

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62503PA, TD62504PA

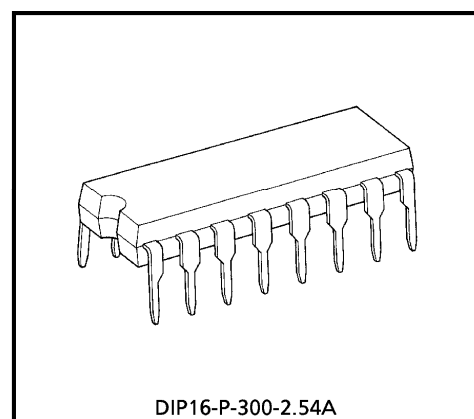
7CH SINGLE DRIVER : COMMON EMITTER

The TD62503PA and TD62504PA are comprised of seven or five NPN transistor arrays.

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

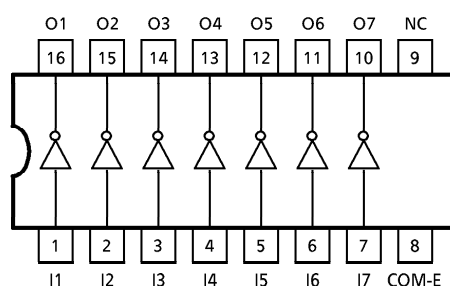
FEATURES

- Output current (single output) 200mA / ch (Max.)
- High sustaining voltage output 35V (Min.)
- Low saturation voltage $V_{CE(sat)} = 0.8V$ @ $I_{OUT} = 150mA$
- Inputs compatible with various types of logic.
- TD62503PA : $R_{IN} = 2.7k\Omega$ TTL, 5V CMOS
- TD62504PA : $R_{IN} = 10.5k\Omega$ PMOS, CMOS
- Package type-PA : DIP-16 pin

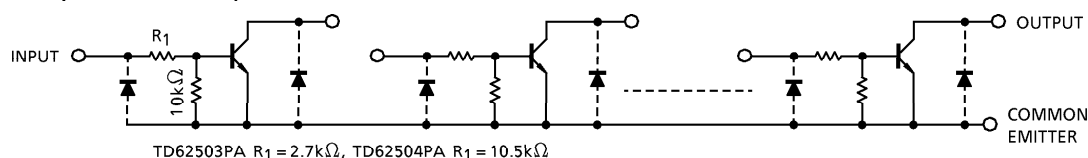


Weight : 1.11g (Typ.)

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
Collector-Emitter Voltage	V_{CEO}	35	V
Collector-Base Voltage	V_{CBO}	50	V
Collector Current	I_C	200	mA / ch
Input Voltage	V_{IN}	- 0.5~30	V
Power Dissipation	P_D (Note)	1.0	W
Operating Temperature	T_{opr}	- 40~85	°C
Storage Temperature	T_{stg}	- 55~150	°C

(Note) Delated above 25°C in the proportion of 8.0mW / °C.

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

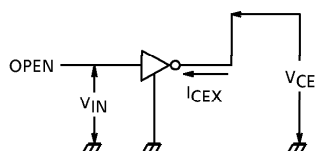
CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Voltage	V_{CEO}	—	0	—	35	V
Collector-Base Voltage	V_{CBO}	—	0	—	50	V
Collector Current	I_C	—	0	—	150	mA / ch
Input Voltage	TD62503PA TD62504PA	V_{IN}	0	—	25	V
Power Dissipation	P_D	—	—	—	0.360	W

ELECTRICAL CHARACTERISTICS (Ta = 25°C unless otherwise noted)

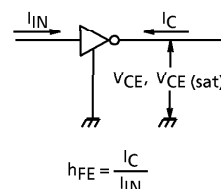
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I_{CEX}	1	$V_{CE} = 25V, V_{IN} = 0$	—	—	10	μA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	2	$I_{IN} = 1mA, I_C = 10mA$	—	—	0.2	V
			$I_{IN} = 3mA, I_C = 150mA$	—	—	0.8	
DC Current Transfer Ratio	h_{FE}	2	$V_{CE} = 10V, I_C = 10mA$	50	—	—	—
Input Voltage (Output On)	TD62503PA TD62504PA	3	$I_{IN} = 1mA, I_C = 10mA$	2.4	3.4	4.2	V
				7.5	11.5	15	
Input Voltage (Output Off)	TD62505PA TD62506PA	—	—	0.6	0.8	1.0	V
				1.1	1.6	1.9	
Turn-On Delay	t_{ON}	4	$V_{OUT} = 35V, R_L = 3.3k\Omega$ $C_L = 15pF$	—	50	—	ns
Turn-Off Delay	t_{OFF}			—	200	—	

TEST CIRCUIT

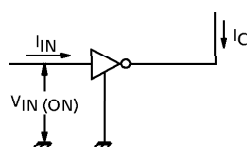
1. I_{CEX}



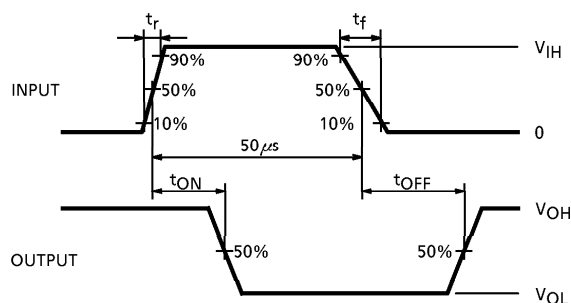
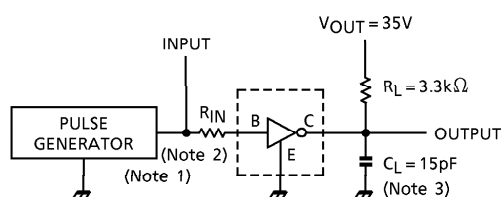
2. h_{FE} , $V_{CE(sat)}$



3. $V_{IN(ON)}$



4. t_{ON} , t_{OFF}



(Note 1) Pulse Width $50\mu s$, Duty Cycle 10%
Output Impedance 50Ω , $t_r \leq 5ns$, $t_f \leq 10ns$

(Note 2) See below.

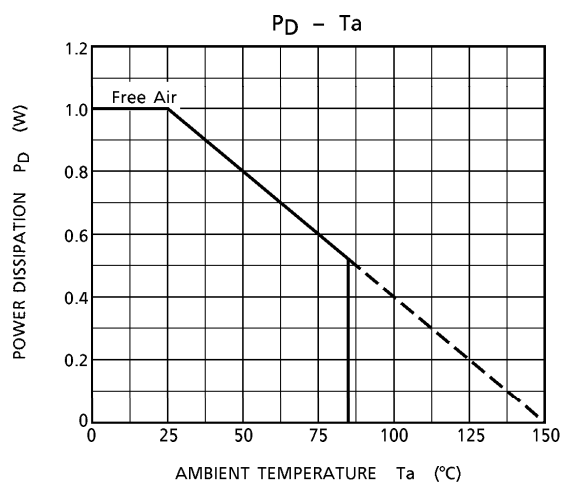
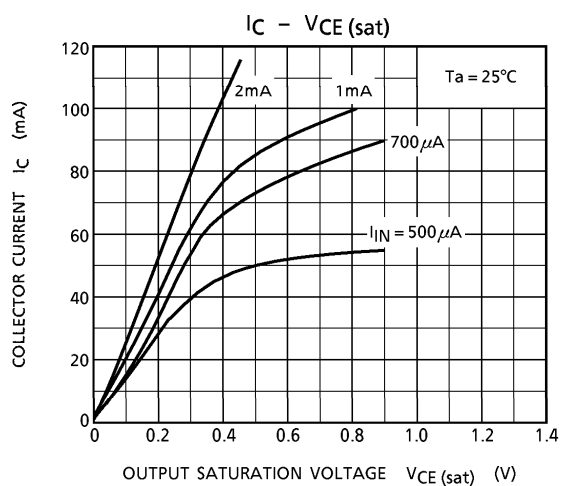
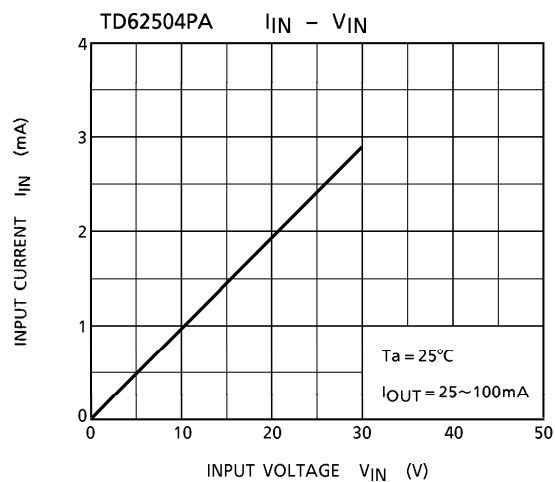
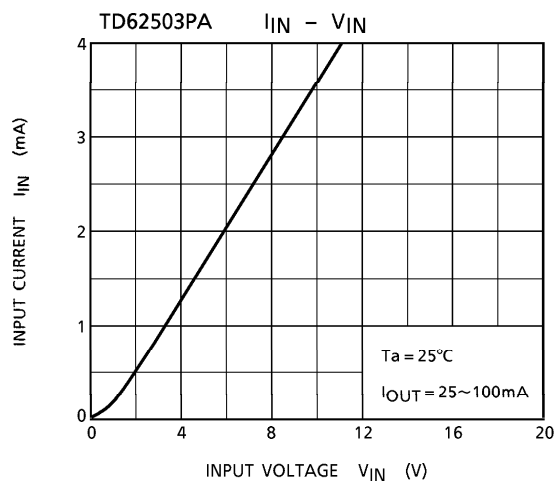
INPUT CONDITION

TYPE NUMBER	R_{IN}	V_{IH}
TD62503PA	0Ω	3V
TD62504PA	0Ω	10V

(Note 3) C_L includes probe and jig capacitance.

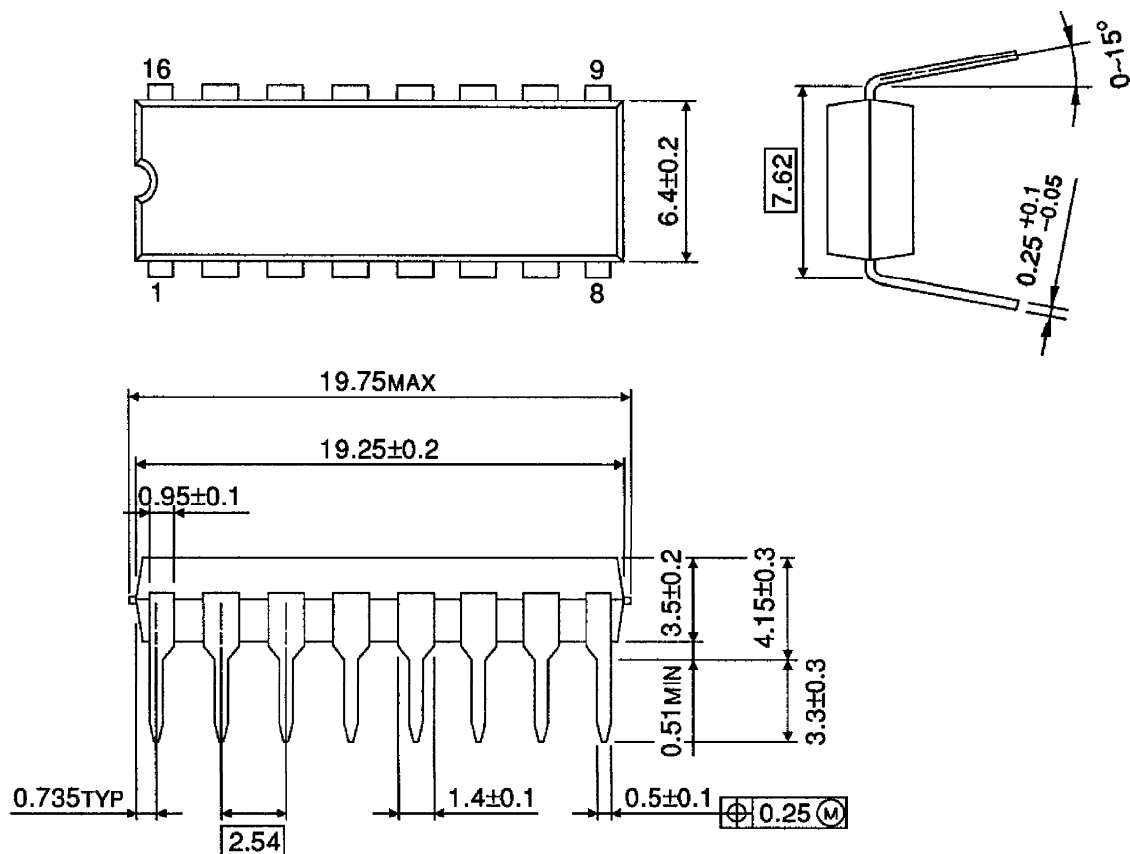
PRECAUTIONS for USING

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
DIP16-P-300-2.54A

Unit : mm



Weight : 1.11g (Typ.)