- **Local Bus-Latch Capability**
- **Noninverting Logic**
- **Package Options Include Plastic Small-Outline Packages, Ceramic Chip Carriers, and Standard Plastic and Ceramic 300-mil DIPs**
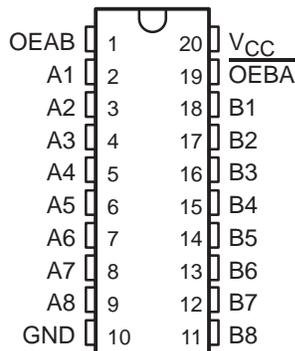
description

These octal bus transceivers are designed for asynchronous communication between data buses. The control function implementation allows for maximum flexibility in timing.

These devices allow data transmission from the A bus to the B bus or from the B bus to the A bus depending upon the logic levels at the output enable (OEAB and $\overline{\text{OEBA}}$) inputs.
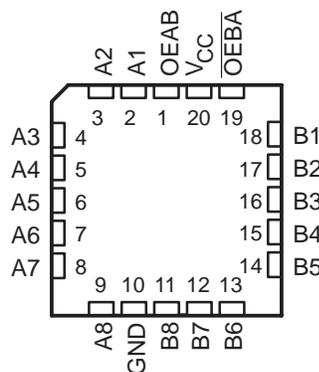
The output-enable inputs can be used to disable the device so that the buses are effectively isolated. The dual-enable configuration gives the transceivers the capability of storing data by simultaneously enabling OEAB and $\overline{\text{OEBA}}$. Each output reinforces its input in this configuration. When both OEAB and $\overline{\text{OEBA}}$ are enabled and all other data sources to the two sets of bus lines are at high impedance, both sets of bus lines (16 in all) will remain at their last states.

The SN54F621 is characterized for operation over the full military temperature range of −55°C to 125°C. The SN74F621 is characterized for operation from 0°C to 70°C.

SN54F621 . . . J PACKAGE
SN74F621 . . . DW OR N PACKAGE
(TOP VIEW)

OEAB	1	20	V_{CC}
A1	2	19	$\overline{\text{OEBA}}$
A2	3	18	B1
A3	4	17	B2
A4	5	16	B3
A5	6	15	B4
A6	7	14	B5
A7	8	13	B6
A8	9	12	B7
GND	10	11	B8

SN54F621 . . . FK PACKAGE
(TOP VIEW)

Top: A2 (3), A1 (2), OEAB (1), V_{CC} (20), $\overline{\text{OEBA}}$ (19)

A3	4	18	B1
A4	5	17	B2
A5	6	16	B3
A6	7	15	B4
A7	8	14	B5

Bottom: A8 (9), GND (10), B8 (11), B7 (12), B6 (13)

FUNCTION TABLE

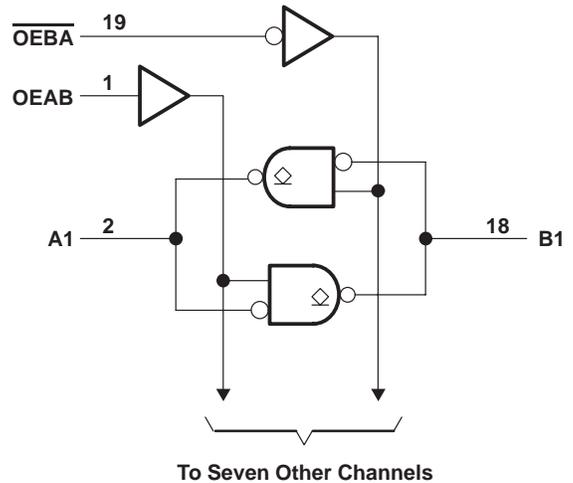| INPUTS		OPERATION
$\overline{\text{OEBA}}$	OEAB	
L	L	B data to A bus
L	H	B data to A bus, A data to B bus
H	L	Isolation
H	H	A data to B bus

TEXAS INSTRUMENTS

SN54F621, SN74F621
OCTAL BUS TRANSCEIVERS
WITH OPEN-COLLECTOR OUTPUTS

SDFS004B – D2932, MARCH 1987 – REVISED OCTOBER 1993

logic symbol†
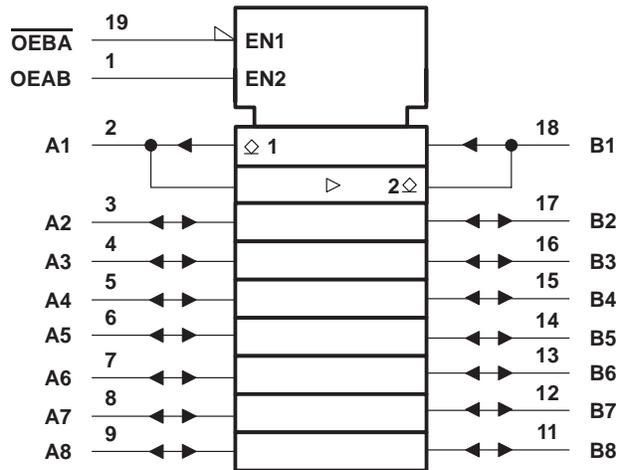
logic diagram (positive logic)

To Seven Other Channels

† This symbol is in accordance with ANSI/IEEE Std 91-1984 and
IEC Publication 617-12.

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)‡

Supply voltage range, V_{CC} .... −0.5 V to 7 V
Input voltage range, V_I (excluding I/O ports) (see Note 1) .... −1.2 V to 7 V
Input current range, I_{IK} .... −30 mA to 5 mA
Voltage range applied to any output in the high state .... −0.5 V to 5.5 V
Current into any output in the low state: SN54F621 (A1−A8) .... 40 mA
                            SN54F621 (B1−B8) .... 96 mA
                            SN74F621 (A1−A8) .... 48 mA
                            SN74F621 (B1−B8) .... 128 mA
Operating free-air temperature range: SN54F621 .... −55°C to 125°C
                                   SN74F621 .... 0°C to 70°C
Storage temperature range .... −65°C to 150°C

‡ Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and
functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not
implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

NOTE 1:   The input-voltage ratings may be exceeded provided the input-current ratings are observed.

recommended operating conditions

			SN54F621			SN74F621			UNIT
			MIN	NOM	MAX	MIN	NOM	MAX	
V_{CC}	Supply voltage		4.5	5	5.5	4.5	5	5.5	V
V_{IH}	High-level input voltage		2			2			V
V_{OH}	High-level output voltage				5.5			5.5	V
V_{IL}	Low-level input voltage				0.8			0.8	V
I_{IK}	Input clamp current				− 18			− 18	mA
I_{OL}	Low-level output current	A1−A8			20			24	mA
		B1−B8			48			64	
T_A	Operating free-air temperature		− 55		125	0		70	°C

TEXAS
INSTRUMENTS

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electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER		TEST CONDITIONS		SN54F621 MIN	TYP†	MAX	SN74F621 MIN	TYP†	MAX	UNIT
V_{IK}		V_{CC} = 4.5 V,	I_I = – 18 mA			– 1.2			– 1.2	V
I_{OH}		V_{CC} = 4.5 V,	V_{OH} = 5.5 V			250			250	μA
V_{OL}	A1–A8	V_{CC} = 4.5 V	I_{OL} = 20 mA		0.3	0.5				V
			I_{OL} = 24 mA					0.35	0.5	
	B1–B8		I_{OL} = 48 mA		0.38	0.55				
			I_{OL} = 64 mA					0.42	0.55	
I_I	A and B ports	V_{CC} = 5.5 V	V_I = 5.5 V			1			1	mA
	OEAB or $\overline{OEBA}$		V_I = 7 V			0.1			0.1	
I_{IH}‡	A and B ports	V_{CC} = 5.5 V,	V_I = 2.7 V			70			70	μA
	OEAB or $\overline{OEBA}$					20			20	
I_{IL}‡	A and B ports	V_{CC} = 5.5 V,	V_I = 0.5 V			– 0.65			– 0.65	mA
	OEAB or $\overline{OEBA}$					– 0.6			– 0.6	
I_{CCH}		V_{CC} = 5.5 V			105	140		105	140	mA
I_{CCL}		V_{CC} = 5.5 V			105	140		105	140	mA

† All typical values are at V_{CC} = 5 V, T_A = 25°C.
‡ For I/O ports, the parameters I_{IH} and I_{IL} include the off-state output current.

switching characteristics (see Note 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC} = 5 V, C_L = 50 pF, R_L = 500 Ω, T_A = 25°C 'F621 MIN	TYP	MAX	V_{CC} = 4.5 V to 5.5 V, C_L = 50 pF, R_L = 500 Ω, T_A = MIN to MAX§ SN54F621 MIN	MAX	SN74F621 MIN	MAX	UNIT
t_{PLH}	A	B	6	9.5	12	5.5	13	5.5	13	ns
t_{PHL}			2.5	3.8	8	2	8.5	2	8.5	
t_{PLH}	B	A	6	9	12	5.5	12.5	5.5	12.5	ns
t_{PHL}			2.5	4	7.5	2	8	2	8	
t_{PLH}	$\overline{OEBA}$	A	6	10	13.5	5.5	14	5.5	14	ns
t_{PHL}			3.5	6.5	10.5	2.5	11	2.5	11	
t_{PLH}	OEAB	B	7	12	15	6	17	6	17	ns
t_{PHL}			3.5	6.5	9.5	3	10	3	10	

§ For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
NOTE 2: Load circuits and waveforms are shown in Section 1.

![Texas Instruments logo]

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SN54F621, OCTAL BUS TRANSCEIVERS WITH OPEN-COLLECTOR OUTPUTS
Device Status: Active

> Description
> Features
> Datasheets
> Pricing/Samples/Availability
> Application Notes
> Related Documents
> Training

Parameter Name	SN54F621
Voltage Nodes (V)	5
Vcc range (V)	4.5 to 5.5
Input Level	TTL
Output Level	TTL
No. of Outputs	8
Logic	True

Description

These octal bus transceivers are designed for asynchronous communication between data buses. The control function implementation allows for maximum flexibility in timing.

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To view the following documents, Acrobat Reader 3.x is required.
To download a document to your hard drive, right-click on the link and choose 'Save'.

Datasheets

Full datasheet in Acrobat PDF: sdfs004b.pdf (74 KB)
Full datasheet in Zipped PostScript: sdfs004b.psz (72 KB)

Pricing/Samples/Availability

Orderable Device	Package	Pins	Temp	Status	Price/unit USD (100-999)	Pack Qty	DSCC Number	Availability / Samples
5962-9050602SA	W	20	M	ACTIVE		1		Check stock or order
SN54F621J	J	20	M	ACTIVE	3.34	1		Check stock or order
SNJ54F621FK	FK	20	M	ACTIVE	11.52	1	5962-90506022A	Check stock or order
SNJ54F621J	J	20	M	ACTIVE	7.52	1	5962-9050602RA	Check stock or order
SNJ54F621W	J	20	M	ACTIVE		1	5962-9050602SA	Check stock or order

Application Reports

View Application Reports for Digital Logic

- BUS-INTERFACE DEVICES WITH OUTPUT-DAMPING RESISTORS OR REDUCED-DRIVE OUTPUTS (SCBA012A)
- DESIGNING WITH LOGIC (SDYA009C)
- INPUT AND OUTPUT CHARACTERISTICS OF DIGITAL INTEGRATED CIRCUITS (SDYA010)
- LOGIC SOLUTIONS FOR IEEE STD 1284 (SCEA013)
- LVT-TO-LVTH CONVERSION (SCEA010)

Related Documents

- DOCUMENTATION RULES (SAP) AND ORDERING INFORMATION (SZZU001B, 4 KB)
- LOGIC SELECTION GUIDE FEBRUARY 2000 (SDYU001M, 13837 KB)
- MORE POWER IN LESS SPACE - TECHNICAL ARTICLE (SCAU001A, 850 KB)

Table Data Updated on: 4/24/2000