

# SN54F621, SN74F621 OCTAL BUS TRANSCEIVERS WITH OPEN-COLLECTOR OUTPUTS

SDFS004B – D2932, MARCH 1987 – REVISED OCTOBER 1993

- 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

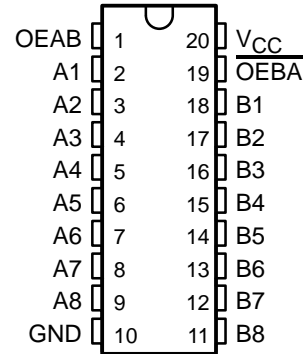
These octal bus transceivers are designed for asynchronous communication between data buses. The control function implementation allows for maximum flexibility in timing.

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.

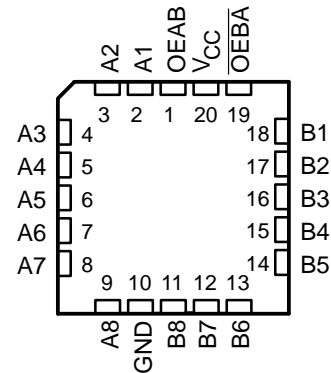
The output-enable inputs can be used to disable the device so that the buses are effectively isolated. The dual-enable configuration gives the transceivers the capability of storing data by simultaneously enabling OEAB and  $\overline{\text{OEBA}}$ . Each output reinforces its input in this configuration. 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  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . The SN74F621 is characterized for operation from  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ .

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



SN54F621 . . . FK PACKAGE  
(TOP VIEW)



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

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

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

† All typical values are at  $V_{CC} = 5\text{ V}$ ,  $T_A = 25^\circ\text{C}$ .

‡ 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)	VCC = 5 V, CL = 50 pF, RL = 500 Ω, TA = 25°C			VCC = 4.5 V to 5.5 V, CL = 50 pF, RL = 500Ω, TA = MIN to MAX§				UNIT
			'F621			SN54F621		SN74F621		
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
tPLH	A	B	6	9.5	12	5.5	13	5.5	13	ns
tPHL			2.5	3.8	8	2	8.5	2	8.5	
tPLH	B	A	6	9	12	5.5	12.5	5.5	12.5	ns
tPHL			2.5	4	7.5	2	8	2	8	
tPLH	OEBA	A	6	10	13.5	5.5	14	5.5	14	ns
tPHL			3.5	6.5	10.5	2.5	11	2.5	11	
tPLH	OEAB	B	7	12	15	6	17	6	17	ns
tPHL			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.

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