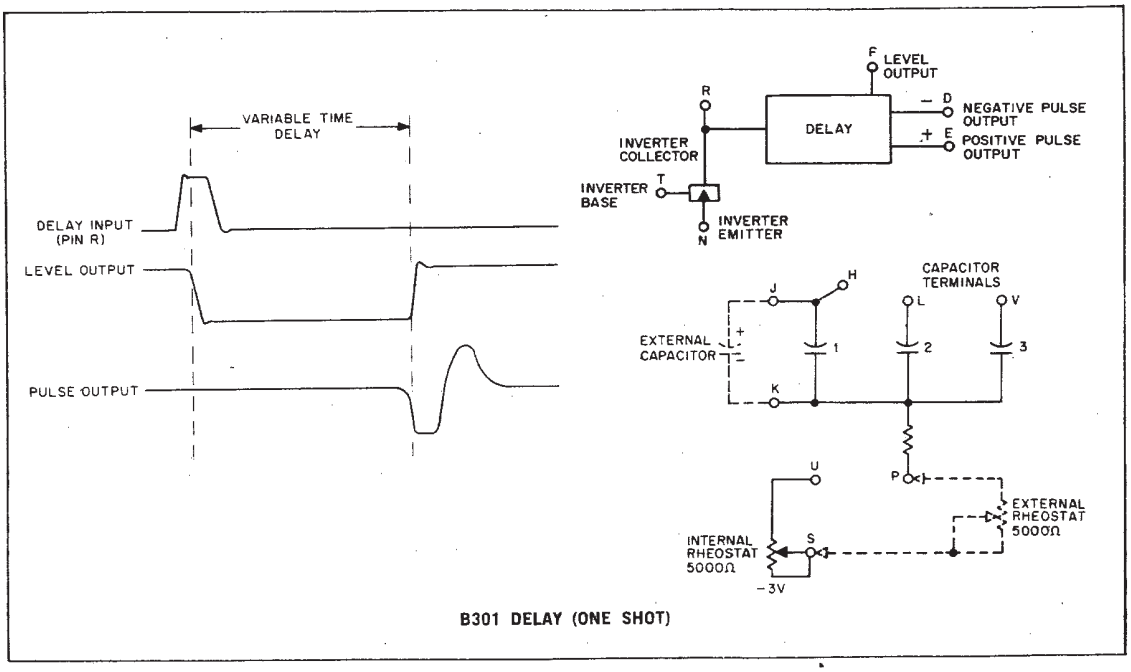
# DELAY (ONE SHOT)
## TYPE B301

**B**
**SERIES**




B301 DELAY (ONE SHOT)

A delay (one shot) is a monostable multivibrator. When the input terminal is grounded, either through the inverter or externally, the level output switches from its normal ground level to —3 v for a predetermined, but adjustable, period of time; then it switches back to ground. Simultaneously with the final transition, a standard 40-nsec pulse is generated at the pulse output.

The B301 contains three capacitors for delay range selection, and a screwdriver-adjustable rheostat for fine control. Typical level output duration ranges are 60 to 700 nsec, 0.5 to 10 μsec, and 7 to 150 μsec using pins J, L, and V respectively. To increase the range further, connect an external capacitor between pins J and K. When pins U and P are jumpered together, fine adjustments are made with the internal control. For external control, a rheostat of about 5000 ohms can be connected between pins S and P.

The circuit recovery time using a given timing capacitor is approximately 10% of the maximum delay available with that capacitor. This limits the maximum input frequency to about 6.5 mc.

A 20% change in power supply voltage will change the delay typically 1%. Delay jitter (due to power supply ripple) is less than 0.3%.

**EXTERNAL CONTROL:** The use of timing resistances larger than 5000 ohms is not recommended. A 5000-ohm rheostat will give approximately 20:1 variation with any but the smallest timing capacitors. In choosing external timing capacitors, allow about 1 nf for every 3 μsec of delay desired at 5000 ohms. Noise on remote control wires tends to synchronize the end of the delay period (or it could cause false triggering in extreme cases); consequently, the control wires should be kept short. Even for 1-ft control wires, a grounded shield may be advisable if smooth control and freedom from jitter are essential.

**INPUT: Pin R** — The delay begins when this point is brought to ground by a pulsed inverter. Either the internal inverter or external inverters may be used. This input is equivalent to a 10-ma clamped load.

**Pins T and N** — These are the base and emitter terminals of a standard inverter. See description of B104.

**OUTPUT: Level** — When the input is pulsed, a negative standard level occurs for the duration of the delay interval. The output supplies 12 ma at ground in addition to the 20-ma internal clamped load. The clamped load supplies 14 ma at −3 v. Dynamic load at the output is 8 pf. **Pulse** — At the end of the delay interval, a DEC standard 40-nsec pulse occurs. The negative output will be active if the positive output terminal is grounded, and vice versa. This signal can drive up to eight inverter bases and an appropriate terminating resistor.

**POWER:** +10 v(A)/2 ma; −15 v(B)/110 ma.

B301 — $73.00