

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

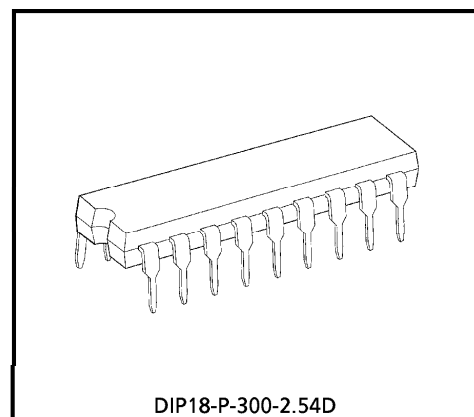
TD62380P

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.



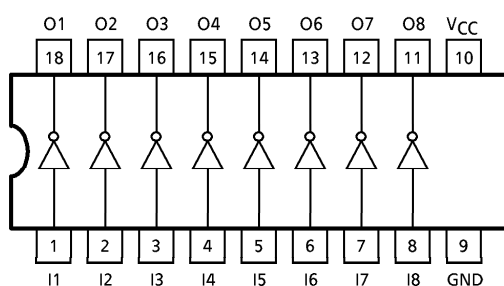
DIP18-P-300-2.54D

Weight : 1.47g (Typ.)

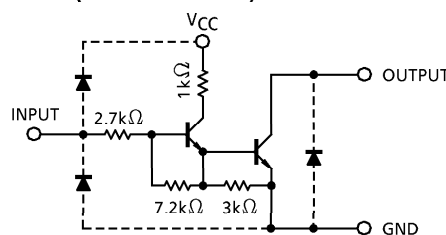
FEATURES

- 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 _{CC}	7	V
Output Sustaining Voltage	V _{CE (SUS)}	15	V
Output Current	I _{OUT}	120	mA / ch
Input Voltage	V _{IN}	7	V
Input Current	I _{IN}	5	mA
Power Dissipation	P _D (Note)	1.47	W
Operating Temperature	T _{opr}	– 40~85	°C
Storage Temperature	T _{stg}	– 55~150	°C

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

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

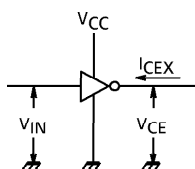
CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V _{CC}	—	4.5	5.0	5.5	V
Output Voltage	V _{OUT}	—	—	—	12	V
Output Current	I _{OUT}	—	—	—	120	mA / ch
Input Voltage	V _{IN}	—	0	—	V _{CC}	V
Power Dissipation	P _D	—	—	—	0.52	W

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

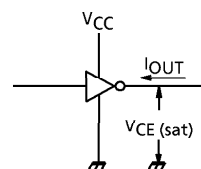
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I _{CEX}	1	V _{CC} = 5V, V _{IN} = OPEN V _{OUT} = 12V, Ta = 85°C	—	—	100	μA
Output Saturation Voltage	V _{CE (sat)}	2	V _{CC} = 5V, V _{OUT} = 120mA	—	0.18	0.5	V
Input Current	I _{IN (ON)}	3	V _{CC} = 5V, V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

TEST CIRCUIT

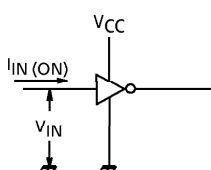
1. I_{CEX}



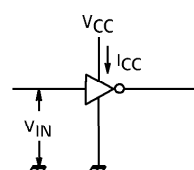
2. $V_{CE(sat)}$



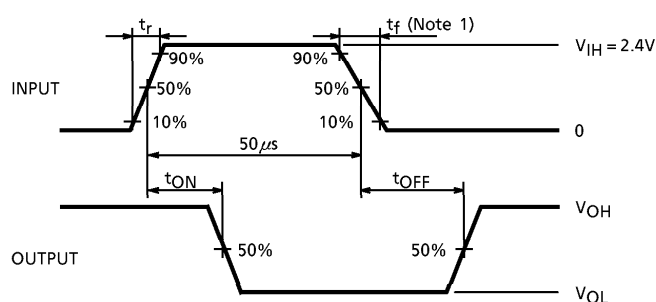
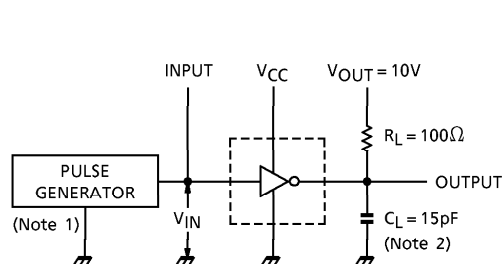
3. $I_{IN(ON)}$



4. I_{CC}



5. t_{ON} , t_{OFF}

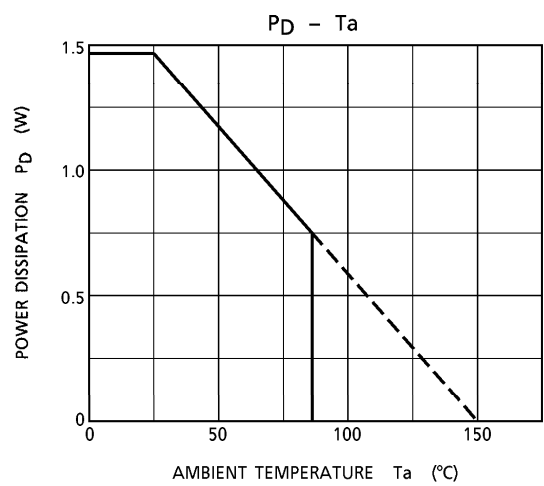
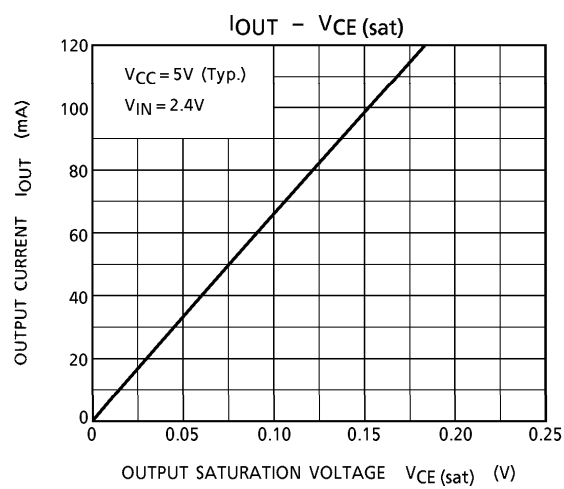


(Note 1) Pulse Width $50\mu s$, Duty Cycle 10%
Output Impedance 50Ω , $t_r \leq 5ns$, $t_f \leq 10ns$

(Note 2) C_L includes probe and jig capacitance.

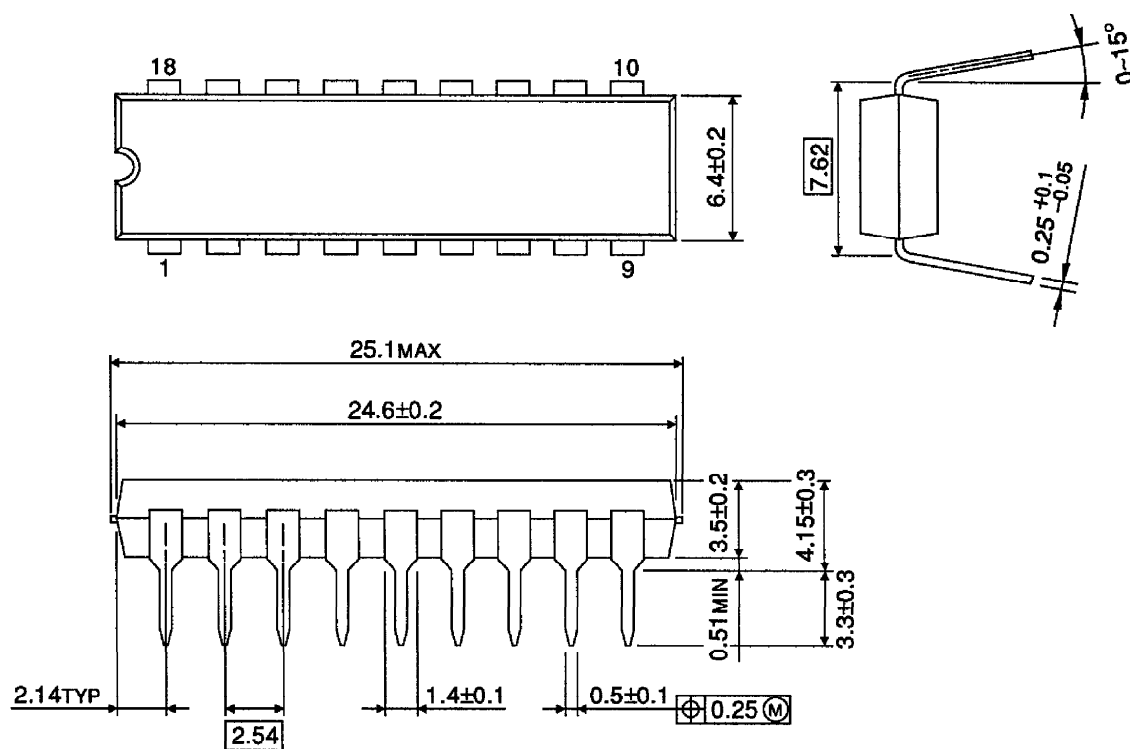
PRECAUTIONS for USING

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.)