

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62382AP, TD62382F, TD62382AF

8CH LOW INPUT ACTIVE SINK DRIVER

The TD62382AP/F/AF are non-inverting transistor array which are comprised of eight Low saturation output stages and PNP input stages.

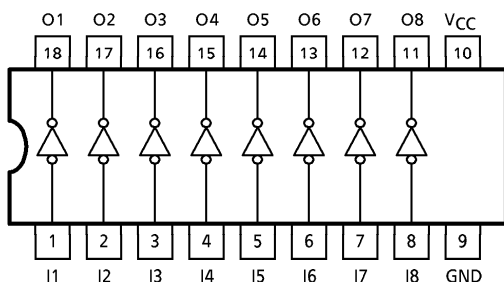
This device is low level input active driver and is suitable for operation with TTL, 5V CMOS and 5V Microprocessor which have sink current output drivers.

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

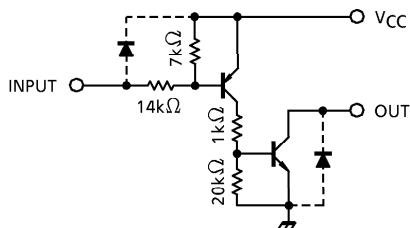
FEATURES

- Low saturation output 0.23V MAX. @ $I_{OUT} = 40\text{mA MAX.}$
- Output rating 35V MIN./50mA MAX. (TD62382F)
50V MIN./50mA MAX. (TD62382AP, TD62382AF)
- Input compatible with TTL and 5V CMOS
- Low level active inputs
- Standard supply voltage
- Package type-AP : DIP-18pin
- Package type-F, AF : SOP-18pin

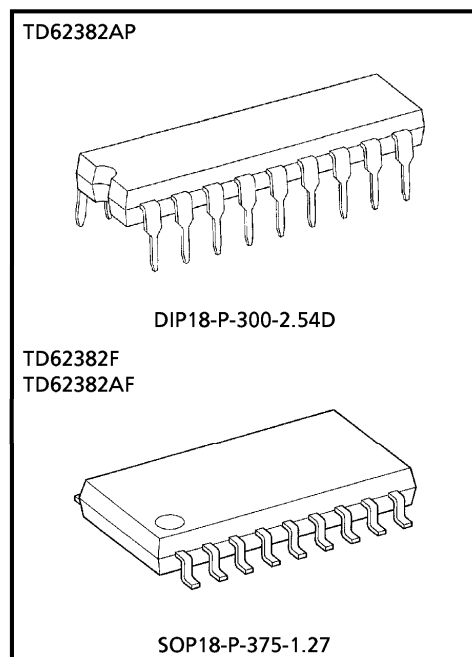
PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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



Weight
 DIP18-P-300-2.54D : 1.47g (Typ.)
 SOP18-P-375-1.27 : 0.41g (Typ.)

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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V _{CC}	- 0.5~7.0	V
Output Sustaining Voltage	AP, AF	- 0.5~50	V
	F	- 0.5~35	
Output Current	I _{OUT}	50	mA / ch
Input Voltage	V _{IN}	- 22~V _{CC} + 0.5	V
Input Current	I _{IN}	10	mA
Power Dissipation	AP	1.47	W
	F, AF	0.96	
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 (AP-Type), 7.7mW/°C (F, AF-Type).

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 Sustaining Voltage	AP, AF	V _{CE} (SUS)	—	0	50	V
	F		—	0	35	
Output Current	AP	I _{OUT}	DC 1 Circuit	0	40	mA / ch
			8 Circuits	0	40	
			8 Circuits	0	40	
Input Voltage	Output On	V _{IN}	—	- 20	V _{CC}	V
		V _{IN} (ON)	—	- 20	V _{CC} - 3.5	V
		V _{IN} (OFF)	—	V _{CC} - 0.3	V _{CC} + 0.5	
Power Dissipation	AP	P _D	—	—	0.52	W
	F, AF		—	—	0.35	

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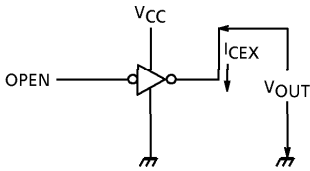
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- The information contained herein is subject to change without notice.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

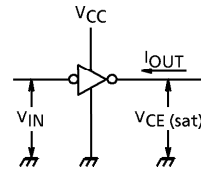
CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current		I _{CEX}	1	V _{CC} = 5.5V, I _{IN} = 0 V _{OUT} = 35V, Ta = 75°C	—	—	100	μA
Output Saturation Voltage		V _{CE (sat)}	2	V _{CC} = 4.5V, V _{IN} = 0.8V I _{OUT} = 40mA	—	—	0.23	V
Input Current	Output On	I _{IN (ON)}	3	V _{CC} = 5.5V, V _{IN} = 0.4V	—	-0.32	-0.45	mA
	Output Off	I _{IN (OFF)}	4	V _{CC} = 5.5V, V _{IN} = -20V	—	—	-2.6	
Input Voltage	Output On	V _{IN (ON)}	5	—	-20	—	V _{CC} - 3.5	V
	Output Off	I _{CC (OFF)}	6	V _{CC} = V _{IN} = 5.5V, Ta = 75°C	—	—	100	μA
Supply Current	Output On	I _{CC (ON)}	6	V _{CC} = 5.5V, V _{IN} = 0V	—	—	6	mA / ch
	Output Off	I _{CC (OFF)}	6	V _{CC} = V _{IN} = 5.5V, Ta = 75°C	—	—	100	
Turn-On Delay	AP, AF	t _{ON}	7	V _{CC} = 5V C _L = 15pF	—	—	V _{OUT} = 35V, R _L = 82Ω	μs
	F						V _{OUT} = 50V, R _L = 1kΩ	
Turn-Off Delay	AP, AF	t _{OFF}					V _{OUT} = 35V, R _L = 82Ω	
	F						V _{OUT} = 50V, R _L = 1kΩ	

TEST CIRCUIT

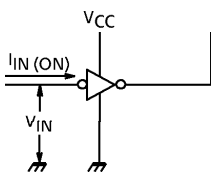
1. I_{CEX}



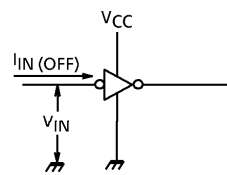
2. $V_{CE(sat)}$



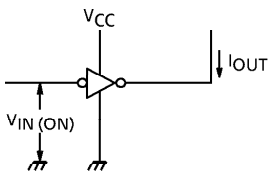
3. $I_{IN(ON)}$



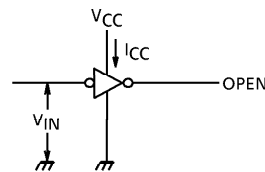
4. $I_{IN(OFF)}$



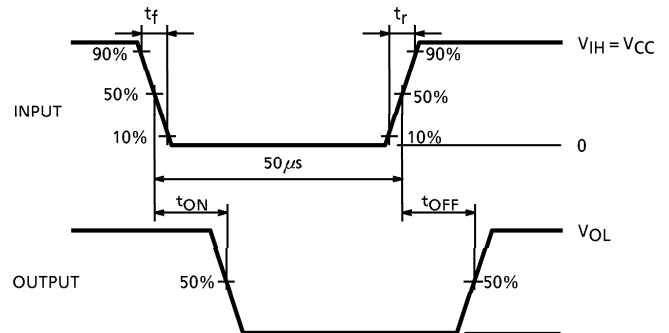
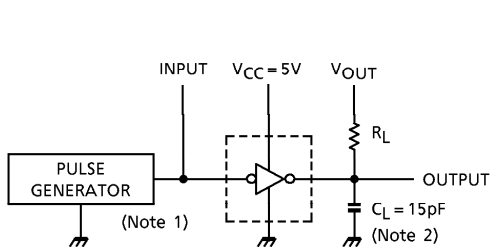
5. $V_{IN(ON)}$



6. I_{CC}



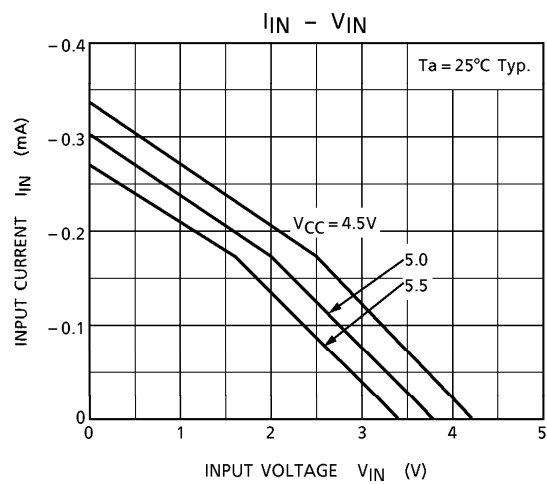
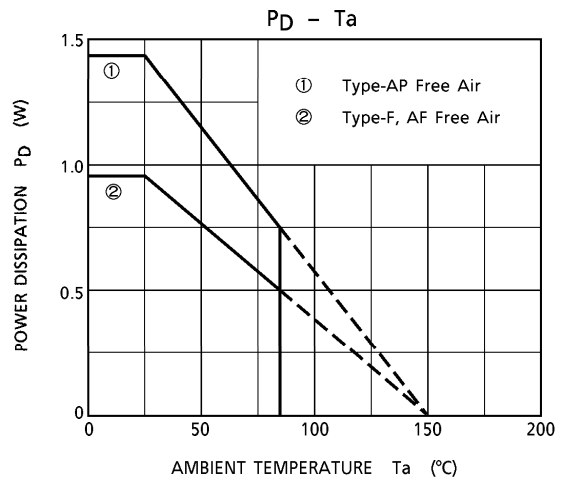
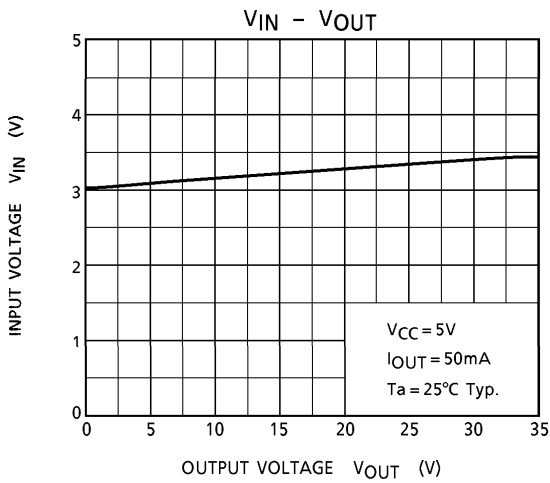
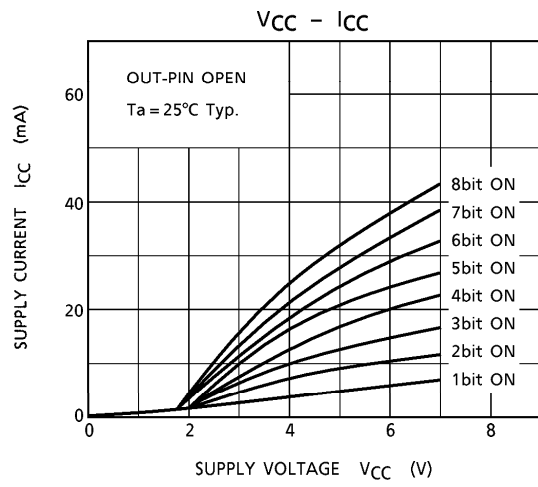
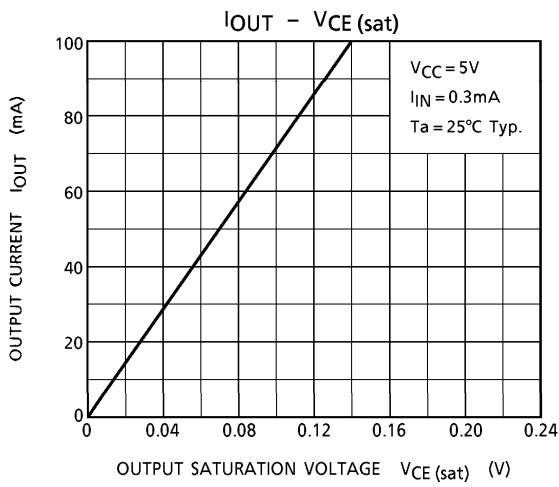
7. t_{ON}, t_{OFF}



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

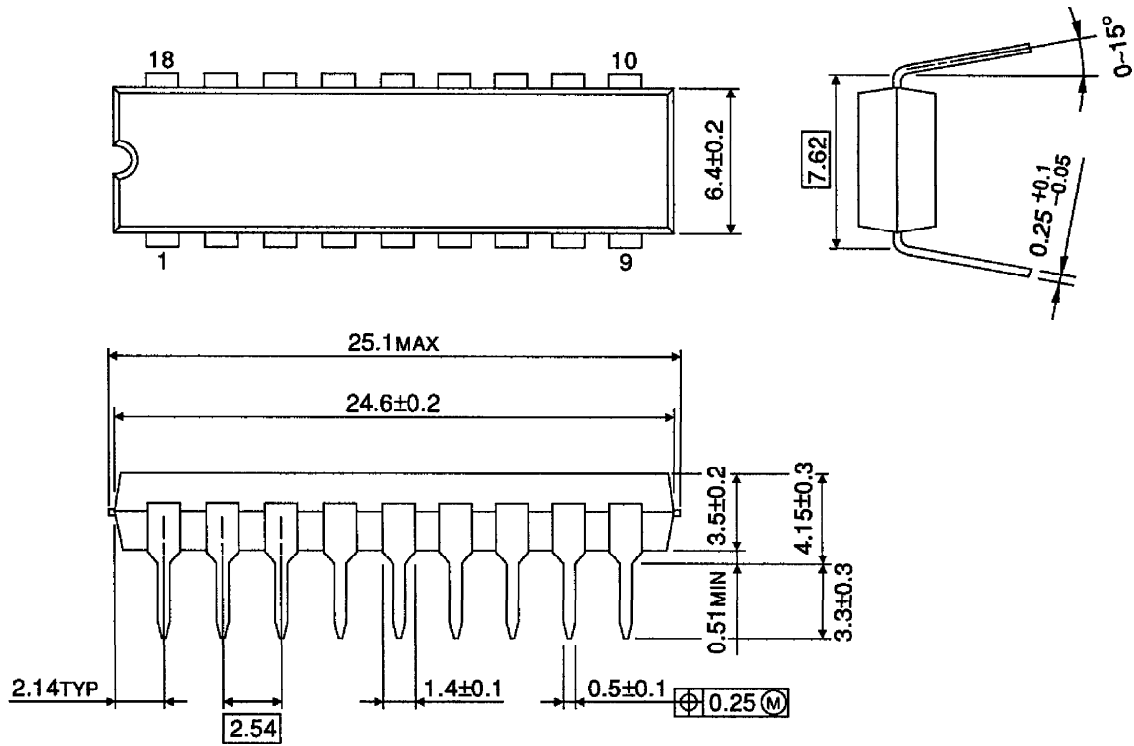
PRECAUTIONS for USING

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

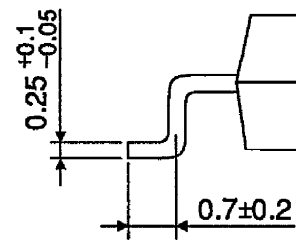
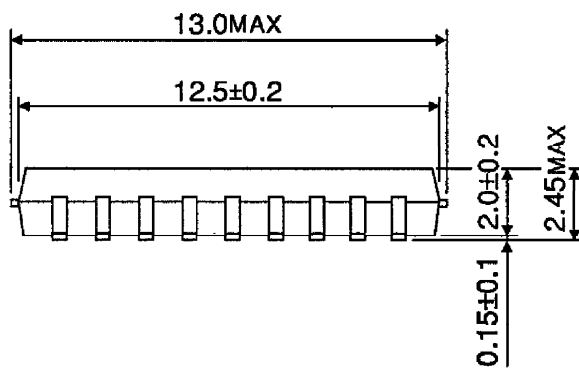
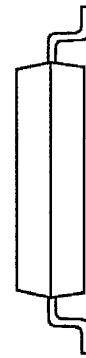
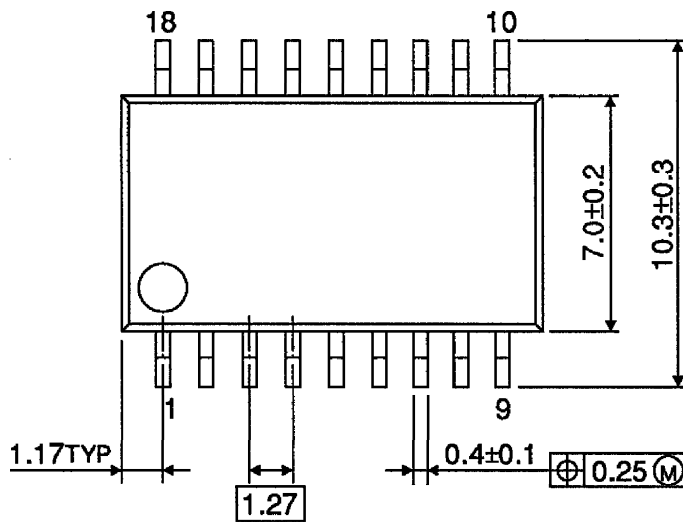
Unit : mm



Weight : 1.47g (Typ.)

OUTLINE DRAWING
SOP18-P-375-1.27

Unit : mm



Weight : 0.41g (Typ.)