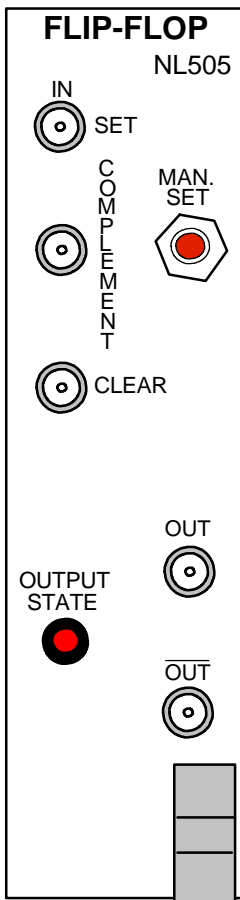


NL505 - Flip-Flop

Introduction

The **NL505 FLIP-FLOP** can be operated either as a "set-reset" flip-flop or as a "toggled" complementing flip-flop. This makes it useful in setting up conditional and "single-shot" stimuli, and testing logic outputs for the presence of pulses, logic levels etc. The **NL505** is useful in 'stretching', or 'latching' narrow outputs, from units such as the **NL201 Spike Trigger**, so that they can be 'read' by a PC.

The module has three inputs, Set, Complement and Clear, and two outputs (Q and Q') all of which drive or are driven from TTL logic (i.e. 0V and +5V).

A LED indicator is illuminated when the Q output is at a high level.

The table below shows the relationship between inputs and outputs.

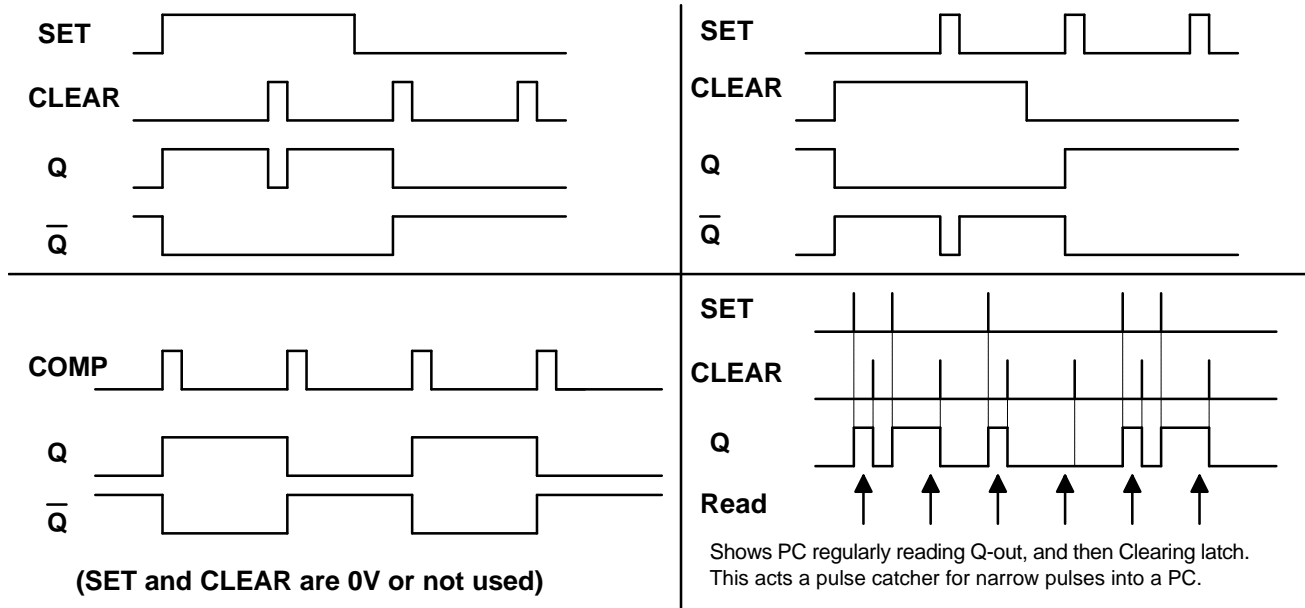
Complement	Set	Clear	Q	Q'	Function
0	0	0	Q ₀	Q ₀ '	Static Condition
X	0	1	0	1	Clear output
X	1	0	1	0	Set output
X	1	1	0 *	0 *	* see below
^	0	0	Q ₀ '	Q ₀	Complement

Where -
 1 is a logic high (+5V)
 0 is a logic low (0V) or unconnected inputs
 X is irrelevant
 Q₀ is the previous output state
 ^ is a positive going pulse

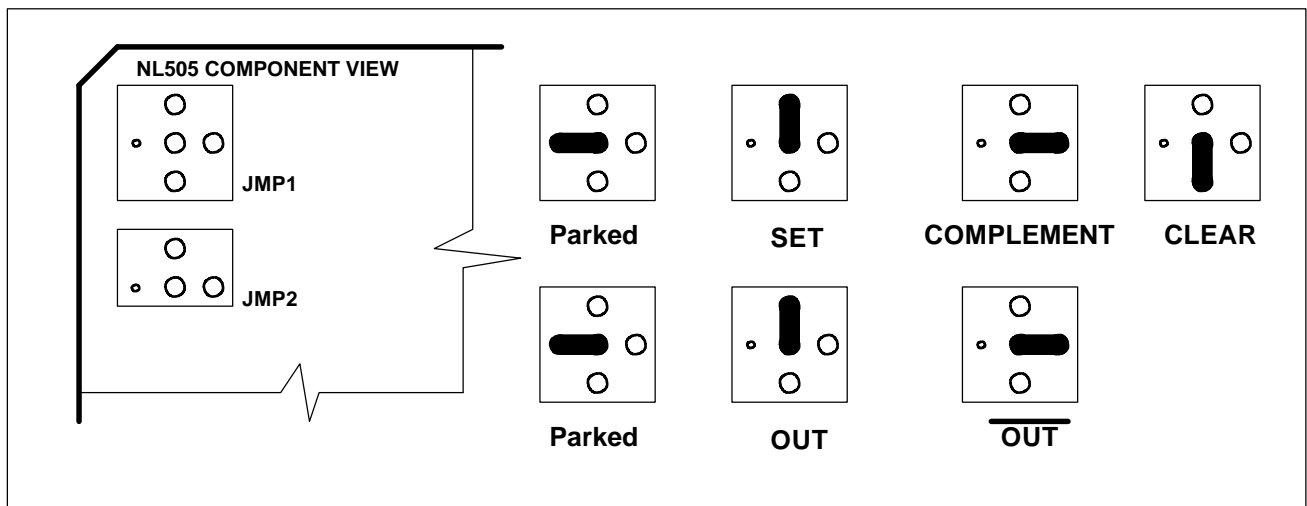
* This is a non-stable state, it will only remain whilst Set and Clear are both held high.

N.B. The Set and Clear inputs override the Complement input, that is why the output is only affected by the complement input when both of these are low.

Typical waveforms



On-board Jumpers



The on-board jumpers allow a single connections between adjacent modules without the need of external cables. The position of these jumpers are changed by gently pulling them away from the PCB, then rotating them 90°, 180° or 270° before replacing them in two of the small gold board sockets.

INPUT - the upper jumper allows the Output signal from the module to the immediate left to be connected to either of the three Input sockets, or it may be "parked" for "no-connection".

OUTPUT - the lower jumper selects which of the two Output signals is passed to the Input of the module to the immediate right, or it may be "parked" for "no-connection".

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