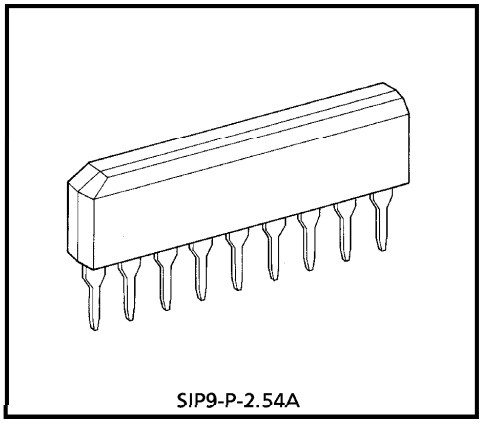
TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62551S, TD62553S, TD62554S, TD62555S

4CH SINGLE DRIVER : COMMON EMITTER

The TD62551S are comprised of four NPN transistor arrays.
Applications include relay, hammer, lamp and display (LED) drivers.

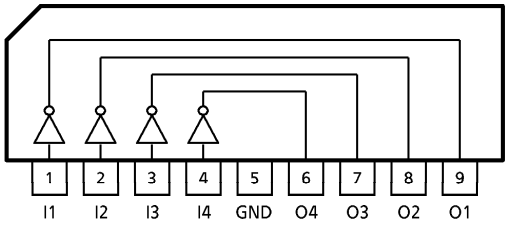


Weight : 0.92g (Typ.)

FEATURES

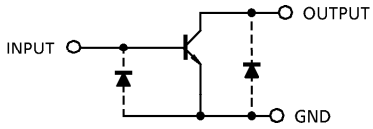
- Output current (single output) 150mA (Max.)
- High sustaining voltage output 25V (Min.)
- Low saturation voltage $V_{CE\ (sat)} = 0.5V$ @$I_{OUT} = 50mA$
- Inputs compatible with various types of logic.
- TD62551S : External
- TD62553S : $R_{IN} = 2.7k\Omega$ ..... TTL, 5V CMOS
- TD62554S : $R_{IN} = 10.5k\Omega$ .... 6~15V PMOS, CMOS
- TD62555S : $R_{IN} = 20k\Omega$ ..... 12~24V PMOS
- Package type-S : SIP-9 pin

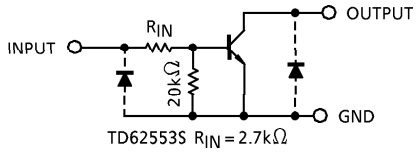
PIN CONNECTION



SCHEMATICS (EACH DRIVER)

TD62551S





TD62553S $R_{IN} = 2.7k\Omega$
TD62554S $R_{IN} = 10.5k\Omega$
TD62555S $R_{IN} = 20k\Omega$

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

961001EBA2

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collecter-Emitter Voltage	V_{CEO}	25	V
Collecter-Base Voltage	V_{CBO}	35	V
Collector Current	I_C	150	mA / ch
Input Voltage	V_{IN} (Note 1)	20	V
Input Current	I_{IN} (Note 2)	10	mA
Power Dissipation	P_D (Note 3)	0.75	W
Operating Temperature	T_{opr}	−40~85	°C
Storage Temperature	T_{stg}	−55~150	°C

(Note 1) Except TD62551S
(Note 2) Only TD62551S
(Note 3) Delated above 25°C in the proportion of 6.0mW / °C.

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

CHARACTERISTIC		SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collecter-Emitter Voltage		V_{CEO}	—	0	—	25	V
Collecter-Base Voltage		V_{CBO}	—	0	—	35	V
Collector Current	TD62551S TD62553S	I_C	—	0	—	100	mA / ch
	TD62554S			0	—	80	
	TD62555S			0	—	60	
Input Voltage	TD62553S TD62554S TD62555S	V_{IN}	—	0	—	20	V
Input Current	TD62551S	I_{IN}	—	0	—	5	mA
Power Dissipation		P_D	—	—	—	0.27	W

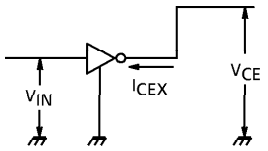
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current		I_{CEX}	1	V_{CE} = 25V, V_{IN} = 0V	—	—	10	μA
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	2	I_{IN} = 0.5mA, I_C = 10mA	—	0.15	0.2	V
				I_{IN} = 2.5mA, I_C = 50mA	—	0.35	0.5	
DC Current Transfer Ratio	(Note 1)	h_{FE}	2	V_{CE} = 5V, I_C = 10mA	60	—	400	—
	(Note 2)				50	—	400	
Input Voltage	TD62553S	$V_{IN\ (ON)}$	3	I_{IN} = 0.5mA, I_C = 10mA	1.7	2.1	2.5	V
	TD62554S				4.4	6.0	7.6	
	TD62555S				7.7	10.7	13.8	
Turn-On Delay		t_{ON}	4	V_{OUT} = 25V, R_L = 210Ω C_L = 15pF	—	100	—	ns
Turn-Off Delay		t_{OFF}			—	500	—	

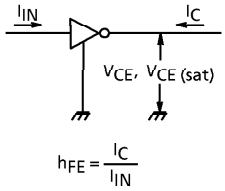
(Note 1) Except TD62551S.
(Note 2) Only TD62551S.

TEST CIRCUIT

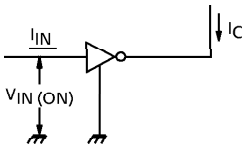
1. I_{CEX}



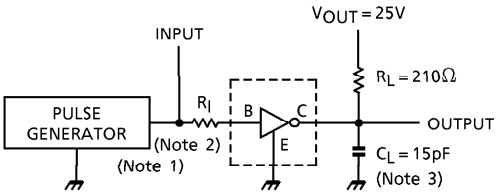
2. h_{FE}, $V_{CE\ (sat)}$

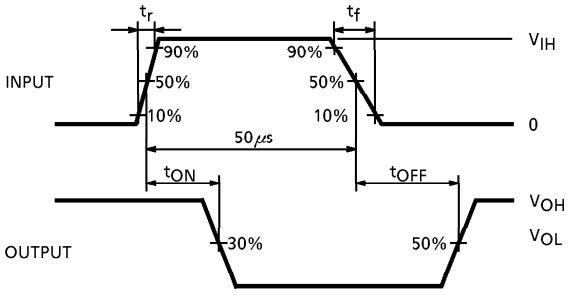


3. $V_{IN\ (ON)}$



4. t_{ON}, t_{OFF}





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

(Note 2) See right.

(Note 3) C_L includes probe and jig capacitance.

INPUT CONDITION

TYPE NUMBER	R_I	V_{IH}
TD62551S	2.7kΩ	3V
TD62553S	0Ω	3V
TD62554S	0Ω	10V
TD62555S	0Ω	14V

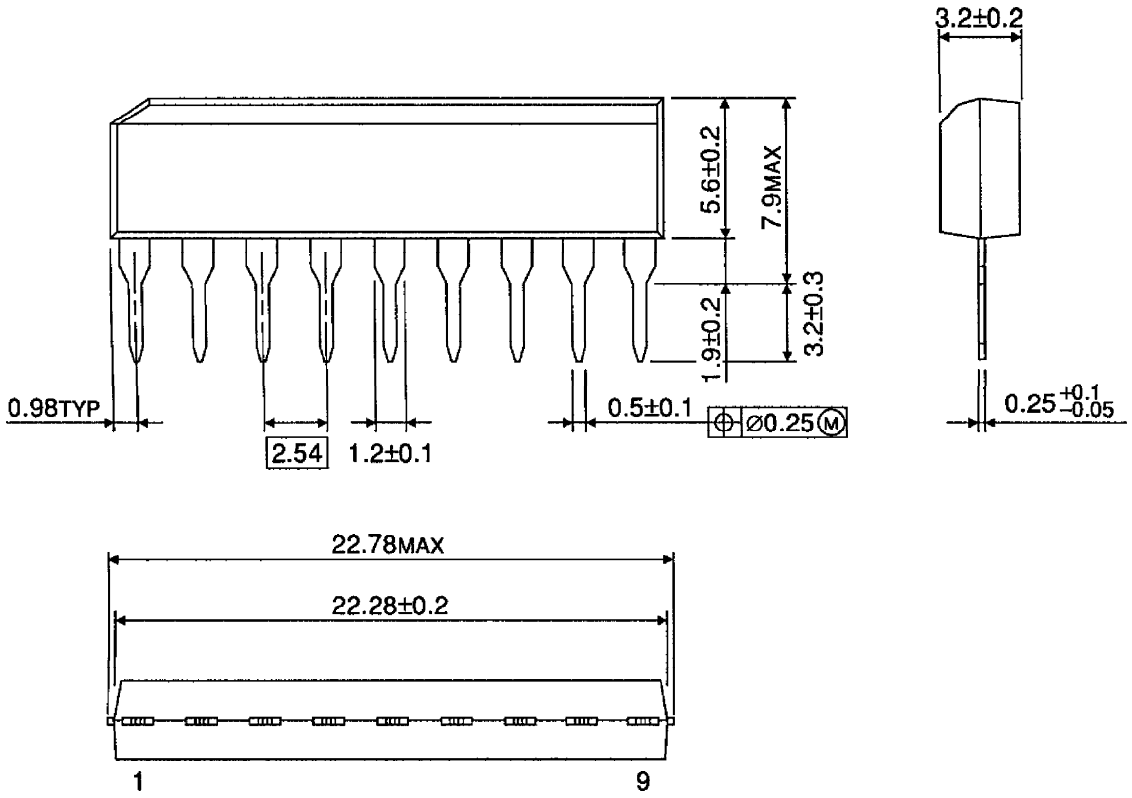
PRECAUTIONS for USING

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

SIP9-P-2.54A

Unit : mm



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