

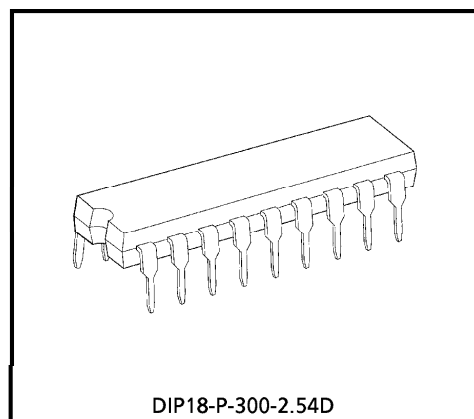
# TD62380P

## 8CH LOW SATURATION DARLINGTON SINK DRIVER

The TD62380P is comprised of eight NPN low saturation drivers.

This device is specifically designed for multiplexed digit driving of eight digit common-cathode LED and also can be employed as a sink driver for multiplexed LED displays using with the TD62785P, TD62785F at standard supply voltage, 5V.

Applications include relay, hammer, lamp and LED display drivers.

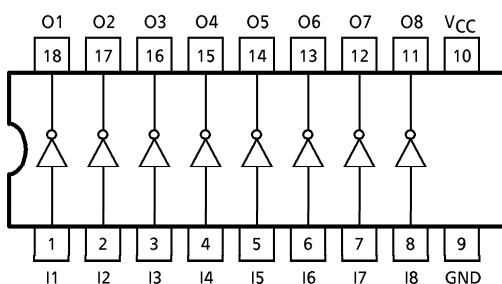


Weight : 1.47g (Typ.)

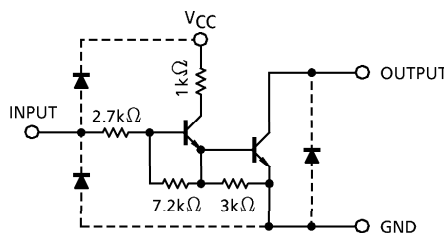
### FEATURES

- Low saturation output  $V_{CE(sat)} = 0.5V$  (Max.) @  $I_{OUT} = 120mA$
- Output rating 15V (Min.) / 120mA (Max.)
- Input compatible with TTL and 5V CMOS
- Low level active inputs
- Standard supply voltage
- Package type-P : DIP-18 pin

### PIN CONNECTION (TOP VIEW)



### SCHEMATICS (EACH DRIVER)



(Note) The input and output parasitic diodes cannot be used as clamp diodes.

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## MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC            | SYMBOL                | RATING  | UNIT    |
|---------------------------|-----------------------|---------|---------|
| Supply Voltage            | V <sub>CC</sub>       | 7       | V       |
| Output Sustaining Voltage | V <sub>CE(SUS)</sub>  | 15      | V       |
| Output Current            | I <sub>OUT</sub>      | 120     | mA / ch |
| Input Voltage             | V <sub>IN</sub>       | 7       | V       |
| Input Current             | I <sub>IN</sub>       | 5       | mA      |
| Power Dissipation         | P <sub>D</sub> (Note) | 1.47    | W       |
| Operating Temperature     | T <sub>opr</sub>      | -40~85  | °C      |
| Storage Temperature       | T <sub>stg</sub>      | -55~150 | °C      |

(Note) Delated above 25°C in the proportion of 11.7mW/°C.

## RECOMMENDED OPERATING CONDITIONS (Ta = -40~85°C)

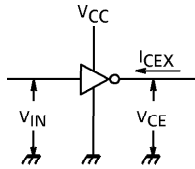
| CHARACTERISTIC    | SYMBOL           | CONDITION | MIN. | TYP. | MAX.            | UNIT    |
|-------------------|------------------|-----------|------|------|-----------------|---------|
| Supply Voltage    | V <sub>CC</sub>  | —         | 4.5  | 5.0  | 5.5             | V       |
| Output Voltage    | V <sub>OUT</sub> | —         | —    | —    | 12              | V       |
| Output Current    | I <sub>OUT</sub> | —         | —    | —    | 120             | mA / ch |
| Input Voltage     | V <sub>IN</sub>  | —         | 0    | —    | V <sub>CC</sub> | V       |
| Power Dissipation | P <sub>D</sub>   | —         | —    | —    | 0.52            | W       |

## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

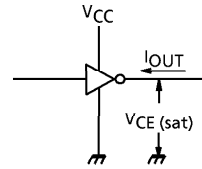
| CHARACTERISTIC            | SYMBOL               | TEST CIR-CUIT | TEST CONDITION  | MIN. | TYP. | MAX. | UNIT      |
|---------------------------|----------------------|---------------|---|------|------|------|-----------|
| Output Leakage Current    | I <sub>CEX</sub>     | 1             | V <sub>CC</sub> = 5V, V <sub>IN</sub> = OPEN<br>V <sub>OUT</sub> = 12V, Ta = 85°C | —    | —    | 100  | μA        |
| Output Saturation Voltage | V <sub>CE(sat)</sub> | 2             | V <sub>CC</sub> = 5V, V <sub>OUT</sub> = 120mA                                    | —    | 0.18 | 0.5  | V         |
| Input Current             | I <sub>IN(ON)</sub>  | 3             | V <sub>CC</sub> = 5V, V <sub>IN</sub> = 2.4V                                      | —    | 0.4  | 0.7  | mA        |
| Supply Current            | I <sub>CC</sub>      | 4             | V <sub>CC</sub> = V <sub>IN</sub> = 5V  | —    | —    | 8    | mA / Gate |
| Turn-On Delay             | t <sub>ON</sub>      | 5             | V <sub>OUT</sub> = 10V, R <sub>L</sub> = 100Ω<br>C <sub>L</sub> = 15pF            | —    | 0.1  | —    | μs        |
| Turn-Off Delay            | t <sub>OFF</sub>     |               |   | —    | 1.2  | —    | μs        |

**TEST CIRCUIT**

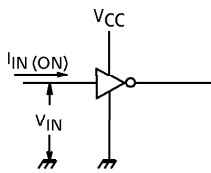
1.  $I_{CEX}$



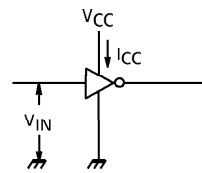
2.  $V_{CE(sat)}$



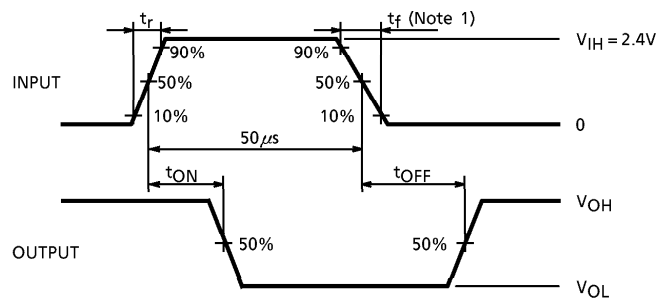
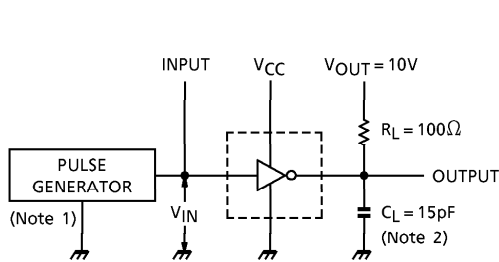
3.  $I_{IN(ON)}$



4.  $I_{CC}$



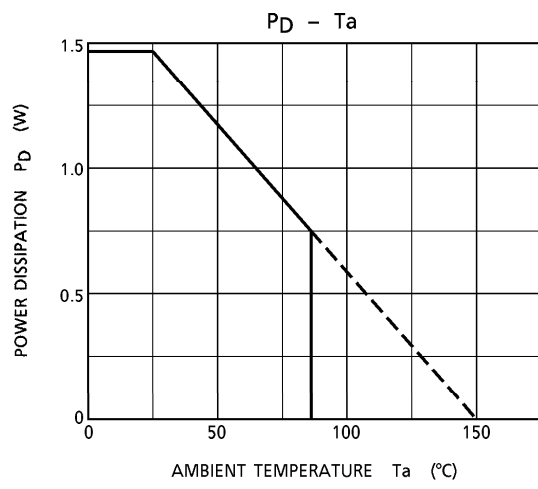
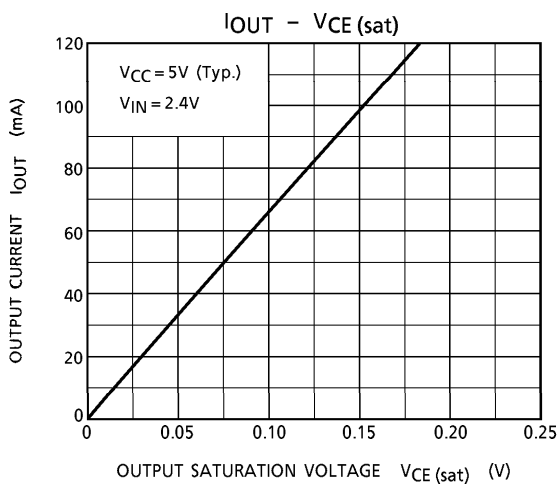
5.  $t_{ON}, t_{OFF}$



- (Note 1) Pulse Width  $50\mu s$ , Duty Cycle 10%  
Output Impedance  $50\Omega$ ,  $t_r \leq 5ns$ ,  $t_f \leq 10ns$
- (Note 2)  $C_L$  includes probe and jig capacitance.

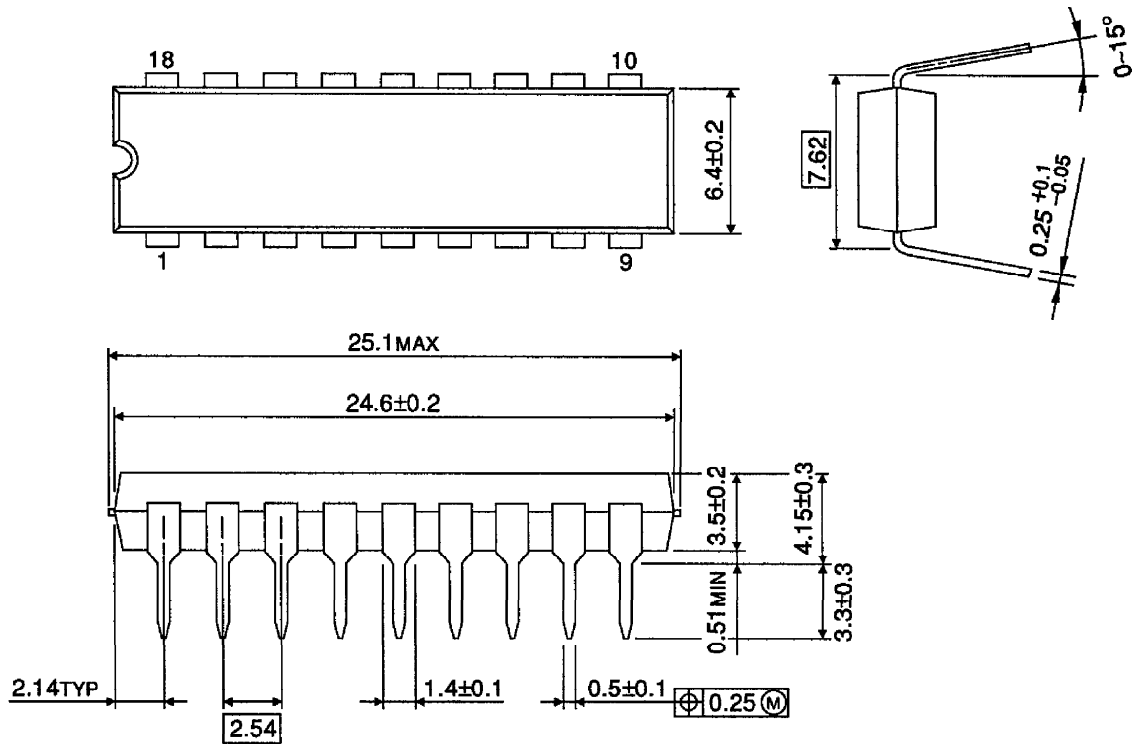
**PRECAUTIONS for USING**

Utmost care is necessary in the design of the output line,  $V_{CC}$  and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.



**OUTLINE DRAWING**  
DIP18-P-300-2.54D

Unit : mm



Weight : 1.47g (Typ.)