

DESCRIPTION

The 8241/82S41 contains four independent gating structures to perform the Exclusive-OR function on two input variables.

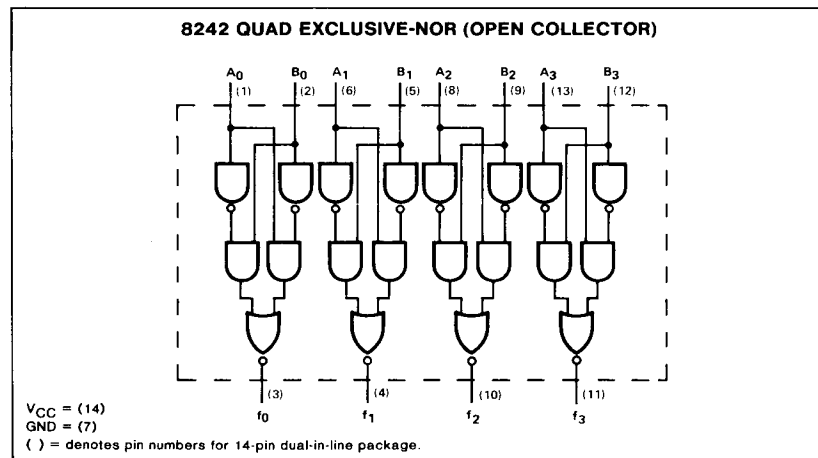
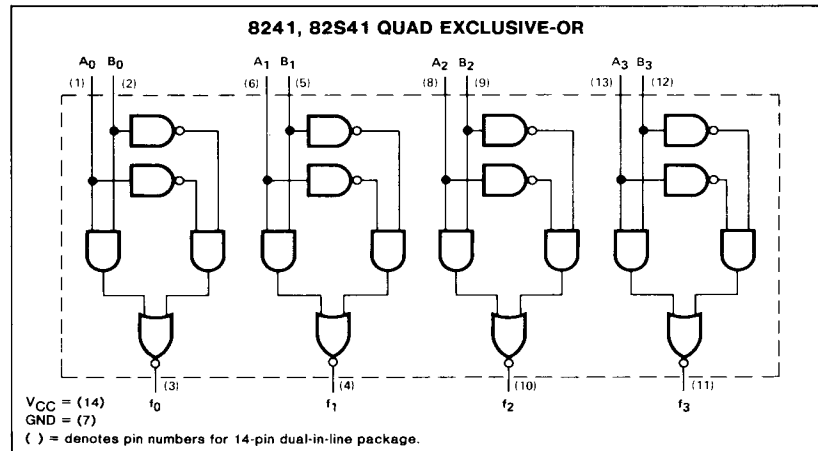
The output of the 8241/82S41 employs the totem-pole structure characteristic of TTL devices.

The 8242/82S42 contains four independent Exclusive-NOR gates which may be used to implement digital comparison functions. The 8242/82S42 outputs are open collector to facilitate implementation of multiple-bit comparisons; a 4-bit comparison is made by connecting the outputs of the four independent gates together.

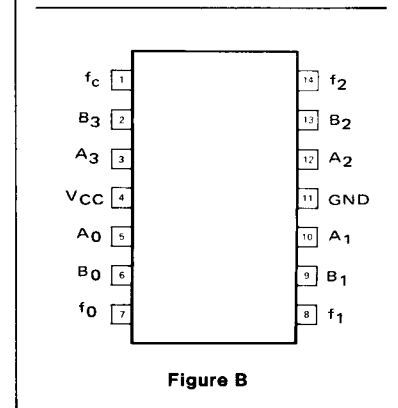
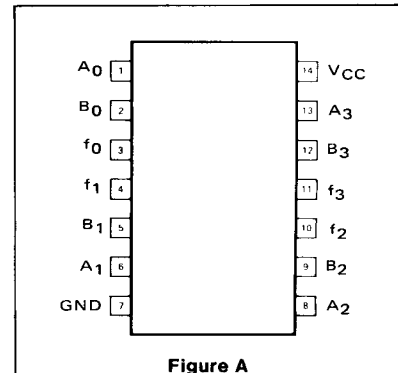
ORDERING CODE (See Section 9 for further Package and Ordering Information)

PACKAGES	PIN CONF.	COMMERCIAL RANGES $V_{CC}=5V \pm 5\%$; $T_A=0^{\circ}C$ to $+75^{\circ}C$		MILITARY RANGES $V_{CC}=5V \pm 5\%$; $T_A=-55^{\circ}C$ to $+125^{\circ}C$	
Plastic DIP	Fig. A	N8241N	• N8242N		
	Fig. A	N82S41N	• N82S42N		
Ceramic DIP	Fig. A	N8241F	• N8242F	S8241F	• S8242F
	Fig. A	N82S41F	• N82S42F		
Flatpak	Fig. B			S8241W	• S8242W

LOGIC DIAGRAMS



PIN CONFIGURATION



TRUTH TABLE

TYPE	INPUTS		OUTPUT
	A	B	f
8241/82S41	L	L	L
	H	L	H
	L	H	H
	H	H	L
8242/82S42	L	L	H
	H	L	L
	L	H	L
	H	H	H

NOTE
 H = HIGH voltage level
 L = LOW voltage level

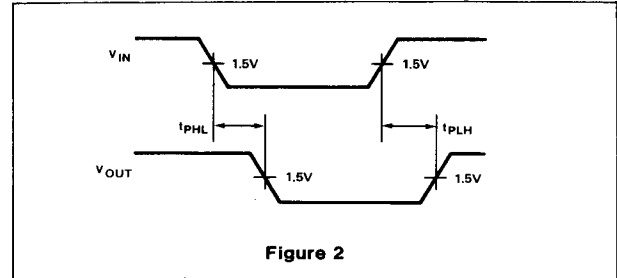
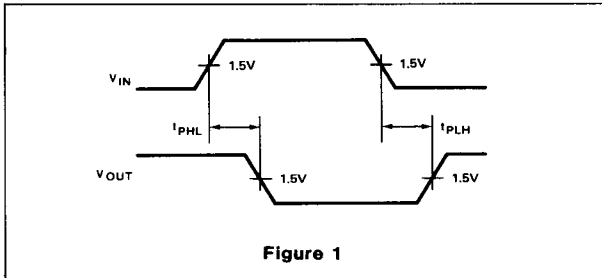
DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE

PARAMETER		TEST CONDITIONS		8241		8242		82S41		82S42		UNIT
				Min	Max	Min	Max	Min	Max	Min	Max	
V _{OH}	Output HIGH voltage	V _{CC} =4.75V	I _{OH} =-800μA	2.6								V
			I _{OH} =-1.0mA					2.7				V
V _{OL}	Output LOW voltage	V _{CC} =4.75V	I _{OL} =16mA		0.4							V
			I _{OL} =20mA					0.5				V
			I _{OL} =25mA				0.4				0.5	V
I _{OH}	Output HIGH current	V _{CC} = 5.25V V _{OUT} =5.0V					25				250	μA
I _{IH}	Input HIGH current	V _{CC} = 5.25V V _{IN} = 4.5V			80		80		10		10	μA
I _{IL}	Input LOW current	V _{CC} = 5.25V V _{IN} = 0.4V		-0.1	-3.2	-0.1	-3.2		-0.8		-0.8	mA
V _{BD}	Input breakdown voltage	V _{CC} = 5.25V I _{IN} = 10mA		5.5		5.5						V
V _{CD}	Input clamp voltage	V _{CC} = 4.75V I _{IN} =-18mA							-1.2		-1.2	V
I _{OS}	Output short circuit current	V _{CC} = 5.25V V _{OUT} = 0V		-20	-70			-40	-100			V
I _{CC}	Supply current	V _{CC} = 5.25V			57		47.5		55		62	mA

AC CHARACTERISTICS: T_A 25°C $V_{CC} = 5.25V$ (See Section 4 for Waveforms and Conditions)

PARAMETER		TEST CONDITIONS	8241		8242		82S41		82S42		UNIT
			$C_L = 30\text{pF}$		$C_L = 30\text{pF}$ $R_1 = \infty$ $R_2 = 84.2\Omega$		$C_L = 15\text{pF}$ $R_L = 280\Omega$		$C_L = 15\text{pF}$ $R_L = 280\Omega$		
			Min	Max	Min	Max	Min	Max	Min	Max	
tPLH	Propagation delay	Figures 1, 3 & 4		17		23		10		14	ns
tPHL	Inverting path			23		20		10		14	ns
tPLH	Propagation delay	Figures 2, 3 & 4		17		28		10		14	ns
tPHL	Non-inverting path			23		21		10		14	ns

AC WAVEFORMS



AC TEST FIGURE

