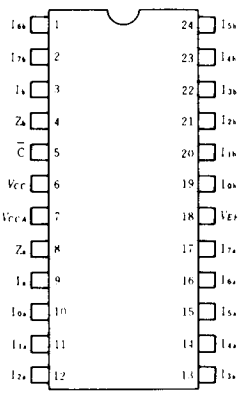
Dual Parity Generators/Checker

The HD100160 is a Dual Parity Checker/Generator. Each half has nine inputs, with the output being high when an even number of inputs are high. One of the nine inputs(Ia or Ib) has the shorter through-put delay and is therefore preferred as the expansion input for generating parity for 16 or more bits. The HD100160 also has a Compare ($\overline{C}$) output which allows the circuit to compare two 8-bit words.
The $\overline{C}$ output is low when the two words match, bit for bit.

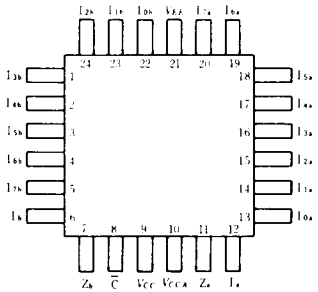
■ PIN ARRANGEMENT

● HD100160



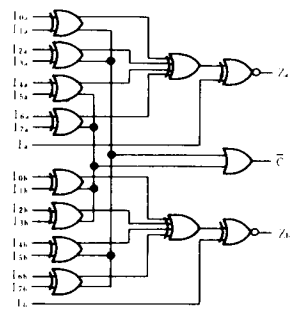
(Top View)

● HD100160F



(Top View)

■ LOGIC DIAGRAM



■ TRUTH TABLE (each half)

Sum of High Input	Output Z
EVEN	H
ODD	L

$\overline{C} = (I_{0a} \oplus I_{1a}) + (I_{2a} + I_{3a}) + (I_{4a} \oplus I_{5a}) + (I_{6a} + I_{7a}) + I_a$
$+ (I_{0b} \oplus I_{1b}) + (I_{2b} + I_{3b}) + (I_{4b} \oplus I_{5b}) + (I_{6b} + I_{7b}) + I_b$

■ DC CHARACTERISTICS ($V_{EE} = -4.2$ to -4.8V, $V_{CC} = V_{CCA} = $GND, $Ta = 0$ to $+85$℃)

Item	Symbol	Test Condition		min	typ	max	Unit
Supply Current	I_{EE}	All input open		57	82	115	mA
Input Current	I_{IH}	$V_{IN} = V_{IH\ max}$	I_b, I_a			340	μA
			All input except I_b and I_a			220	μA

Note) As for other items, refer to the "Common DC Characteristics"

■AC CHARACTERISTICS ($V_{EE} = -2.2$ to -2.8V, $V_{CC} = V_{CCA} = 2.0$V)

● HD100160

Item	Symbol	Test Condition		0℃		25℃			85℃		Unit
				min	max	min	typ	max	min	max	
Propagation Delay Time	t_{PLH}, t_{PHL}	See test circuit and waveform	I_{na}, I_{nb} to Z_a, Z_b	1.20	3.50	1.30	2.50	3.60	1.30	3.60	ns
			I_{na}, I_{nb} to $\overline{C}$	1.10	2.65	1.20	2.00	2.75	1.20	2.75	
			I_d, I_b to Z_a, Z_b	0.50	1.20	0.60	0.90	1.30	0.60	1.30	
Transition Time	t_{TLH}, t_{THL}			0.40	1.40	0.40	0.90	1.40	0.40	1.40	ns

● HD100160F

Item	Symbol	Test Condition		0℃		25℃			85℃ ℃		Unit
				min	max	min	typ	max	min	max	
Propagation Delay Time	t_{PLH}, t_{PHL}	See test circuit and waveform	I_{na}, I_{nb} to Z_a, Z_b	1.20	3.60	1.30	2.30	3.75	1.30	3.75	ns
			I_{na}, I_{nb} to $\overline{C}$	1.10	2.80	1.20	1.90	2.90	1.20	2.90	
			I_d, I_b to Z_a, Z_b	0.50	1.20	0.60	0.80	1.30	0.60	1.30	
Transition Time	t_{TLH}, t_{THL}			0.35	1.30	0.35	0.75	1.30	0.35	1.30	ns

Note: The circuits in a test socket or mounted on a printed circuit board and transverse air flow greater than 2.5m s (500 linear fpm) is maintained.