

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62300P, TD62300F

2CH LOW V_{CC} SINK DRIVER

The TD62300P, TD62300F are comprised of two Low V_{CC} drivers.

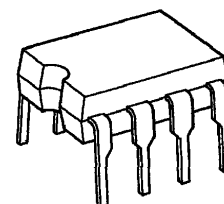
These devices can operate from $V_{CC} = 1.0V$, and suitable for various types of battery system.

Applications include relay, hammer, lamp and stepping motor drivers.

FEATURES

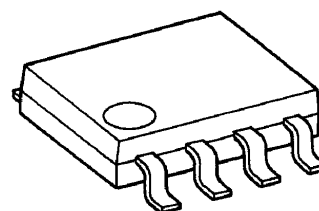
- Wide supply voltage range : $V_{CC} = 1.0 \sim 6.5V$
- High output current (single output) : 200mA (Max.)
- Low supply current : $I_{CC} (OFF) = 1\mu A$ (Max.)
- Input resistor : $R_{IN} = 33k\Omega$ (Typ.)
- Package type-P : DIP-8 pin
- Package type-F : SOP-8 pin

TD62300P



DIP8-P-300-2.54

TD62300F

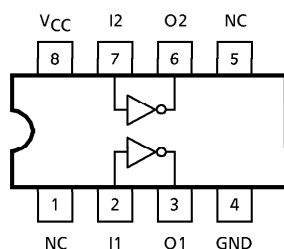


SOP8-P-225-1.27

Weight

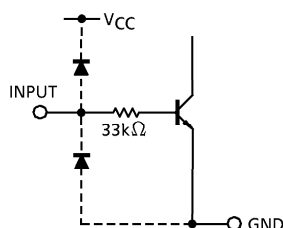
DIP8-P-300-2.54 : 0.52g (Typ.)
SOP8-P-225-1.27 : 0.08g (Typ.)

PIN CONNECTION (TOP VIEW)

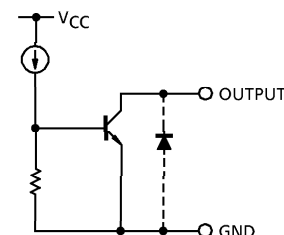


OUTPUT-INPUT EQUIVALENT CIRCUIT

Equivalent of input



Equivalent of output



(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}	7.0	V
Output Sustaining Voltage	V _{CE} (SUS)	8.0	V
Output Current	I _{OUT}	200	mA / ch
Input Voltage	V _{IN}	V _{CC}	V
Power Dissipation	TD62300P	P _D	900
	TD62300F		480 (Note)
Operating Temperature	T _{opr}	0 ~ 70	°C
Storage Temperature	T _{stg}	- 55 ~ 150	°C

(Note) On Glass Epoxy (20 × 20 × 1.6mm Cu 50%)

RECOMMENDED OPERATING CONDITIONS (Ta = 0~70°C)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V _{CC}		1.0	—	6.5	V
Output Sustaining Voltage	V _{CE} (SUS)		—	—	8	V
Output Current	I _{OUT}		—	—	150	mA
Input Voltage	V _{IN}		0	—	V _{CC}	V
Power Dissipation	TD62300P	P _D	—	—	430	mW
	TD62300F	(Note)	—	—	230	

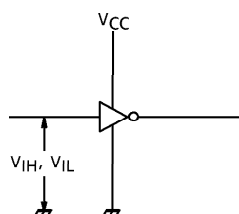
(Note) On Glass Epoxy (20 × 20 × 1.6mm Cu 50%)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

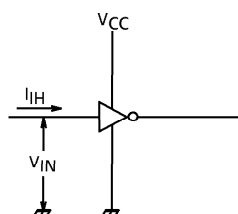
CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Voltage	"H" Level	V _{IH}	1	0.85	—	—	V
	"L" Level	V _{IL}	1	—	—	0.45	
Input Current	"H" Level	I _{IH}	2	V _{IN} = 0.85V	—	4.9	μA
Output Current	"H" Level	I _{OH}	3	V _{CC} = V _{OUT} = 5.0V	—	10	μA
Output Voltage	"L" Level	V _{OL}	4	V _{CC} = 1.4V, I _{OUT} = 140mA	—	0.2	0.6
Supply Current	I _{CC} (ON)	5	V _{CC} = 1.4V, V _{IN} = 0.85V	—	6.4	9.0	mA
	I _{CC} (OFF)		V _{CC} = 5.0V, V _{IN} = 0V	—	—	1.0	μA
Turn-On Delay	t _{ON}	6	V _{CC} = 1.7V, R _L = 10Ω	—	0.1	—	μs
Turn-Off Delay	t _{OFF}		C _L = 15pF	—	2.3	—	μs

TEST CIRCUIT

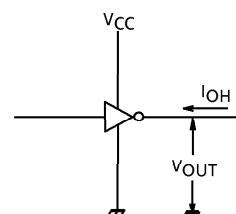
1. V_{IH} , V_{IL}



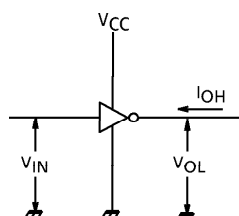
2. I_{IH}



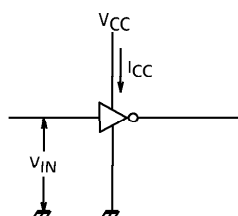
3. I_{OH}



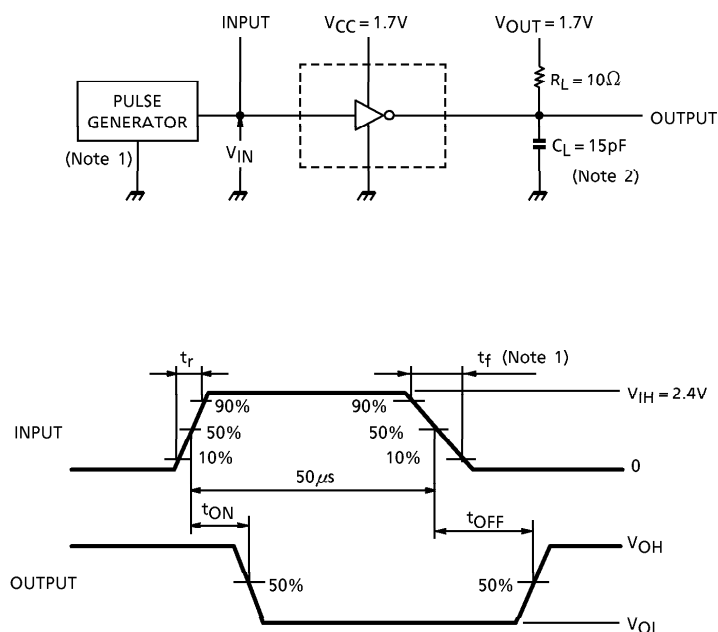
4. V_{OL}



5. $I_{CC(ON)}$, $I_{CC(OFF)}$



6. t_{ON} , t_{OFF}

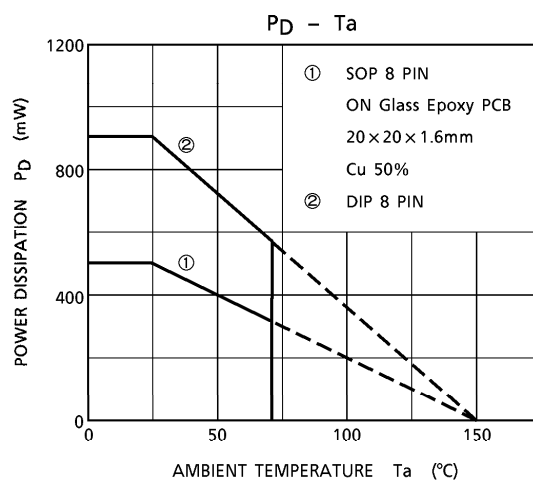
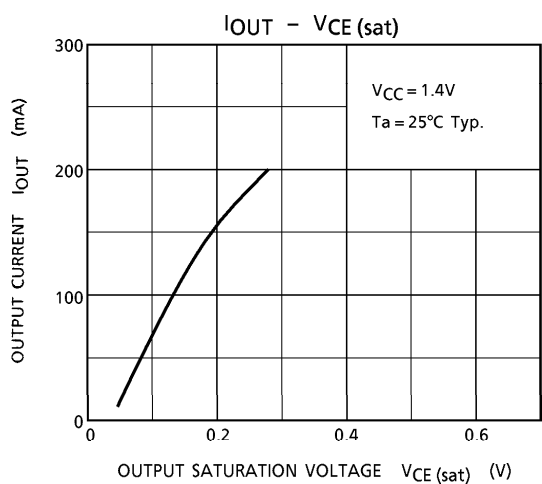
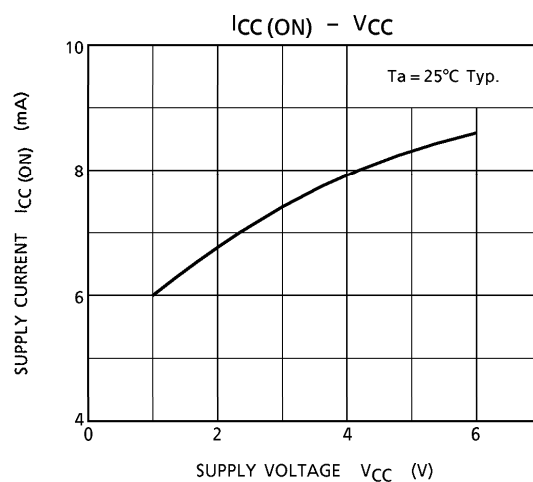
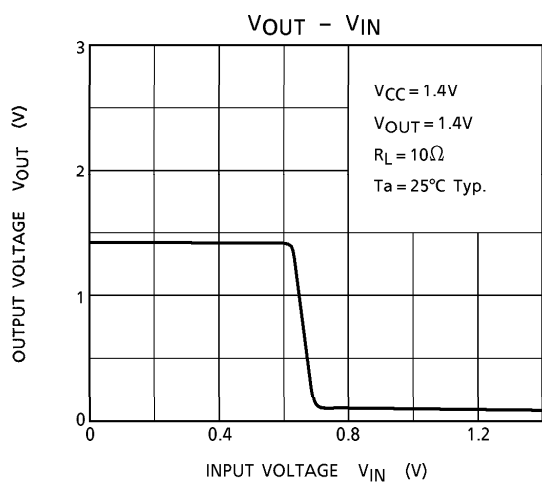


(Note 1) Pulse Width $50\mu s$
Duty Cycle 10%
Output Impedance 50Ω
 $t_r \leq 5ns$, $t_f \leq 10ns$

(Note 2) C_L includes probe and jig capacitance.

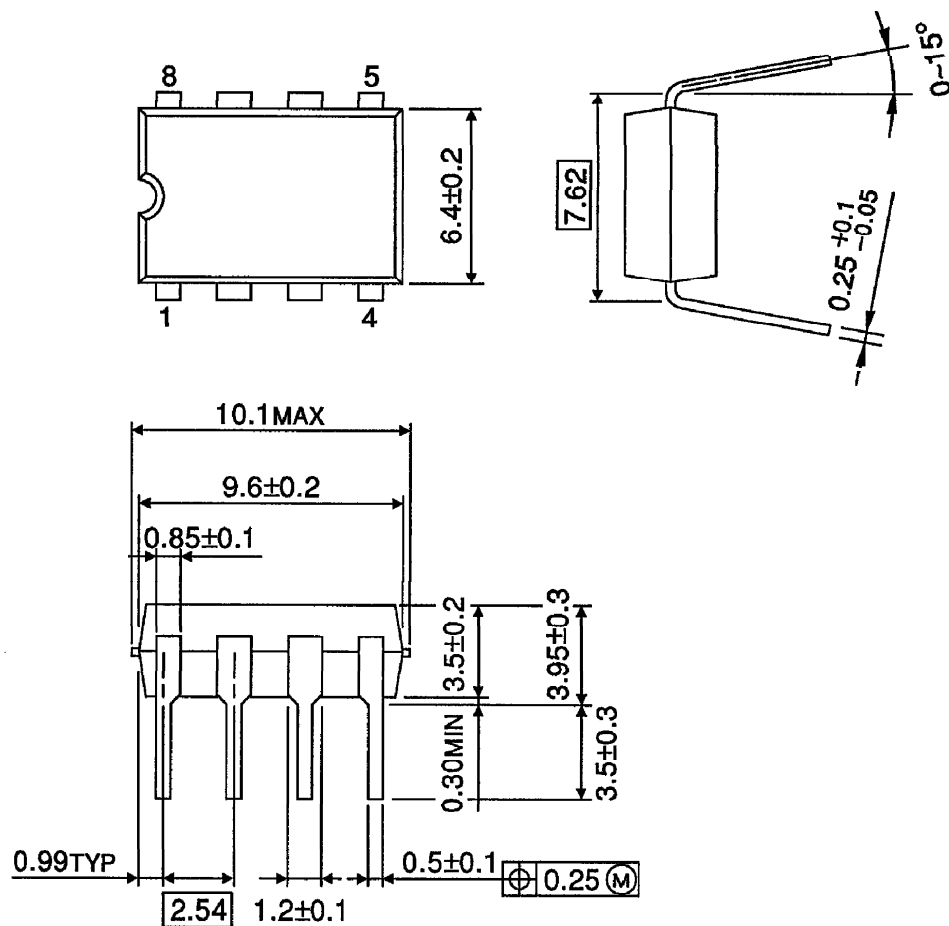
PRECAUTIONS for USING

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
DIP8-P-300-2.54

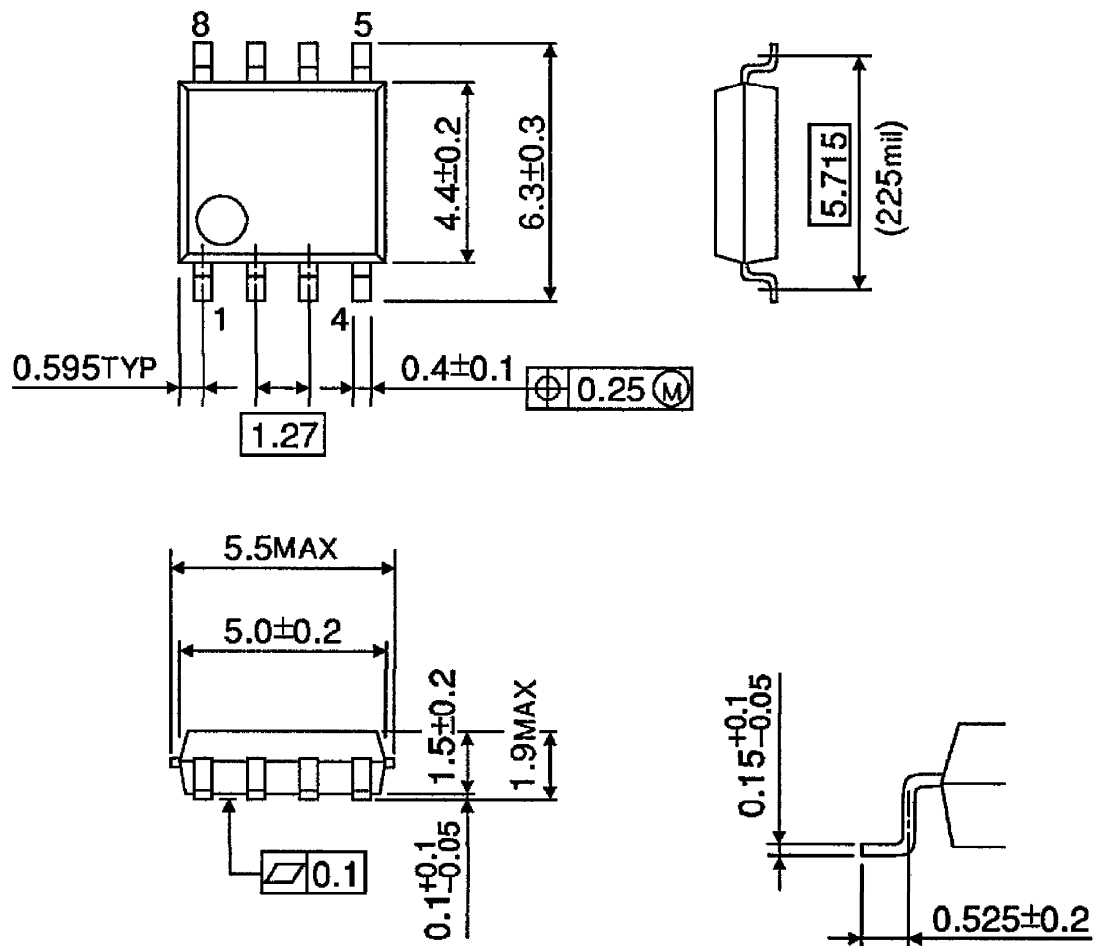
Unit : mm



Weight : 0.52g (Typ.)

OUTLINE DRAWING
SOP8-P-225-1.27

Unit : mm



Weight : 0.08g (Typ.)