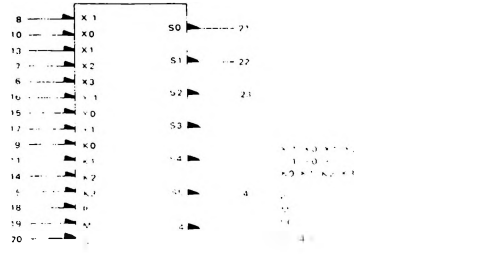

TRUTH TABLE

V_{CC} = Pin 24
V_{EE} = Pin 12

P_D = 760 mW typ/pkg (No Load)
t_{pd} = 50 ns typ (8 x 8 bit product)

4 x 2 Multiplier

The MC10183 is a 4 x 2 bit multiplier that can multiply 2's complement numbers producing a 2's complement product without correction. The device can be used as a 4 x 2 bit multiplier cell to build larger iterative arrays.

The part performs the function defined as $F = XY + K$, where K is an input fiels used to add partial products in an array or to add a constant to the least significant part of the array product. The algorithm used is a modified Booth's algorithm or multiplier coding technique.

The device consists of a shift network and an adder/subtractor in which 0, 1 times X, or 2 times X is either added or subtracted to input constant K. The Y inputs control multiplication as shown in the Truth Table. The most significant digit in a word carries a negative weight allowing 2's complement numbers of various lenghts to be multiplied. An M-bit by N-bit multiplication produces an M + N bit product.

The $\overline{P}$ polarity input allows multiplication in either positive logic ($\overline{P}$ = high) or negative logic ($\overline{P}$ = low) representation. Also, mode control M inverts $\overline{C}_n$ when high and passes $\overline{C}_n$ directly when left low.