

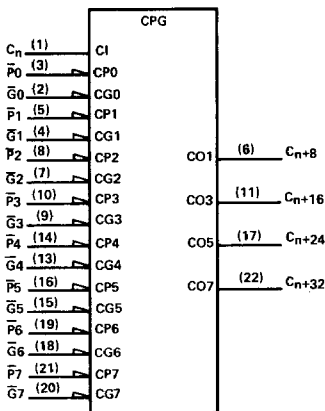
- Directly Compatible with the New 'HC181 and 'HC881 ALUs
- Capable of Anticipating the Carry Across a Group of Eight 4-Bit Binary Adders
- Cascadable to Perform Look-Ahead Across n-Bit Adders
- Package Options Include Both Plastic and Ceramic Chip Carriers in Addition to Plastic and Ceramic DIPs
- Dependable Texas Instruments Quality and Reliability

description

The 'HC882 is a high-speed look-ahead carry generator capable of anticipating the carry across a group of eight 4-bit adders permitting the designer to implement look-ahead for a 32-bit ALU with a single package or, by cascading 'HC882's, full look-ahead is possible across n-bit adders.

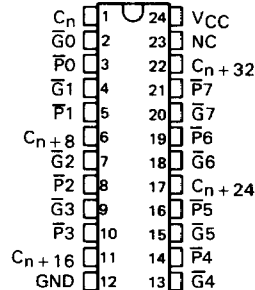
The SN54HC882 is characterized for operation over the full military temperature range of -55°C to 125°C. The SN74HC882 is characterized for operation from -40°C to 85°C.

logic symbol

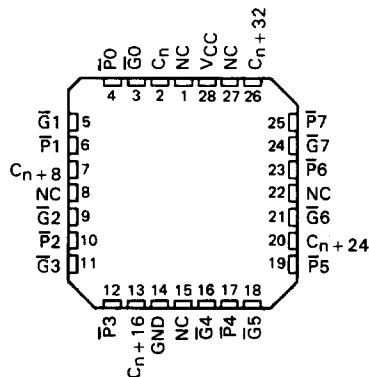


Pin numbers shown are for JT and NT packages.

**SN54HC882 . . . JT PACKAGE
SN74HC882 . . . JT OR NT PACKAGE
(TOP VIEW)**



**SN54HC882 . . . FH OR FK PACKAGE
SN74HC882 . . . FH OR FK PACKAGE
(TOP VIEW)**



NC—No internal connection

LOGIC EQUATIONS

$$C_{n+8} = G1 + P1G0 + P1P0C_n$$

$$C_{n+16} = G3 + P3G2 + P3P2G1 + P3P2P1G0 + P3P2P1P0C_n$$

$$C_{n+24} = G5 + P5G4 + P5P4G3 + P5P4P3G2 + P5P4P3P2G1 + P5P4P3P2P1G0 + P5P4P3P2P1P0C_n$$

$$C_{n+32} = G7 + P7G6 + P7P6G5 + P7P6P5G4 + P7P6P5P4G3 + P7P6P5P4P3G2 + P7P6P5P4P3P2G1 + P7P6P5P4P3P2P1G0 + P7P6P5P4P3P2P1P0C_n$$

PRODUCT PREVIEW
This document contains information on a product under development. Texas Instruments reserves the right to change or discontinue this product without notice.

**TYPES SN54HC882, SN74HC882
32-BIT LOOK-AHEAD CARRY GENERATORS**

PRODUCT PREVIEWS



**FUNCTION TABLE
FOR C_{n+32} OUTPUT**

INPUTS															OUTPUT		
$\bar{G}7$	$\bar{G}6$	$\bar{G}5$	$\bar{G}4$	$\bar{G}3$	$\bar{G}2$	$\bar{G}1$	$\bar{G}0$	$\bar{P}7$	$\bar{P}6$	$\bar{P}5$	$\bar{P}4$	$\bar{P}3$	$\bar{P}2$	$\bar{P}1$	$\bar{P}0$	C_n	C_{n+32}
L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	H
X	L	X	X	X	X	X	X	L	X	X	X	X	X	X	X	X	H
X	X	L	X	X	X	X	X	L	L	X	X	X	X	X	X	X	H
X	X	X	L	X	X	X	X	L	L	L	X	X	X	X	X	X	H
X	X	X	X	L	X	X	X	L	L	L	L	X	X	X	X	X	H
X	X	X	X	X	L	X	X	L	L	L	L	X	X	X	X	X	H
X	X	X	X	X	X	L	X	L	L	L	L	L	X	X	X	X	H
X	X	X	X	X	X	X	L	L	L	L	L	L	L	X	X	X	H
X	X	X	X	X	X	X	X	L	L	L	L	L	L	L	X	X	H
X	X	X	X	X	X	X	X	X	L	L	L	L	L	L	L	H	H
All other combinations																	
L																	

**FUNCTION TABLE
FOR C_{n+24} OUTPUT**

INPUTS														OUTPUT
$\bar{G}5$	$\bar{G}4$	$\bar{G}3$	$\bar{G}2$	$\bar{G}1$	$\bar{G}0$	$\bar{P}5$	$\bar{P}4$	$\bar{P}3$	$\bar{P}2$	$\bar{P}1$	$\bar{P}0$	C_n	C_{n+24}	
L	X	X	X	X	X	X	X	X	X	X	X	X	H	
X	L	X	X	X	X	L	X	X	X	X	X	X	H	
X	X	L	X	X	X	L	L	X	X	X	X	X	H	
X	X	X	L	X	X	L	L	L	X	X	X	X	H	
X	X	X	X	L	X	L	L	L	L	X	X	X	H	
X	X	X	X	X	L	L	L	L	L	L	X	X	H	
X	X	X	X	X	X	L	L	L	L	L	L	H	H	
All other combinations														
L														

**FUNCTION TABLE
FOR C_{n+16} OUTPUT**

INPUTS										OUTPUT
$\bar{G}3$	$\bar{G}2$	$\bar{G}1$	$\bar{G}0$	$\bar{P}3$	$\bar{P}2$	$\bar{P}1$	$\bar{P}0$	C_n	C_{n+16}	
L	X	X	X	X	X	X	X	X	H	
X	L	X	X	L	X	X	X	X	H	
X	X	L	X	L	L	X	X	X	H	
X	X	X	L	L	L	L	X	X	H	
X	X	X	X	L	L	L	L	H	H	
All other combinations										
L										

**FUNCTION TABLE
FOR C_{n+8} OUTPUT**

INPUTS					OUTPUT
$\bar{G}1$	$\bar{G}0$	$\bar{P}1$	$\bar{P}0$	C_n	C_{n+8}
L	X	X	X	X	H
X	L	L	X	X	H
X	X	L	L	H	H
All other combinations					
L					

Any inputs not shown in a given table are irrelevant with respect to that output.

maximum ratings, recommended operating conditions, and electrical characteristics

See Table IV, page 2-10.