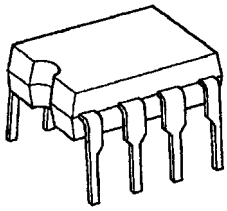
TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

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.



DIP8-P-300-2.54

Weight: 0.45 g (Typ.)

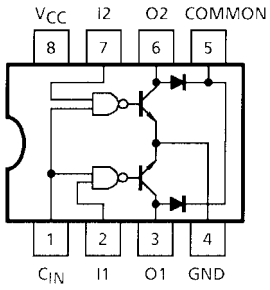
FEATURES

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

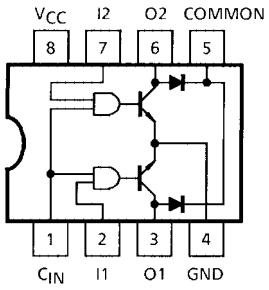
TD62476P			TD62477P			TD62478P			TD62479P		
INPUT		OUTPUT	INPUT		OUTPUT	INPUT		OUTPUT	INPUT		OUTPUT
C_{IN}	I		C_{IN}	I		C_{IN}	I		C_{IN}	I	
0	0	ON	0	0	OFF	0	0	ON	0	0	OFF
0	1	OFF	0	1	OFF	0	1	OFF	0	1	ON
1	0	OFF	1	0	OFF	1	0	OFF	1	0	ON
1	1	OFF	1	1	ON	1	1	OFF	1	1	ON

PIN CONNECTION (TOP VIEW)

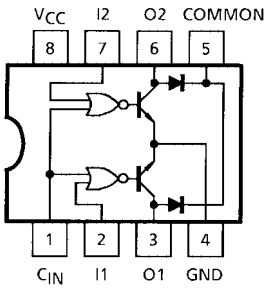
TD62476P



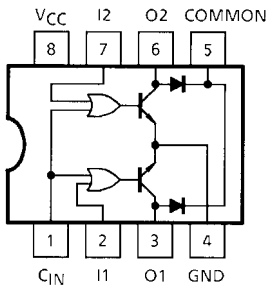
TD62477P



TD62478P

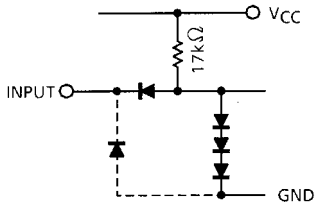


TD62479P

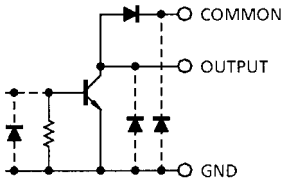


EQUIVALENT OF INPUTS AND OUTPUTS

Equivalent of inputs



Equivalent of outputs



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

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTICS	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	−0.5~7.0	V
Input Voltage	V_{IN}	−0.5~5.5	V
Output Sustaining Voltage	$V_{CE\ (SUS)}$	−0.5~35	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}	−30~75	°C
Storage Temperature	T_{stg}	−55~150	°C

Note: Delated above 25°C in the proportion of 7.2 mW / °C.

RECOMMENDED OPERATING CONDITIONS (Ta = −30~75°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)

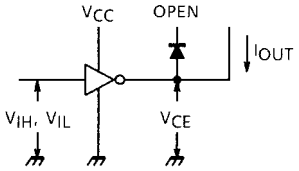
CHARACTERISTIC			SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN	TYP.	MAX	UNIT
Input Voltage	"H" Level		V_{IH}	1	—		2.0	—	—	V
	"L" Level		V_{IL}	1	—		—	—	0.8	
Output Current	"H" Level		I_{OH}	2	V_{CC} = 4.5V, V_{IH} = 2.0 V V_{IL} = 0.8V, V_{OH} = 35 V		—	—	10	μA
Output Voltage	"L" Level		V_{OL}	3	V_{CC} =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

SWITCHING CHARACTERISTICS (Ta = 25°C)

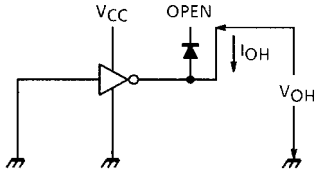
CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	CONDITION	MIN	TYP.	MAX	UNIT
Propagation Delay Time	"H" Level	t_{pLH}	—	C_L = 15 pF, R_L = 120Ω	—	0.7	—	μs
	"L" Level	t_{pHL}	—		—	0.2	—	

TEST CIRCUIT

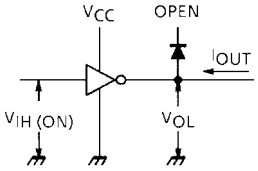
1. V_{IH}, V_{IL}



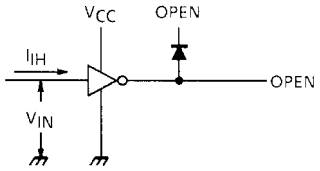
2. I_{OH}



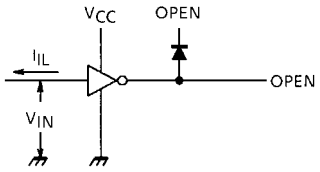
3. V_{OL}



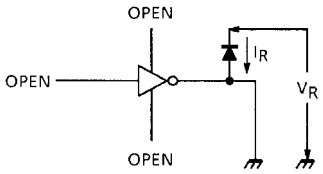
4. I_{IH}, I_{CCL}



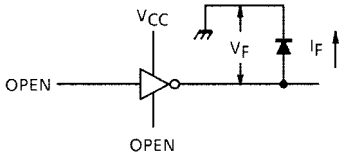
5. I_{IL}, I_{CCH}



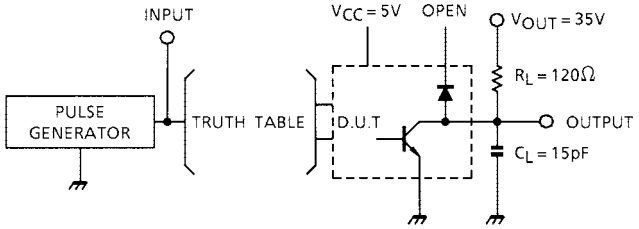
6. I_R



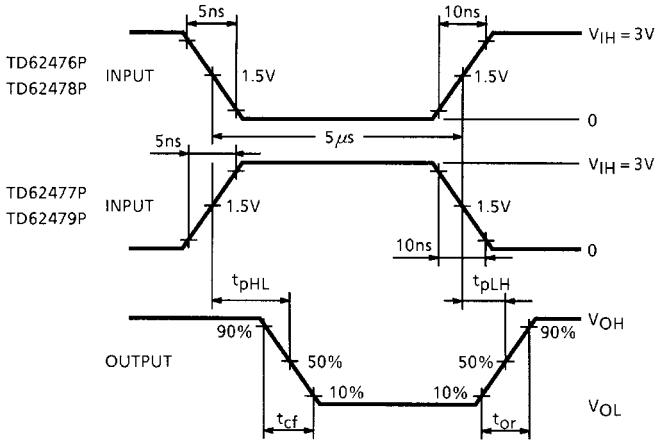
7. V_F



TEST CIRCUIT OF SWITCHING CHARACTERISTIC



TEST WAVEFORM

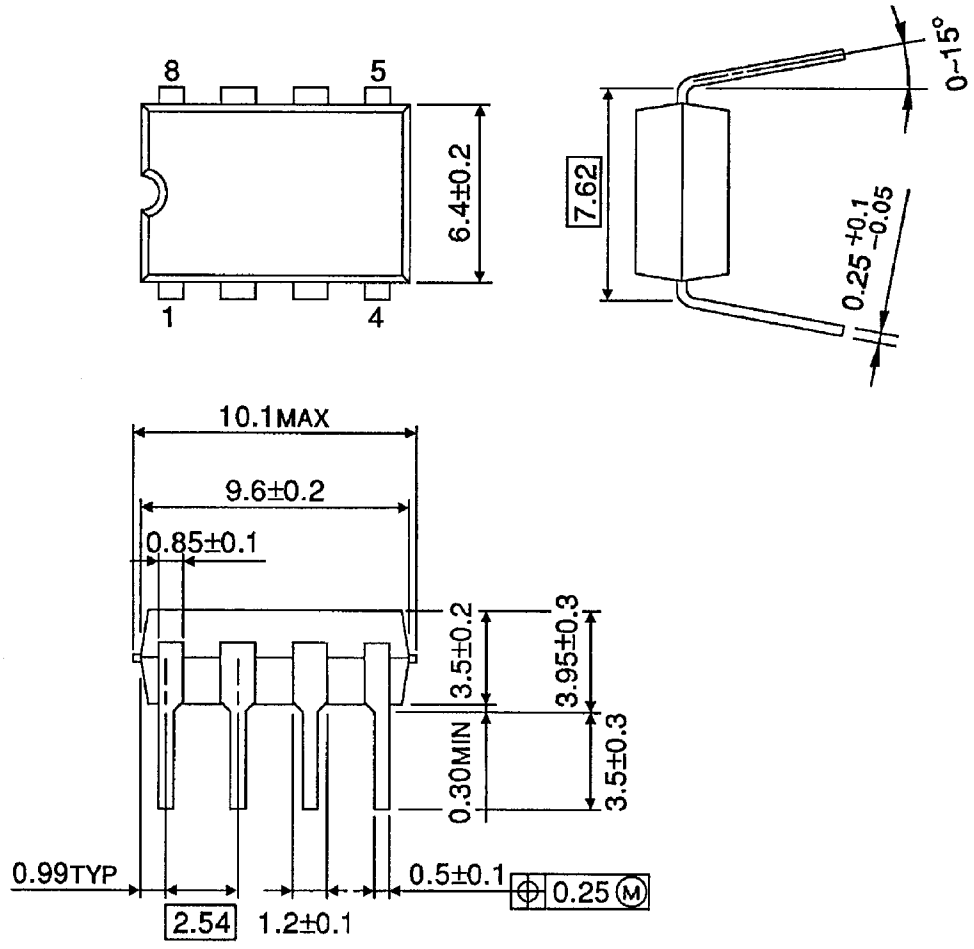


PRECAUTIONS for USING

This IC does not integrate protection circuits such as overcurrent and overvoltage protectors.
Thus, if excess current or voltage is applied to the IC, the IC may be damaged. Please design the IC so that excess current or voltage will not be applied to the IC.
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

PACKAGE DIMENSIONS

DIP8−P−300−2.54 Unit: mm



Weight: 0.45 g (Typ.)

RESTRICTIONS ON PRODUCT USE

000707EBA

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