

HD14529B

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捷多邦，专业PCB打样工厂，24小时加急

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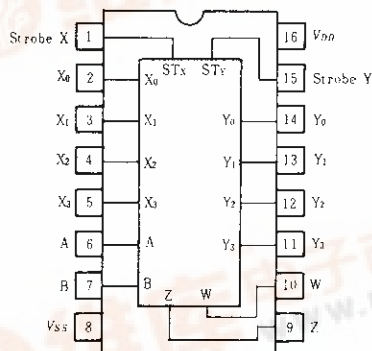
Dual 4-Channel Analog Data Selector

The HD14529B analog data selector is a dual 4-channel or single 8-channel device depending on the input coding. The device is suitable for digital as well as analog application, including various one-of-four and one-of-eight data selector functions. Since the device has bidirectional analog characteristics it can also be used as a dual binary to 1-of-4 or a binary to 1-of-8 decoder.

FEATURES

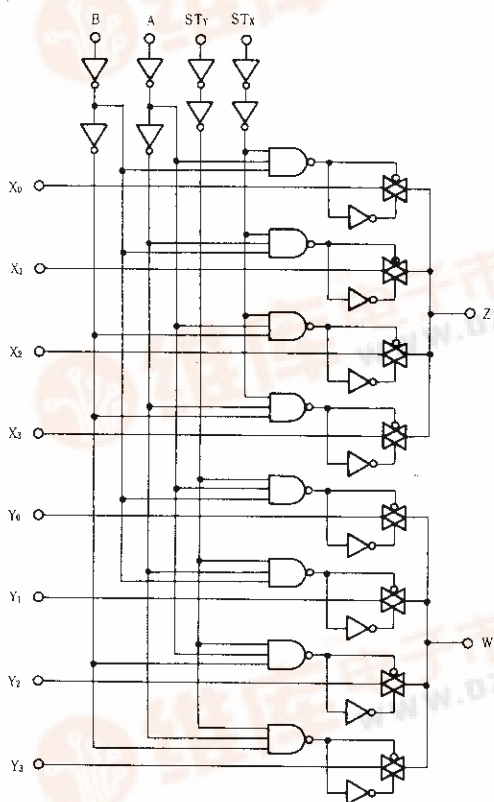
- Data Paths are Bidirectional
- Quiescent Current = 1nA/pkg typ. @5V
- 10MHz Operation (typ.)
- 3-state Outputs
- Linear "ON" Resistance
- "ON" Resistance 120Ω typ. @15V
- Low Noise = 12nV $\sqrt{\text{Cycle}}$, $f \geq 1\text{kHz}$ typ.
- Supply Voltage Range = 3 to 18V
- Capable of Driving One Low-power Schottky TTL Load Over the Rated Temperature Range

PIN ARRANGEMENT



(Top View)

LOGIC DIAGRAM



TRUTH TABLE

Strobe X	Strobe Y	B	A	Z	W	Mode
1	1	0	0	X ₀	Y ₀	Dual 4-Channel 2 Output
1	1	0	1	X ₁	Y ₁	
1	1	1	0	X ₂	Y ₂	
1	1	1	1	X ₃	Y ₃	Single 8-Channel 1 Output (Z and W tied together)
1	0	0	0	X ₀		
1	0	0	1	X ₁		
1	0	1	0	X ₂		
1	0	1	1	X ₃		
0	1	0	0	Y ₀		
0	1	0	1	Y ₁		
0	1	1	0	Y ₂		
0	1	1	1	Y ₃		
0	0	×	×	High Impedance		

× = Don't Care

■ ELECTRICAL CHARACTERISTICS

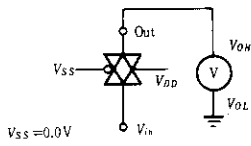
Characteristic		Symbol	Test Circuit	Test Conditions		-40℃		25℃			85℃		Unit		
				$V_{SS}(V)$	$V_{DD}(V)$	min	max	min	typ	max	min	max			
Output Voltage	V_{OL}	1	0	5.0	$V_{in}=V_{DD}$ or 0	—	0.05	—	0	0.05	—	0.05	V		
				10		—	0.05	—	0	0.05	—	0.05			
				15		—	0.05	—	0	0.05	—	0.05			
	V_{OH}		0	5.0	$V_{in}=0$ or V_{DD}	4.95	—	4.95	5.0	—	4.95	—	V		
				10		9.95	—	9.95	10	—	9.95	—			
				15		14.95	—	14.95	15	—	14.95	—			
Noise Immunity	V_{NL}	2	0	5.0	$I_{out}\leq 10\mu A$	1.5	—	1.5	2.25	—	1.4	—	V		
				10		3.0	—	3.0	4.50	—	2.9	—			
				15		4.0	—	4.5	6.75	—	4.4	—			
	V_{NH}		0	5.0	$I_{out}\geq 10\mu A$	1.4	—	1.5	2.25	—	1.5	—	V		
				10		2.9	—	3.0	4.50	—	3.0	—			
				15		4.4	—	4.5	6.75	—	4.5	—			
Input Current		I_{in}		0	15		—	± 0.3	—	± 0.0001	± 0.3	—	± 1.0	μA	
Input Capacitance	Control	C_{in}	0			—	—	—	5.0	7.5	—	—	pF		
	Switch Input					—	—	—	8.0	—	—	—			
	Switch Output					—	—	—	20	—	—	—			
	Feed Through					—	—	—	0.3	—	—	—			
Quiescent Current		I_{DD}	3		5.0	Zero Signal, per Package	—	5.0	—	0.001	5.0	—	70	μA	
					10		—	5.0	—	0.002	5.0	—	70		
					15		—	10	—	0.003	10	—	140		
ON Resistance		R_{ON}	4	-5.0	5.0	$V_C=V_{DD},$ $R_L=10k\Omega$	$V_{in}=+5.0V$	—	410	—	200	480	—	560	Ω
							$V_{in}=-5.0V$	—	410	—	200	480	—	560	
							$V_{in}=\pm 0.25V$	—	410	—	190	480	—	560	
				-7.5	7.5	$V_C=V_{DD},$ $R_L=10k\Omega$	$V_{in}=+7.5V$	—	250	—	160	270	—	350	
							$V_{in}=-7.5V$	—	250	—	160	270	—	350	
							$V_{in}=\pm 0.25V$	—	250	—	120	270	—	350	
				0	10	$V_C=V_{DD},$ $R_L=10k\Omega$	$V_{in}=+10V$	—	410	—	180	480	—	560	
							$V_{in}=\pm 0.25V$	—	410	—	180	480	—	560	
							$V_{in}=+5.6V$	—	410	—	220	480	—	560	
				0	15	$V_C=V_{DD},$ $R_L=10k\Omega$	$V_{in}=+15V$	—	250	—	180	270	—	350	
							$V_{in}=\pm 0.25V$	—	250	—	180	270	—	350	
							$V_{in}=+9.3V$	—	250	—	215	270	—	350	
Δ ON Resistance Between Any Two Channels		ΔR_{ON}		-5.0	5.0	$V_{in}=\pm 5.0V$	—	—	—	15	—	—	—	Ω	
				-7.5	7.5	$V_{in}=\pm 7.5V$	—	—	—	10	—	—	—		

SWITCHING CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

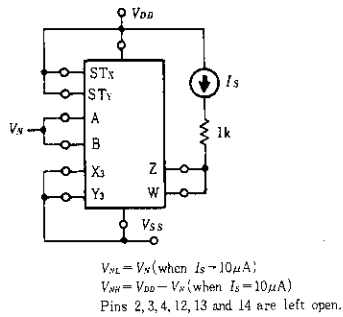
Characteristic		Symbol	Test Circuit	V_{SS} (V)	V_{DD} (V)	Test Conditions	typ	max	Unit	
Propagation Delay Time	V_{in} to V_{out}	t_{PLH} , t_{PHL}	5	0	5.0	$C_L=50\text{pF}$, $R_L=1.0\text{k}\Omega$	20	60	ns	
					10		10	30		
					15		8.0	25		
	Control to Output		6	0	5.0	$V_{in}=V_{DD}$ or V_{SS} , $V_{in}\leq 10\text{V}$, $C_L=50\text{pF}$, $R_L=1.0\text{k}\Omega$	200	600		
					10		80	240		
					15		50	180		
Crosstalk (Control to Output)		7	0	5.0	$C_L=50\text{pF}$, $R_L=1.0\text{k}\Omega$, $R_{out}=10\text{k}\Omega$	5.0	—	mV		
				10		5.0	—			
				15		5.0	—			
Maximum Control Input Pulse Frequency		8	0	5.0	$C_L=50\text{pF}$, $R_L=1.0\text{k}\Omega$	5.0	—	MHz		
				10		10	—			
				15		12	—			
Noise Voltage		9	0	5.0	$f=100\text{Hz}$	24	—	$\text{nV}/\sqrt{\text{Hz}}$		
				10		25	—			
				15		30	—			
				5.0	$f=100\text{kHz}$	12	—			
				10		12	—			
				15		15	—			
Sine Wave (Distortion)				-5.0	5.0	$V_{in}=1.77\text{V}$, $R_L=10\text{k}\Omega$, $f=1.0\text{kHz}$	0.36	—	%	
Input/Output Leakage Current				-5.0	5.0	$V_{in}=+5.0\text{V}$, $V_{out}=-5.0\text{V}$	± 0.001	± 125	nA	
				-5.0	5.0	$V_{in}=-5.0\text{V}$, $V_{out}=+5.0\text{V}$	± 0.001	± 125		
				-7.5	7.5	$V_{in}=+7.5\text{V}$, $V_{out}=-7.5\text{V}$	± 0.0015	± 250		
				-7.5	7.5	$V_{in}=-7.5\text{V}$, $V_{out}=+7.5\text{V}$	± 0.0015	± 250		
Insertion Loss				-5.0	5.0	$V_{in}=1.77\text{V}$, $f=1\text{MHz}$, $I_{loss}=20\log_{10}\frac{V_{out}}{V_{in}}$	$R_L=1.0\text{k}\Omega$	2.0	—	dB
						$R_L=10\text{k}\Omega$	0.8	—		
						$R_L=100\text{k}\Omega$	0.25	—		
						$R_L=1.0\text{M}\Omega$	0.01	—		
Bandwidth		BW		-5.0	5.0	$V_{in}=1.77\text{V}$	$R_L=1.0\text{k}\Omega$	35	—	MHz
							$R_L=10\text{k}\Omega$	28	—	
							$R_L=100\text{k}\Omega$	27	—	
							$R_L=1.0\text{M}\Omega$	26	—	
Feedthrough and Crosstalk				-5.0	5.0	$20\log_{10}\frac{V_{out}}{V_{in}}=-50\text{dB}$	$R_L=1.0\text{k}\Omega$	850	—	kHz
							$R_L=10\text{k}\Omega$	100	—	
							$R_L=100\text{k}\Omega$	12	—	
							$R_L=1.0\text{M}\Omega$	1.5	—	

■ DC CHARACTERISTIC TEST CIRCUIT

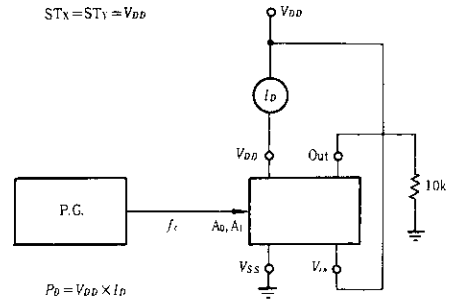
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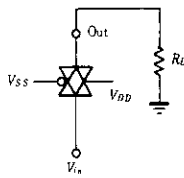
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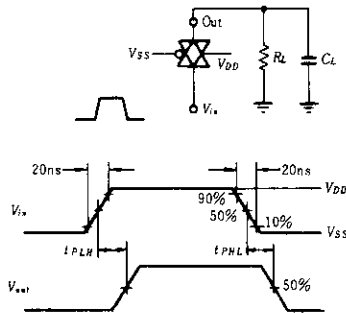
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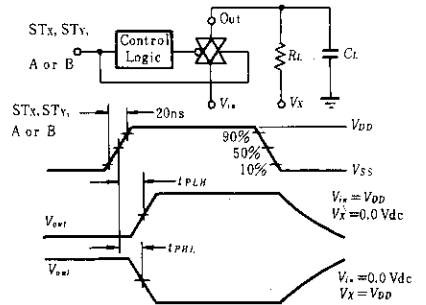
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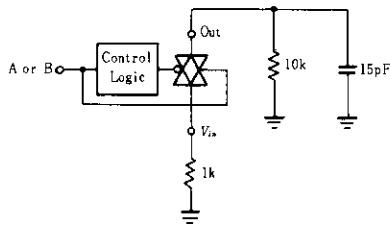
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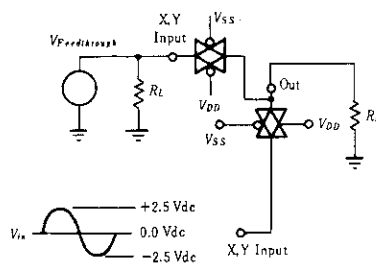
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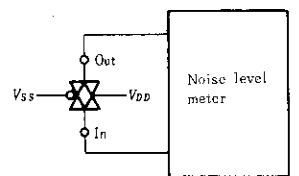
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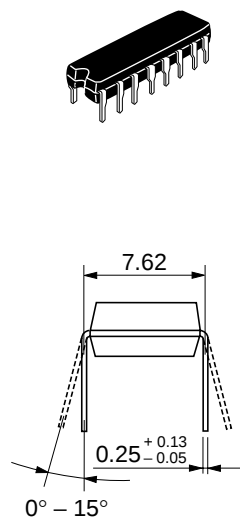
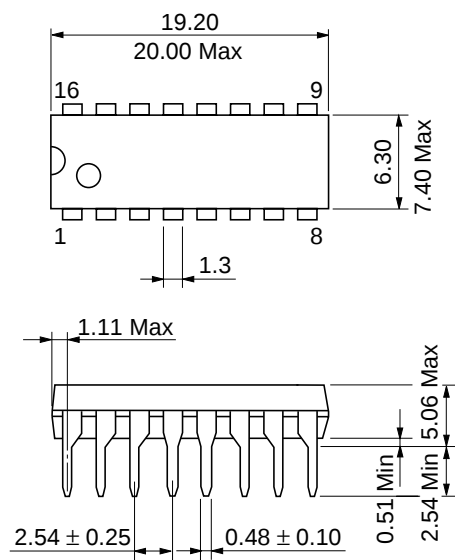


8.



9.





Unit: mm

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