

TYPES SN54LS381A, SN54LS382, SN54S381, SN74LS381A, SN74LS382, SN74S381 ARITHMETIC LOGIC UNITS/FUNCTIONS GENERATORS

function table

Certain differences exist in the \bar{G} , \bar{P} ('LS381A, 'S381) and OVR, $C_n + 4$ ('LS382) function table compared with similar parts from other vendors. No differences exist in the arithmetic modes (B minus A, A minus B, and A plus B), where these outputs perform valuable cascade functions.

There are slight differences in the other modes (CLEAR, A + B, $A \oplus B$, AB, and PRESET), where these outputs are strictly "don't care."

This function table is a condensed version and assumes for A_n that A0, A1, A2, and A3 inputs all agree and for B_n that B0, B1, B2, and B3 inputs all agree. This table is intended to point out the response of these \bar{G} , \bar{P} ('LS381A, 'S381) and OVR, $C_n + 4$ ('LS382) outputs in all modes of operation to facilitate incoming inspection.

FUNCTION TABLE

ARITHMETIC/LOGIC OPERATION	INPUTS						OUTPUTS				('LS381A, 'S381)		('LS382)	
	S2	S1	S0	C_n	A_n	B_n	F3	F2	F1	F0	\bar{G}	\bar{P}	OVR	$C_n + 4$
CLEAR	L	L	L	X	X	X	L	L	L	L	H	H	H	L
B MINUS A	L	L	H	L	L	L	H	H	H	H	H	L	L	L
				L	L	H	H	H	H	L	L	H	L	H
				L	H	L	L	L	L	L	H	H	L	L
				L	H	H	H	H	H	H	H	L	L	L
				H	L	L	L	L	L	L	H	L	L	H
				H	L	H	H	H	H	H	L	H	L	H
				H	H	L	L	L	L	H	H	H	L	L
				H	H	H	L	L	L	L	H	L	L	H
A MINUS B	L	H	L	L	L	L	H	H	H	H	H	L	L	L
				L	L	H	L	L	L	L	H	H	L	L
				L	H	L	H	H	H	L	L	H	L	H
				L	H	H	H	H	H	H	H	L	L	L
				H	L	L	L	L	L	L	H	L	L	H
				H	L	H	L	L	L	H	H	H	L	L
				H	H	L	H	H	H	H	L	H	L	H
				H	H	H	L	L	L	L	H	L	L	H
A PLUS B	L	H	H	L	L	L	L	L	L	L	H	H	L	L
				L	L	H	H	H	H	H	H	L	L	L
				L	H	L	H	H	H	H	H	L	L	L
				L	H	H	H	H	H	L	L	H	L	H
				H	L	L	L	L	L	H	H	H	L	L
				H	L	H	L	L	L	L	H	L	L	H
				H	H	L	L	L	L	L	H	L	L	H
				H	H	H	H	H	H	H	L	H	L	H
$A \oplus B$	H	L	L	X	L	L	L	L	L	L	H	H	L	L
				L	L	H	H	H	H	H	H	L	L	L
				H	L	H	H	H	H	H	H	L	H	H
				L	H	L	H	H	H	H	H	L	L	L
				H	H	L	H	H	H	H	H	L	H	H
				X	H	H	L	L	L	L	H	H	L	L
				L	L	L	L	L	L	L	H	H	L	L
				L	L	H	H	H	H	H	H	L	L	L
A + B	H	L	H	X	L	L	L	L	L	L	H	H	L	L
				L	L	H	H	H	H	H	H	L	L	L
				H	L	H	H	H	H	H	H	L	H	H
				L	H	L	H	H	H	H	H	L	L	L
				H	H	L	H	H	H	H	H	L	H	H
				L	H	H	H	H	H	H	H	L	L	L
				H	H	H	H	H	H	H	H	L	H	H
				H	H	H	H	H	H	H	H	L	H	H
AB	H	H	L	X	L	L	L	L	L	L	H	H	L	L
				X	L	H	L	L	L	L	H	H	L	L
				L	H	H	H	H	H	H	H	L	L	L
				H	H	H	H	H	H	H	H	L	H	H
PRESET	H	H	H	I	X	X	H	H	H	H	H	L	L	L
				H	X	X	H	H	H	H	H	L	H	H

TYPES SN54S381, SN74S381 ARITHMETIC LOGIC UNITS/FUNCTION GENERATORS

logic diagram and schematics of inputs and outputs

