

**MSL915**

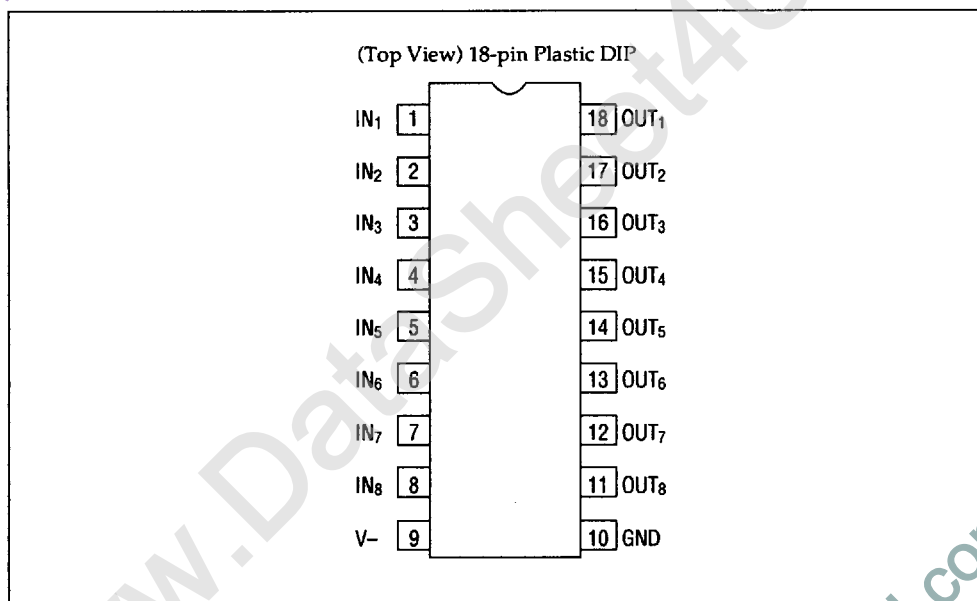
OKI SEMICONDUCTOR GROUP

**8-BIT PARALLEL-IN PARALLEL-OUT****GENERAL DESCRIPTION**

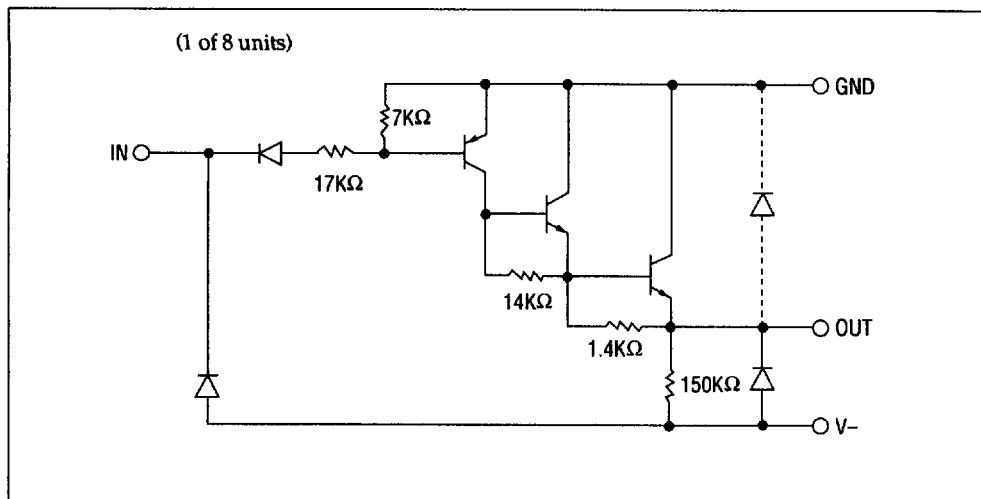
The MSL915 is a high voltage vacuum fluorescent display tube driver, which uses negative voltage and contains eight circuits. Each output contains a pull-down resistor, which allows the driver to directly drive the vacuum fluorescent display tube.

Input may be driven directly by the TTL or CMOS.

- 18-pin Plastic DIP (DIP 18-P-300)

**PIN CONFIGURATION**

## CIRCUIT CONFIGURATION



## ELECTRICAL CHARACTERISTICS

## • Absolute Maximum Ratings

| Parameter           | Symbol | Condition                    | Limits             | Unit |
|---------------------|--------|------------------------------|--------------------|------|
| Supply voltage      | V-     | Ta=25°C                      | GND +0.3 ~ GND -65 | V    |
| Input voltage       | Vi     | Ta=25°C                      | GND +0.5 ~ GND -10 | V    |
| Output voltage      | Vo     | Ta=25°C                      | GND +0.3 ~ V- -0.5 | V    |
| Output current      | Io     | Ta=25°C, only one circuit ON | +0.9 ~ -45         | mA   |
| Storage temperature | Tstg   | -                            | -55 ~ +150         | °C   |

## • Recommended Operating Conditions

| Parameter             | Symbol | Condition                             | Limits            | Unit |
|-----------------------|--------|---------------------------------------|-------------------|------|
| Supply voltage        | V-     | -                                     | GND -20 ~ GND -60 | V    |
| Input voltage         | Vi     | -                                     | GND ~ GND -7      | V    |
| Output current        | Io     | Only one circuit ON*                  | +0.8 ~ -40        | mA   |
|                       |        | Per circuit when all circuits are ON* | +0.8 ~ -5         | mA   |
|                       |        | Total output current*                 | +0.8 x 8 ~ -40    | mA   |
| Operating temperature | Top    | -                                     | -30 ~ +75         | °C   |

\* Duty: 50% max.

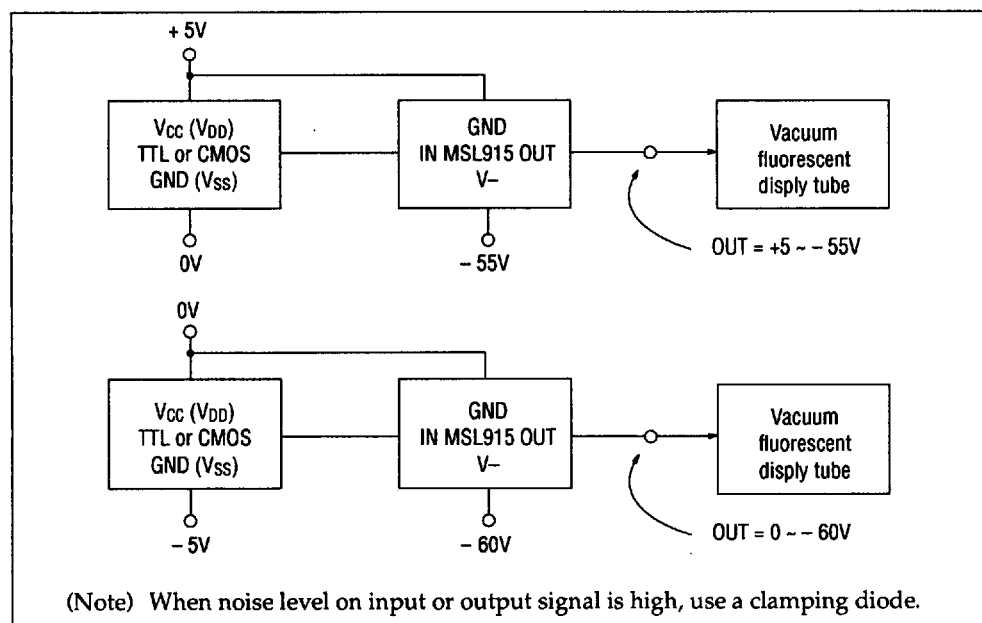
## • DC Characteristics

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(Ta = -30 ~ +75°C, TYP: Ta = 25°C)

| Parameter           | Symbol              | Condition |                    |                      | Specification |       |      | Unit |
|---------------------|---------------------|-----------|--------------------|----------------------|---------------|-------|------|------|
|                     |                     | V - (V)   | V <sub>I</sub> (V) | I <sub>O</sub> (mA)  | MIN           | TYP   | MAX  |      |
| High input voltage  | V <sub>IH</sub>     | -60       | -                  | -                    | -             | -     | -1.5 | V    |
| Low input voltage   | V <sub>IL</sub>     | -60       | -                  | -                    | -4            | -     | -    | V    |
| High input current  | I <sub>IH</sub>     | -60       | -1.5               | -                    | -             | -70   | -280 | μA   |
| Low input current   | I <sub>IL1</sub>    | -60       | -4                 | -                    | -             | -0.23 | -1.2 | mA   |
|                     | I <sub>IL2</sub>    | -60       | -7                 | -                    | -             | -0.58 | -2.6 | mA   |
| High output voltage | V <sub>OH</sub>     | -60       | -4                 | -40                  | -             | -1.5  | -3   | V    |
| Low output voltage  | V <sub>OL</sub>     | -60       | -1.5               | 0                    | -55           | -59   | -    | V    |
| Supply current      | I <sub>CC OFF</sub> | -60       | ALL INPUTS<br>-1.5 | 0                    | -             | 0.7   | 1.3  | mA   |
|                     | I <sub>CC ON</sub>  | -60       | ALL INPUTS<br>-4   | 0                    | -             | 6     | 12   | mA   |
| Pull-down resistor  | R <sub>PD</sub>     | -60       | ALL INPUTS<br>0    | V <sub>O</sub> = -3V | 60            | 150   | 270  | kΩ   |

## APPLICATION NOTE



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