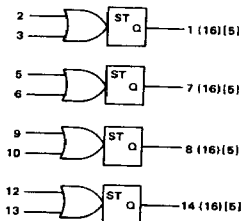


QUAD SCHMITT
TRIGGER

PLASTIC MRTL MC700P/800P series

MC9709P • MC9809P

The MC9709P/9809P device consists of four Schmitt Triggers in a single 14-pin dual in-line plastic package. It provides a square-wave output from a slow-rise-time input with 650 mV internal hysteresis.



$$t_r = t_f = 20 \text{ ns typ}$$

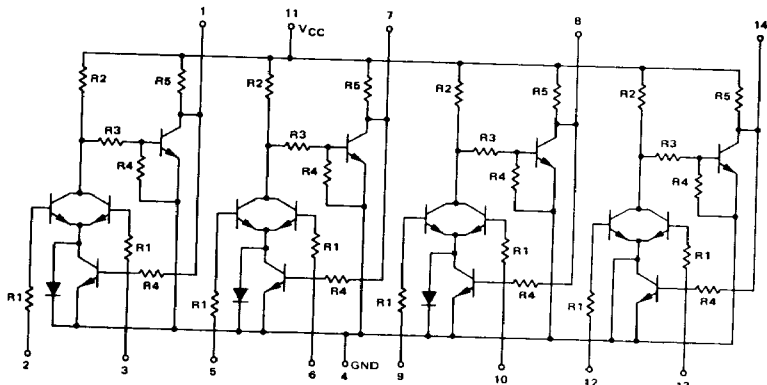
$$\text{Avg. } t_{pd} = 30 \text{ ns typ, Avg. } = \frac{t_{on} + t_{off}}{2}$$

$$f = 18 \text{ MHz typ}$$

$$P_D = 95 \text{ mW typ}$$

Upper Trigger Voltage = 1.40 V typ
Lower Trigger Voltage = 0.75 V typ

Number in Parenthesis Indicates mW MRTL Loading Factor.
Number in Brackets Indicates MRTL Loading Factor.



TYPICAL RESISTANCE VALUES

R1 = 450 Ω R4 = 1.5 k
R2 = 2.0 k R5 = 640 Ω
R3 = 500 Ω

MC9709P, MC9809P (continued)

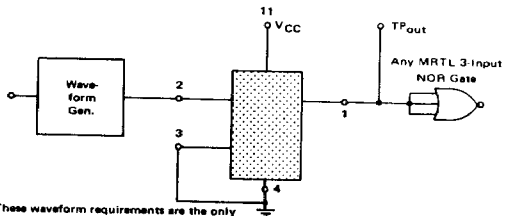
ELECTRICAL CHARACTERISTICS
 Test procedures are shown for one Schmitt Trigger only. The other Schmitt triggers are tested in the same manner.

| Characteristic | Symbol | Pin Under Test | MC9709P Test Limits | | | | | | | | | | | | MC9809P Test Limits | | | | | | TEST VOLTAGE VALUES | | | | | | | | | |
|---|------------------------------------|----------------|---------------------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|---------------------|-----|-------|-----|-------|-----|---------------------|-----|-----------------|------------------|------------------|-----------------|-------|-------|-------|------|
| | | | 0°C | | +25°C | | +75°C | | +15°C | | +25°C | | +55°C | | 0°C | | +25°C | | +15°C | | +25°C | | +55°C | | | | | | | |
| | | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | V _{on} | V _{ACT} | V _{off} | V _{CC} | | | | |
| Output Current | I _{AS} | 1 | 3.0 | - | 3.0 | - | 2.85 | - | 2.65 | - | 2.65 | - | 2.65 | - | 2.50 | - | 2.50 | - | 2.65 | - | 2.65 | - | 2.50 | - | 2.50 | - | 1.80 | 1.80 | 0.570 | 3.60 |
| | | 1 | 3.0 | - | 3.0 | - | 2.85 | - | 2.65 | - | 2.65 | - | 2.65 | - | 2.50 | - | 2.50 | - | 2.65 | - | 2.65 | - | 2.50 | - | 2.50 | - | 0.880 | 0.880 | 0.500 | 3.60 |
| Output Voltage | V _{out} | 1 | - | 500 | - | 400 | - | 400 | - | 400 | - | 400 | - | 300 | - | 320 | - | 320 | - | 400 | - | 300 | - | 320 | - | 1.80 | 1.80 | 0.475 | 3.60 | |
| Power Supply Drain Current (Total Device) | I _{PD} | 11 | - | - | - | 32 | - | - | - | - | - | - | - | 32 | - | - | - | - | - | - | - | - | - | - | - | 1.80 | 1.80 | 0.430 | 3.60 | |
| Output Pulse Rise and Fall Times | t ₁₊ t ₁₋ | 1 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 1 | 2 | - | 11 | 4 |
| | | 1 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 1 | 2 | - | 11 | 4 |
| | | 1 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 1 | 2 | - | 11 | 4 |
| | | 1 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 1 | 2 | - | 11 | 4 |

Ground unused input pins. Other pins not listed are left open.

MC9709P, MC9809P (continued)

SWITCHING TIMES TEST CIRCUIT AND WAVEFORMS



These waveform requirements are the only restrictions for test.

$f \geq 60$ Hz

$PA^* = 2.0$ V *Do not exceed ± 4.0 volts.

