9348

12-INPUT PARITY CHECKER/GENERATOR

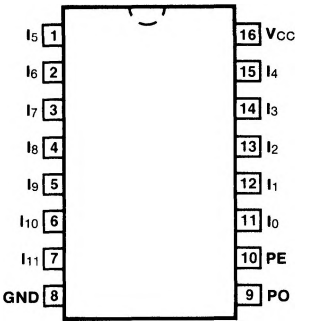
DESCRIPTION — The '48 is a 12-input parity checker/generator generating odd and even parity outputs. It can be used in high speed error detection applications.

- **BOTH ODD AND EVEN PARITY OUTPUTS PROVIDED**
- **GENERATES A PARITY BIT FOR UP TO 12 BITS**
- **CHECKS FOR PARITY ON UP TO 12 BITS**
- **EASILY EXPANDABLE**

ORDERING CODE: See Section 9

PKGS	PIN OUT	COMMERCIAL GRADE	MILITARY GRADE	PKG TYPE
		V_{CC} = +5.0 V ±5%, T_A = 0°C to +70°C	V_{CC} = +5.0 V ±10%, T_A = -55°C to +125°C	
Plastic DIP (P)	A	9348PC		9B
Ceramic DIP (D)	A	9348DC	9348DM	6B
Flatpak (F)	A	9348FC	9348FM	4L

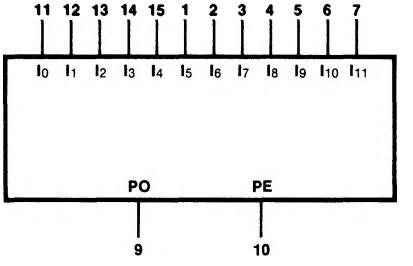
CONNECTION DIAGRAM
PINOUT A



INPUT LOADING/FAN-OUT

PIN NAMES	DESCRIPTION	93XX (U.L.) HIGH/LOW
I_0 — I_{11}	Parity Inputs	2.0/2.0
PO	Odd Parity Output	20/10
PE	Even Parity Output	20/10

LOGIC SYMBOL



V_{CC} = Pin 16
GND = Pin 8

FUNCTIONAL DESCRIPTION — The '48 is a 12-input parity generator. It provides odd and even parity for up to 12 data bits. The Even Parity output (PE) will be HIGH if an even number of logic ones are present on the inputs. The Odd Parity output (PO) will be HIGH if an odd number of logic ones are present on the inputs. The logic equations for the outputs are shown below.

$$PO = \overline{I_0 \oplus I_1 \oplus I_2 \oplus I_3 \oplus I_4 \oplus I_5 \oplus I_6 \oplus I_7 \oplus I_8 \oplus I_9 \oplus I_{10} \oplus I_{11}}$$

$$PE = I_0 \oplus I_1 \oplus I_2 \oplus I_3 \oplus I_4 \oplus I_5 \oplus I_6 \oplus I_7 \oplus I_8 \oplus I_9 \oplus I_{10} \oplus I_{11}$$

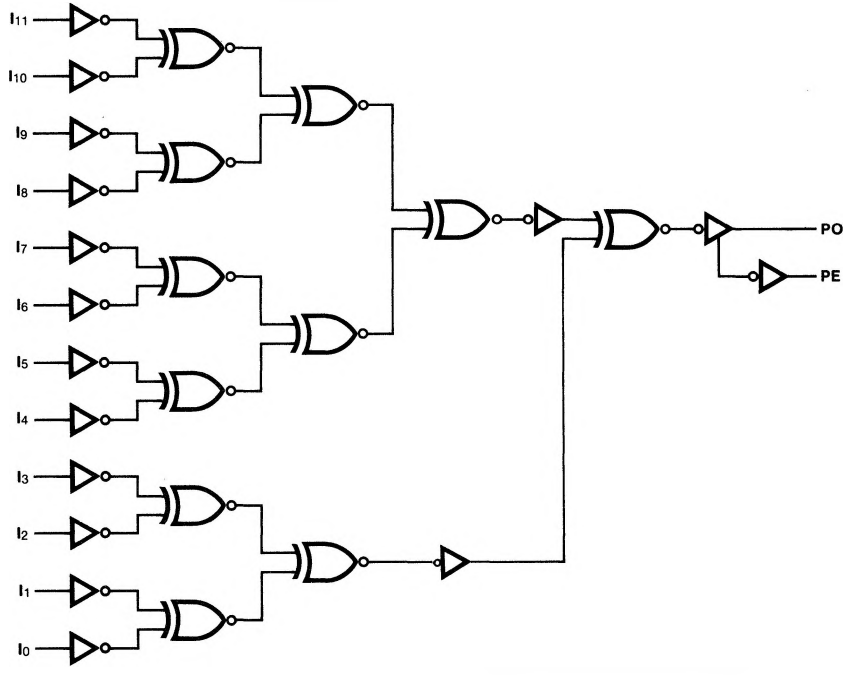
NOTE: Less through delay is encounted from the I_0, I_1, I_2, and I_3 inputs than I_4 thru I_{11} inputs. Therefore, if some signals are slower than others, the slower signals should be applied to these four inputs for maximum speed.

TRUTH TABLE

INPUTS		OUTPUTS	
$I_0 - I_{11}$		PO	PE
All Twelve	Inputs LOW	L	H
Any One	Input HIGH	H	L
Any Two	Inputs HIGH	L	H
Any Three	Inputs HIGH	H	L
Any Four	Inputs HIGH	L	H
Any Five	Inputs HIGH	H	L
Any Six	Inputs HIGH	L	H
Any Seven	Inputs HIGH	H	L
Any Eight	Inputs HIGH	L	H
Any Nine	Inputs HIGH	H	L
Any Ten	Inputs HIGH	L	H
Any Eleven	Inputs HIGH	H	L
Any Twelve	Inputs HIGH	L	H

H = HIGH Voltage Level
L = LOW Voltage Level

LOGIC DIAGRAM



DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

SYMBOL	PARAMETER	93XX		UNITS	CONDITIONS
		Min	Max		
I_{CC}	Power Supply Current		82	mA	V_{CC} = Max

AC CHARACTERISTICS: V_{CC} = +5.0 V, T_A = +25°C (See Section 3 for waveforms and load configuration)

SYMBOL	PARAMETER	93XX C_L = 15 pF R_L = 400 Ω		UNITS	CONDITIONS
		Min	Max		
t_{PLH} t_{PHL}	Propagation Delay I_4 to PO		46 42	ns	I_2, I_3, I_7, I_8 = Gnd; Other Inputs (exc. I_4) HIGH Figs. 3-1, 3-4
t_{PLH} t_{PHL}	Propagation Delay I_4 to PE		51 48	ns	I_2, I_3, I_7, I_8 = Gnd; Other Inputs (exc. I_4) HIGH Figs. 3-1, 3-5
t_{PLH}	Propagation Delay I_3 to PO		27	ns	I_7 = HIGH; Other Inputs (exc. I_3) = Gnd Figs. 3-1, 3-4
t_{PHL}	Propagation Delay I_4 to PO		25	ns	All Inputs (exc. I_4) = Gnd Figs. 3-1, 3-5