Current		70 95 85	90 120 110	mA	Max	VOUT = High VOUT = Low VOUT = High Z	See FIG. 25

* For Ios, Not more than one output should be shorted at a time, and duration should not exceed one second

AC Characteristics

SYMBOL	PARAMETER	TEST CONDITION						UNIT
		TA = 25 ℃ VCC = 5.0 V CL = 50 pF			TA = 0 ~ 70℃ VCC = 5 V ± 10 % CL = 50pF			
		MIN	TYP	MAX	MIN	TYP	MAX	
tPLH tPHL	Propagation Delay An to Bn or Bn to An	2.5 2.5	4.2 4.6	6.0 6.0	2.0 2.0		7.0 7.0	ns
tPZH tPZL	Output Enable Time	3.0 3.5	5.3 6.0	7.0 8.0	2.5 3.0		8.0 9.0	ns
tPHZ tPLZ	Output Disable Time	2.0 2.0	5.0 5.0	6.5 6.5	2.0 2.0		7.5 7.5	ns


NO.1
1.043
1.016
MAX. 0.180
0.145
0.115
MIN0.015
0.140
0.120
0.079
0.059
0.100BSC
0.065
0.050
0.022
0.015
0.300BSC
0.270
0.240
0~15°
0.014
0.008