

**TD62476P, TD62477P, TD62478P, TD62479P****2CH PERIPHERAL AND / NAND / OR / NOR DRIVERS**

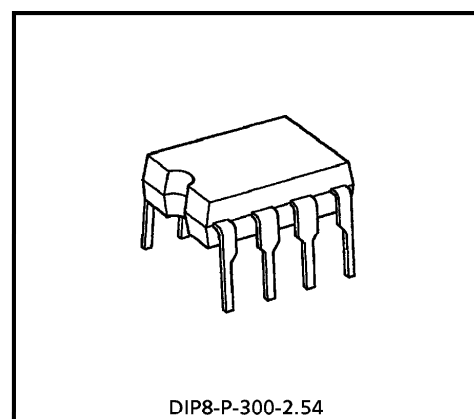
The TD62476P, TD62477P, TD62478P, TD62479P are comprised of two NPN single output stages and control inputs which can gate the outputs.

All units feature integral clamp diodes for switching inductive loads.

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

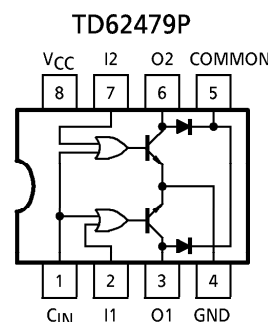
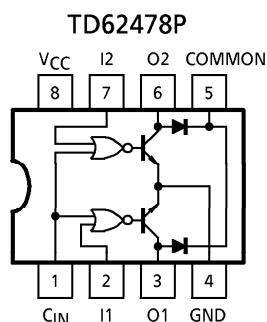
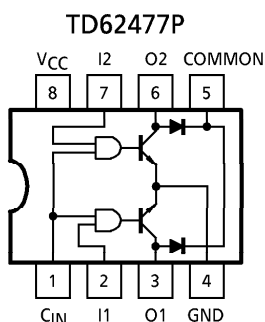
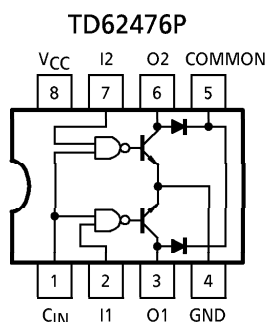
**FEATURES**

- Output current (single output) 350mA (Max.)
- High sustaining voltage output 35V (Min.)
- Output clamp diodes
- Inputs compatible with TTL and 5V CMOS
- Standard supply voltage
- Package type-P : DIP-8 pin



Weight : 0.45g (Typ.)

| TD62476P        |   |        | TD62477P        |   |        | TD62478P        |   |        | TD62479P        |   |        |
|-----------------|---|--------|-----------------|---|--------|-----------------|---|--------|-----------------|---|--------|
| INPUT           |   | OUTPUT | INPUT           |   | OUTPUT | INPUT           |   | OUTPUT | INPUT           |   | OUTPUT |
| C <sub>IN</sub> | I |        | C <sub>IN</sub> | I |        | C <sub>IN</sub> | I |        | C <sub>IN</sub> | I |        |
| 0               | 0 | ON     | 0               | 0 | OFF    | 0               | 0 | ON     | 0               | 0 | OFF    |
| 0               | 1 | OFF    | 0               | 1 | OFF    | 0               | 1 | OFF    | 0               | 1 | ON     |
| 1               | 0 | OFF    | 1               | 0 | OFF    | 1               | 0 | OFF    | 1               | 0 | ON     |
| 1               | 1 | OFF    | 1               | 1 | ON     | 1               | 1 | OFF    | 1               | 1 | ON     |

**PIN CONNECTION (TOP VIEW)**

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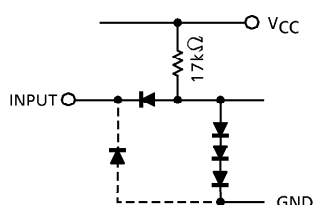
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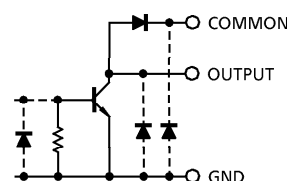
● The information contained herein is subject to change without notice.

## EQUIVALENT OF INPUTS AND OUTPUTS

Equivalent of inputs



Equivalent of outputs



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

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

| CHARACTERISTIC              | SYMBOL        | RATING          | UNIT             |
|-----------------------------|---------------|-----------------|------------------|
| Supply Voltage              | $V_{CC}$      | $-0.5 \sim 7.0$ | V                |
| Input Voltage               | $V_{IN}$      | $-0.5 \sim 5.5$ | V                |
| Output Sustaining Voltage   | $V_{CE(SUS)}$ | $-0.5 \sim 35$  | V                |
| Output Current              | $I_{OUT}$     | 350             | mA / ch          |
| Clamp Diode Reverse Voltage | $V_R$         | 35              | V                |
| Clamp Diode Forward Current | $I_F$         | 300             | mA               |
| Power Dissipation           | $P_D$ (Note)  | 0.9             | W                |
| Operating Temperature       | $T_{opr}$     | $-30 \sim 75$   | $^\circ\text{C}$ |
| Storage Temperature         | $T_{stg}$     | $-55 \sim 150$  | $^\circ\text{C}$ |

(Note) Delated above  $25^\circ\text{C}$  in the proportion of  $7.2\text{mW}/^\circ\text{C}$ .

RECOMMENDED OPERATING CONDITIONS ( $T_a = -30 \sim 75^\circ\text{C}$ )

| CHARACTERISTIC              | SYMBOL        | CONDITION     | MIN. | TYP. | MAX.     | UNIT    |
|-----------------------------|---------------|---------------|------|------|----------|---------|
| Supply Voltage              | $V_{CC}$      | —             | 4.5  | 5.0  | 5.5      | V       |
| Output Sustaining Voltage   | $V_{CE(SUS)}$ | —             | 0    | —    | 35       | V       |
| Output Current              | $I_{OUT}$     | DC 1 Circuit  | 0    | —    | 300      | mA / ch |
|                             |               | DC 2 Circuits | 0    | —    | 200      |         |
| Input Voltage               | $V_{IN}$      | —             | 4.5  | —    | $V_{CC}$ | V       |
| Clamp Diode Reverse Voltage | $V_R$         | —             | —    | —    | 35       | V       |
| Clamp Diode Forward Current | $I_F$         | —             | —    | —    | 300      | mA      |
| Power Dissipation           | $P_D$         | —             | —    | —    | 0.4      | W       |

## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

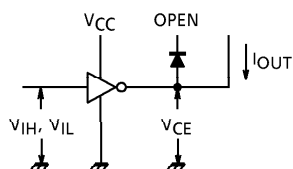
| CHARACTERISTIC              |            |                 | SYMBOL           | TEST CIR-<br>CUIT | TEST CONDITION  | MIN.                     | TYP.  | MAX. | UNIT |    |
|-----------------------------|------------|-----------------|------------------|-------------------|---|--------------------------|-------|------|------|----|
| Input Voltage               | “H” Level  |                 | V <sub>IH</sub>  | 1                 | —   | 2.0                      | —     | —    | V    |    |
|                             | “L” Level  |                 | V <sub>IL</sub>  | 1                 | —   | —                        | —     | 0.8  |      |    |
| Output Current              | “H” Level  |                 | I <sub>OH</sub>  | 2                 | V <sub>CC</sub> = 4.5V, V <sub>IH</sub> = 2.0V<br>V <sub>IL</sub> = 0.8V, V <sub>OH</sub> = 35V | —                        | —     | 10   | μA   |    |
| Output Voltage              | “L” Level  |                 | V <sub>OL</sub>  | 3                 | V <sub>CC</sub> = 4.5V  | I <sub>OUT</sub> = 100mA | —     | 0.15 | 0.30 | V  |
|                             |            |                 |                  |                   | V <sub>IH</sub> = 2.0V  | I <sub>OUT</sub> = 200mA | —     | 0.28 | 0.45 |    |
|                             |            |                 |                  |                   | V <sub>IL</sub> = 0.8V  | I <sub>OUT</sub> = 300mA | —     | 0.45 | 0.60 |    |
| Input Current               | “H” Level  |                 | I <sub>IH</sub>  | 4                 | V <sub>CC</sub> = 5.5V, V <sub>IN</sub> = 5.5V  | —                        | —     | 10   | μA   |    |
|                             | “L” Level  | I               | I <sub>IL</sub>  | 5                 | V <sub>CC</sub> = 5.5V, V <sub>IN</sub> = 0.4V  | —                        | −0.26 | −0.4 | mA   |    |
|                             |            | C <sub>IN</sub> |                  |                   |   | —                        | −0.52 | −0.8 |      |    |
| Clamp Diode Reverse Current |            |                 | I <sub>R</sub>   | 6                 | V <sub>CC</sub> = 4.5V, V <sub>R</sub> = 35V  | —                        | —     | 10   | μA   |    |
| Clamp Diode Forward Voltage |            |                 | V <sub>F</sub>   | 7                 | V <sub>CC</sub> = 4.5V, I <sub>F</sub> = 300mA  | —                        | 1.5   | 1.75 | V    |    |
| Supply Current              | Output Off | TD62476P        | I <sub>CCH</sub> | 5                 | V <sub>CC</sub> = 5.5V  | V <sub>IN</sub> = 5V     | —     | 8.4  | 14   | mA |
|                             |            | TD62477P        |                  |                   |   | V <sub>IN</sub> = 0V     | —     | 0.6  | 0.85 |    |
|                             |            | TD62478P        |                  |                   |   | V <sub>IN</sub> = 5V     | —     | 9    | 14   |    |
|                             |            | TD62479P        |                  |                   |   | V <sub>IN</sub> = 0V     | —     | 1.1  | 1.8  |    |
|                             | Output On  | TD62476P        | I <sub>CCL</sub> | 4                 |   | V <sub>IN</sub> = 5V     | —     | 38   | 55   |    |
|                             |            | TD62477P        |                  |                   |   | V <sub>IN</sub> = 0V     | —     | 36   | 53   |    |
|                             |            | TD62478P        |                  |                   |   | V <sub>IN</sub> = 5V     | —     | 39   | 56   |    |
|                             |            | TD62479P        |                  |                   |   | V <sub>IN</sub> = 0V     | —     | 36   | 63   |    |

## SWITCHING CHARACTERISTICS (Ta = 25°C)

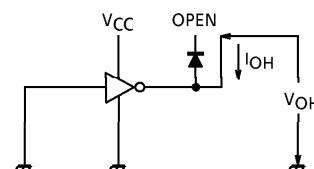
| CHARACTERISTIC         |           | SYMBOL           | TEST CIR-CUIT | CONDITION                                    | MIN. | TYP. | MAX. | UNIT |
|------------------------|-----------|------------------|---------------|--|------|------|------|------|
| Propagation Delay Time | "H" Level | t <sub>pLH</sub> | —             | C <sub>L</sub> = 15pF, R <sub>L</sub> = 120Ω | —    | 0.7  | —    | μs   |
|                        | "L" Level | t <sub>pHL</sub> | —             |  | —    | 0.2  | —    |      |

## TEST CIRCUIT

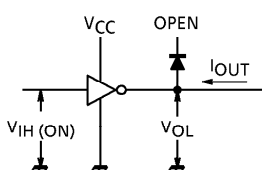
### 1. $V_{IH}$ , $V_{IL}$



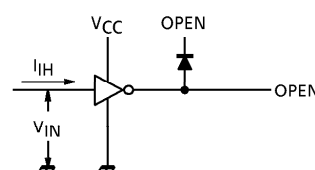
### 2. $I_{OH}$



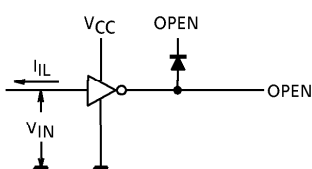
### 3. $V_{OL}$



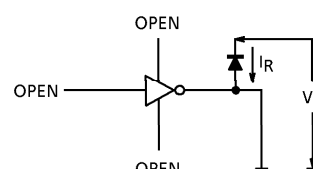
### 4. $I_{IH}$ , $I_{CCL}$



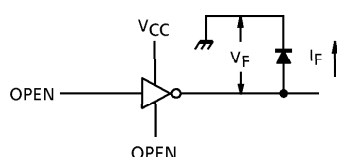
### 5. $I_{IL}$ , $I_{CCH}$



### 6. $I_R$



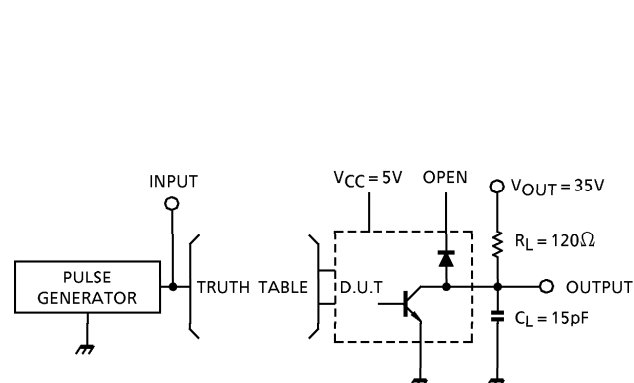
### 7. $V_F$



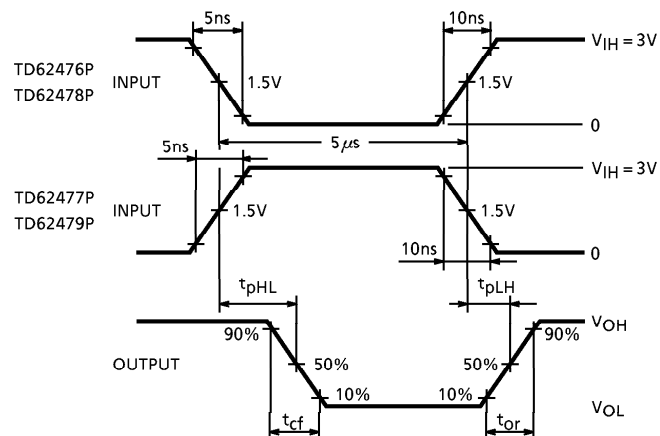
## PRECAUTIONS for USING

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

## TEST CIRCUIT OF SWITCHING CHARACTERISTIC

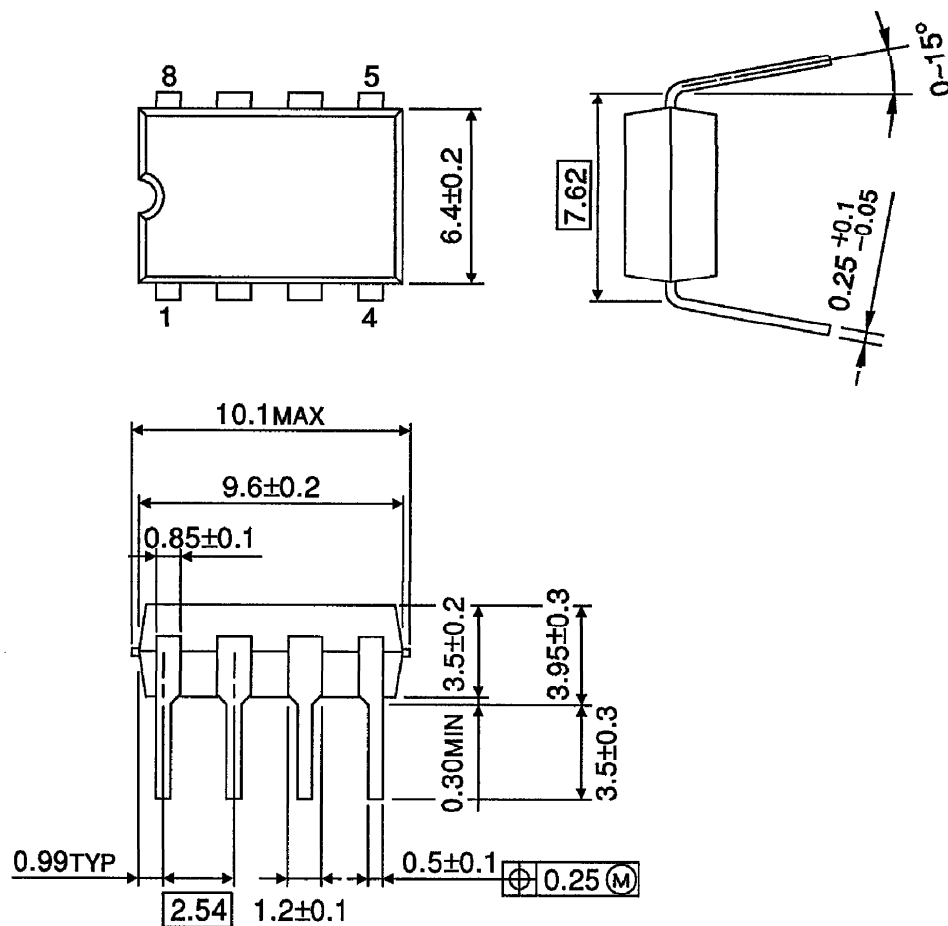


## TEST WAVEFORM



**OUTLINE DRAWING**  
DIP8-P-300-2.54

Unit : mm



Weight : 0.45g (Typ.)