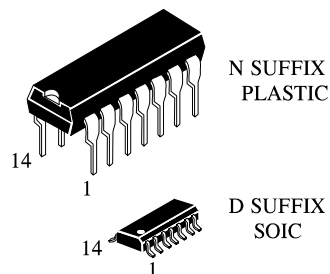
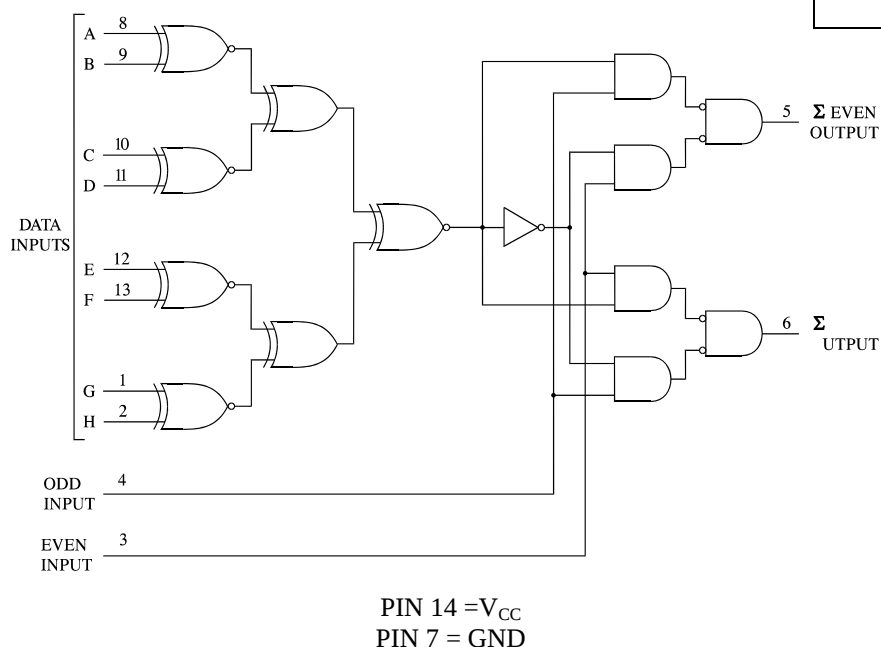


KK74180

9-Bit ODD/EVEN Parity Generators/Checkers

LOGIC DIAGRAM



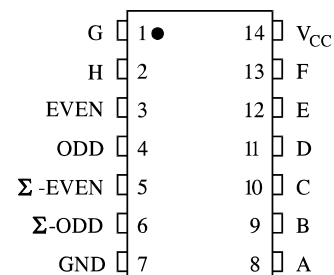
ORDERING INFORMATION

KK74180N Plastic

KK74180D SOIC

$T_A = -10^\circ$ to 70° C for all packages

PIN ASSIGNMENT



FUNCTION TABLE

Inputs			Output	
Σ of H's at A Thru H	EVEN	ODD	Σ EVEN	Σ ODD
EVEN	H	L	H	L
ODD	H	L	L	H
EVEN	L	H	L	H
ODD	L	H	H	L
X	H	H	L	L
X	L	L	H	H

X = don't care

MAXIMUM RATINGS*

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	7.0	V
V_{IN}	Input Voltage	5.5	V
I_{OL}	Low Level Output Current	16	mA
Tstg	Storage Temperature Range	-65 to +150	°C

*Maximum Ratings are those values beyond which damage to the device may occur.
Functional operation should be restricted to the Recommended Operating Conditions.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Min	Max	Unit
V_{CC}	Supply Voltage	4.75	5.25	V
V_{IH}	High Level Input Voltage	2.0		V
V_{IL}	Low Level Input Voltage		0.8	V
I_{OH}	High Level Output Current		-800	μA
I_{OL}	Low Level Output Current		16	mA
T_A	Ambient Temperature Range	-10	+70	°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter		Test Conditions	Guaranteed Limit		Unit
				Min	Max	
V_{IK}	Input Clamp Voltage		$V_{CC} = \min, I_{IN} = -10 \text{ mA}$		-1.5	V
V_{OH}	High Level Output Voltage		$V_{CC} = \min, I_{OH} = \max$	2.4		V
V_{OL}	Low Level Output Voltage		$V_{CC} = \min, I_{OL} = \max$		0.4	V
I_I	Input Current at Maximum Input Voltage		$V_{CC} = \max, V_{IN} = 5.5 \text{ V}$		1	mA
I_{IH}	High Level Input Current	Any data input	$V_{CC} = \max, V_{IN} = 2.4 \text{ V}$		40	μA
		Even or odd input			80	
I_{IL}	Low Level Input Current	Any data input	$V_{CC} = \max, V_{IN} = 0.4 \text{ V}$		-1.6	mA
		Even or odd input			-3.2	
I_{OS}^*	Short-Circuit Output Current		$V_{CC} = \max$	-18	-55	mA
I_{CC}	Supply Current		$V_{CC} = \max$, See Note		56	mA

*Not more than one output should be shorted at a time.

Note: I_{CC} is measured with even and odd inputs at 4.5 V, all other inputs and outputs open.

AC ELECTRICAL CHARACTERISTICS ($T = 25^{\circ}\text{C}$, $V_{CC} = 5.0\text{ V}$, $C_L = 15\text{ pF}$,
 $R_L = 390\ \Omega$, Input $t_r = t_f = 10\text{ ns}$)

Symbol	Parameter	Test Conditions	Min	Max	Unit
t_{PLH}	Propagation Delay Time, Low to High Level Output (from Data to Σ EVEN)	ODD input grounded		60	ns
t_{PHL}	Propagation Delay Time, High to Low Level Output (from Data to Σ EVEN)			68	
t_{PLH}	Propagation Delay Time, Low to High Level Output (from Data to Σ ODD)			48	ns
t_{PHL}	Propagation Delay Time, High to Low Level Output (from Data to Σ ODD)			38	
t_{PLH}	Propagation Delay Time, Low to High Level Output (from Data to Σ EVEN)	EVEN input grounded		48	ns
t_{PHL}	Propagation Delay Time, High to Low Level Output (from Data to Σ EVEN)			38	
t_{PLH}	Propagation Delay Time, Low to High Level Output (from Data to Σ ODD)			60	ns
t_{PHL}	Propagation Delay Time, High to Low Level Output (from Data to Σ ODD)			68	
t_{PLH}	Propagation Delay Time, Low to High Level Output (from EVEN or ODD to Σ EVEN or Σ ODD)			20	ns
t_{PHL}	Propagation Delay Time, High to Low Level Output (from EVEN or ODD to Σ EVEN or Σ ODD)			10	

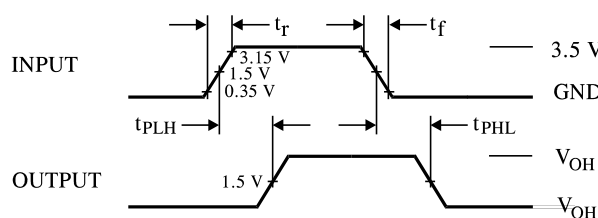


Figure 1. Switching Waveforms

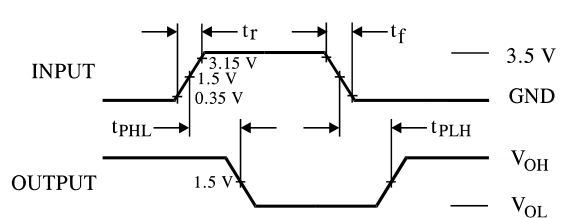
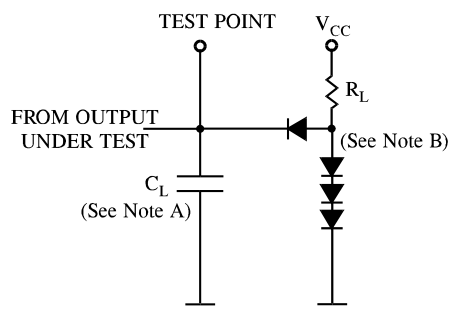


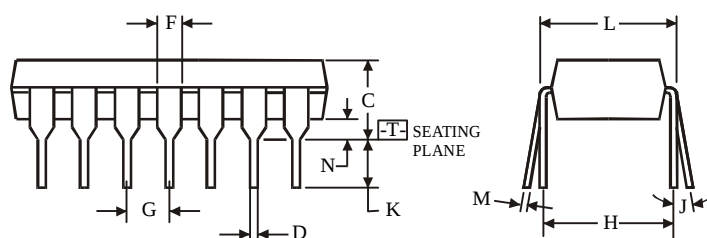
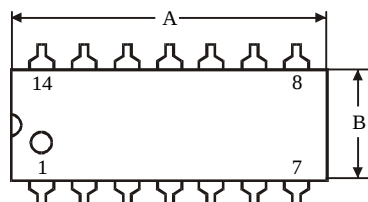
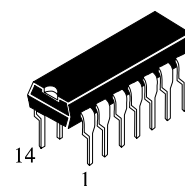
Figure 2. Switching Waveforms



NOTES A. C_L includes probe and jig capacitance.
 B. All diodes are 1N916 or 1N3064.

Figure 3. Test Circuit

N SUFFIX PLASTIC DIP (MS - 001AA)



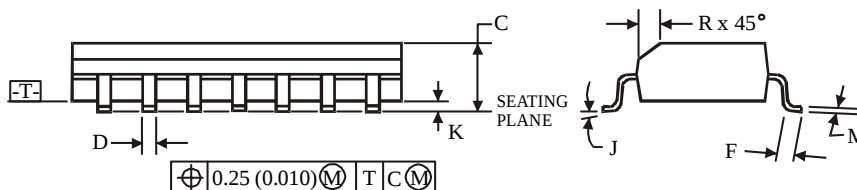
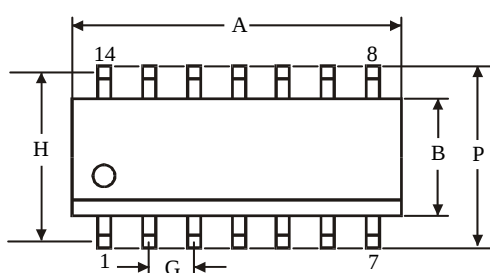
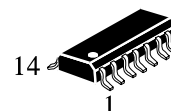
$\oplus 0.25 (0.010) \text{ (M) } T$

NOTES:

- Dimensions "A", "B" do not include mold flash or protrusions.
Maximum mold flash or protrusions 0.25 mm (0.010) per side.

Dimension, mm		
Symbol	MIN	MAX
A	18.67	19.69
B	6.1	7.11
C		5.33
D	0.36	0.56
F	1.14	1.78
G	2.54	
H	7.62	
J	0°	10°
K	2.92	3.81
L	7.62	8.26
M	0.2	0.36
N	0.38	

D SUFFIX SOIC (MS - 012AB)



$\oplus 0.25 (0.010) \text{ (M) } T \text{ (C) (M)}$

NOTES:

- Dimensions A and B do not include mold flash or protrusion.
- Maximum mold flash or protrusion 0.15 mm (0.006) per side
for A; for B - 0.25 mm (0.010) per side.

Dimension, mm		
Symbol	MIN	MAX
A	8.55	8.75
B	3.8	4
C	1.35	1.75
D	0.33	0.51
F	0.4	1.27
G	1.27	
H	5.27	
J	0°	8°
K	0.1	0.25
M	0.19	0.25
P	5.8	6.2
R	0.25	0.5