The MC14017B is a five−stage Johnson decade counter with built−in code converter. High speed operation and spike−free outputs are obtained by use of a Johnson decade counter design. The ten decoded outputs are normally low, and go high only at their appropriate decimal time period. The output changes occur on the positive−going edge of the clock pulse. This part can be used in frequency division applications as well as decade counter or decimal decode display applications.

Features

- Fully Static Operation
- DC Clock Input Circuit Allows Slow Rise Times
- Carry Out Output for Cascading
- Divide−by−N Counting
- Supply Voltage Range = 3.0 Vdc to 18 Vdc
- Capable of Driving Two Low−Power TTL Loads or One Low−Power Schottky TTL Load Over the Rated Temperature Range
- Pin−for−Pin Replacement for CD4017B
- Triple Diode Protection on All Inputs
- NLV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q100 Qualified and PPAP Capable
- This Device is Pb−Free and is RoHS Compliant

MAXIMUM RATINGS (Voltages Referenced to V_{SS})

Symbol	Parameter	Value	Unit
V_{DD}	DC Supply Voltage Range	−0.5 to +18.0	V
V_{in}, V_{out}	Input or Output Voltage Range (DC or Transient)	−0.5 to V_{DD} + 0.5	V
I_{in}, I_{out}	Input or Output Current (DC or Transient) per Pin	±10	mA
P_D	Power Dissipation, per Package (Note 1)	500	mW
T_A	Ambient Temperature Range	−55 to +125	°C
T			

August, 2014 − Rev. 9
Publication Order Number:
MC14017B/D

FUNCTIONAL TRUTH TABLE
(Positive Logic)

Clock	$\overline{\text{Clock}}$ $\overline{\text{Enable}}$	Reset	Decode Output=n
0	X	0	n
X	1	0	n
X	X	1	Q0
	0	0	n+1
	X	0	n
X		0	n
1		0	n+1

BLOCK DIAGRAM

ELECTRICAL CHARACTERISTICS (Voltages Referenced to V_{SS})

Characteristic	Symbol	V_{DD} Vdc	−55°C Min	−55°C Max	25°C Min	25°C Typ (Note 2)	25°C Max	125°C Min	125°C Max	Unit
Output Voltage “0” Level	V_{OL}	5.0	−	0.05	−	0	0.05			
V_{in} = V_{DD} or 0		10	−	0.05	−	0	0.05			
		15	−	0.05	−	0	0.05			
“1” Level										
V_{in} = 0 or V_{DD}										

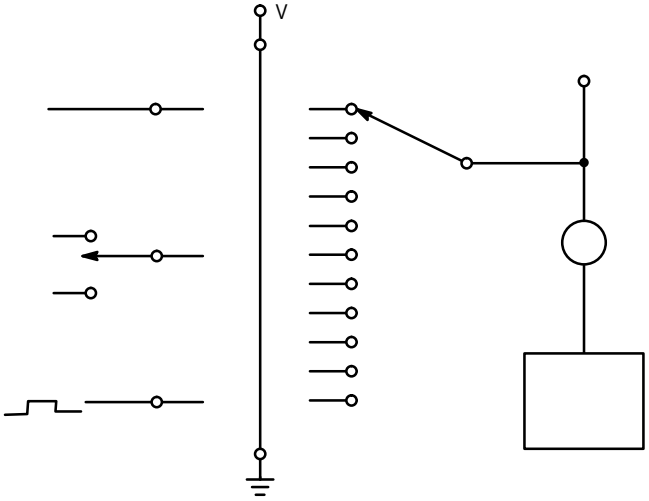


Figure 1. Typical Output Source and Output Sink Characteristics Test Circuit

ORDERING INFORMATION

Device	Package	Shipping†
MC14017BDG	SOIC−16 (Pb−Free)	48 Units / Rail
NLV14017BDG*	SOIC−16 (Pb−Free)	48 Units / Rail
MC14017BDR2G	SOIC−16 (Pb−Free)	2500 Units / Tape & Reel
NLV14017BDR2G*	SOIC−16 (Pb−Free)	2500 Units / Tape & Reel

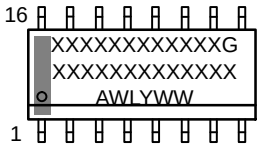
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

SOIC−16 9.90x3.90x1.50 1.27P
CASE 751B
ISSUE L

SOIC−16 9.90x3.90x1.50 1.27P
CASE 751B
ISSUE L

DATE 29 MAY 2024

GENERIC MARKING DIAGRAM*



XXXXX = Specific Device Code
A = Assembly Location
WL = Wafer Lot
Y = Year
WW = Work Week
G = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

S 1:
1. C C
2. BAS
3.
4. C C
5.
6. BAS
7. C C
8. C C
9. BAS
10.
11. C C
12.
13. BAS
14. C C
15.
16. C C

S 2:
1. CA
2. A
3. C C
4. CA
5. CA
6. C C
7. A
8. CA
9. CA
10. A
11. C C
12. CA
13. CA
14. C C
15. A
16. CA

S 3:
1. C C , #1
2. BAS , #1
3. , #1
4. C C , #1
5. C C , #2
6. BAS , #2
7. , #2
8. C C , #2
9. C C , #3
10. BAS , #3
11. , #3
12. C C , #3
13. C C , #4
14. BAS , #4
15. , #4
16. C C , #4

S 4:
1. C C , #1
2. C C , #1
3. C C , #2
4. C C , #2
5. C C , #3
6. C C , #3
7. C C , #4
8. C C , #4
9. BAS , #4
10. , #4
11. BAS , #3
12. , #3
13. BAS , #2
14. , #2
15. BAS , #1
16. , #1

S 5:
1. A , #1
2. A , #1
3. A , #2
4. A , #2
5. A , #3
6. A , #3
7. A , #4
8. A , #4
9. A , #4
10. S C , #4
11. A , #3
12. S C , #3
13. A , #2
14. S C , #2
15. A , #1
16. S C , #1

S 6:
1. CA
2. CA
3. CA
4. CA
5. CA
6. CA
7. CA
8. CA
9. A
10. A
11. A
12. A
13. A
14. A
15. A
16. A

S 7:
1. S C -C
2. C A ( )
3. C A ( )
4. A -C
5. C A ( )
6. C A ( )
7. C A ( )
8. S C -C
9. S C -C
10. C A ( )
11. C A ( )
12. C A ( )
13. A -C
14. C A ( )
15. C A ( )
16. S C -C

DOCUMENT NUMBER:	**98ASB42566B**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped “CONTROLLED COPY” in red.	
DESCRIPTION:	**SOIC−16 9.90X3.90X1.50 1.27P**		**PAGE 2 OF 2**