

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62503FB, TD62504FB

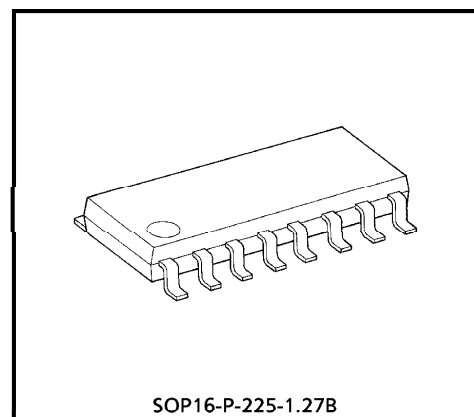
7CH SINGLE DRIVER : COMMON EMITTER

The TD62503FB and TD62504FB are comprised of seven or five NPN transistor arrays.

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

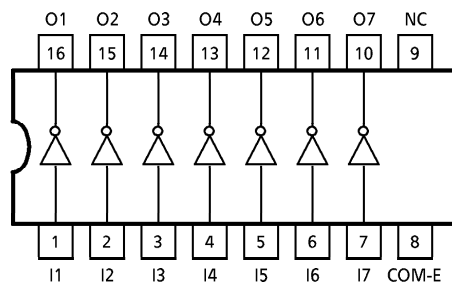
FEATURES

- 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.
- TD62503FB : $R_{IN} = 2.7k\Omega$ TTL, 5V CMOS
- TD62504FB : $R_{IN} = 10.5k\Omega$... 6~15V PMOS, CMOS
- Package type-FB : SOP-16 pin

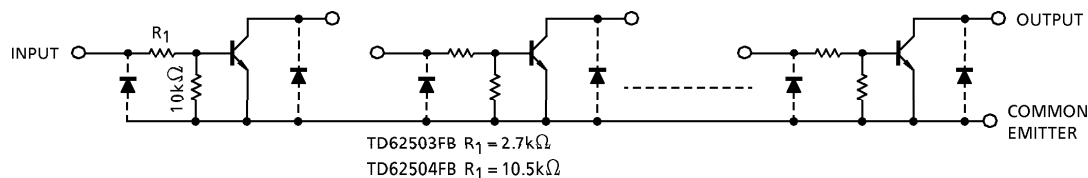


Weight : 0.16g (Typ.)

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)	0.625	W
Operating Temperature	T _{opr}	– 40~85	°C
Storage Temperature	T _{stg}	– 55~150	°C

(Note) On PCB (30×30×1.6mm Cu 50%)

Dedicated above 25°C in the proportion of 5.0mW/°C.

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

CHARACTERISTIC	SYMBOL	TEST 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	V _{IN}	—	0	—	25	V
Power Dissipation	P _D	(Note)	—	—	0.325	W

(Note) On PCB (30×30×1.6mm Cu 50%)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

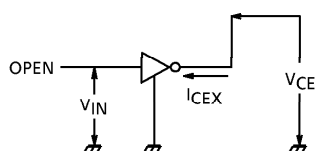
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I _{CEX}	1	V _{CE} = 25V, V _{IN} = 0V	—	—	10	μA
Collector-Emitter Saturation Voltage	V _{CE (sat)}	2	I _{IN} = 1mA, I _C = 10mA	—	—	0.2	V
			I _{IN} = 3mA, I _C = 150mA	—	—	0.8	
DC Current Transfer Ratio	h _{FE}	2	V _{CE} = 10V, I _C = 10mA	50	—	—	—
Input Voltage (Output On)	V _{IN (ON)}	3	I _{IN} = 1mA, I _C = 10mA	2.4	3.4	4.2	V
				7.5	11.5	15	
Input Voltage (Output Off)	V _{IN (OFF)}	—	—	0.6	0.8	1.0	V
				1.1	1.6	1.9	
Turn-On Delay	t _{ON}	4	V _{OUT} = 35V, R _L = 220Ω C _L = 15pF	—	50	—	ns
Turn-Off Delay	t _{OFF}			—	200	—	

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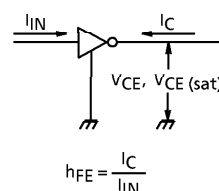
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TEST CIRCUIT

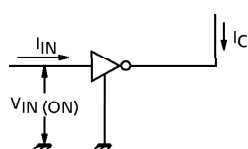
1. I_{CEX}



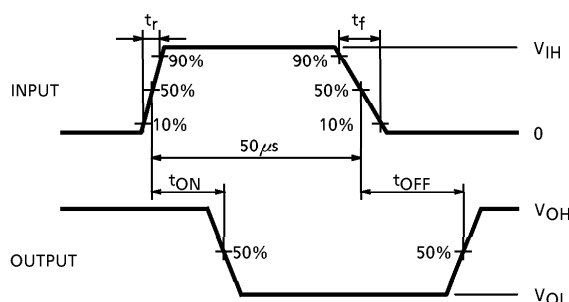
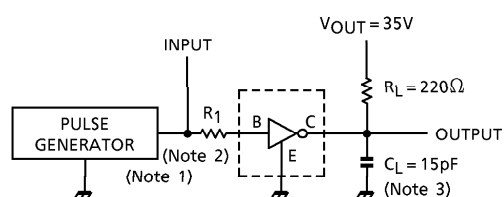
2. h_{FE} , $V_{CE(sat)}$



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.

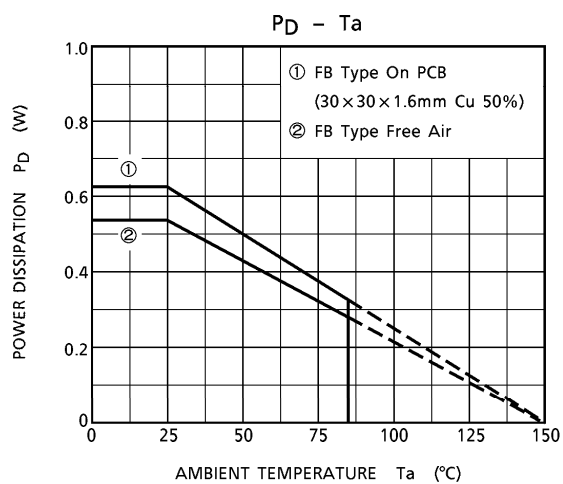
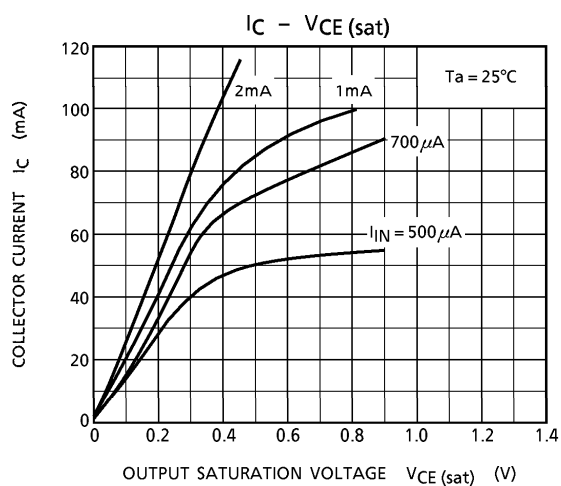
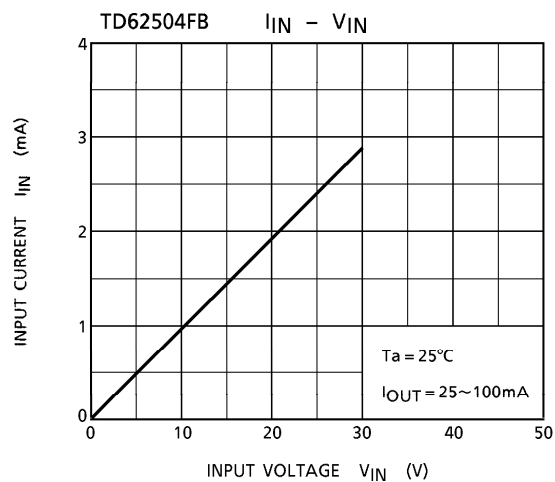
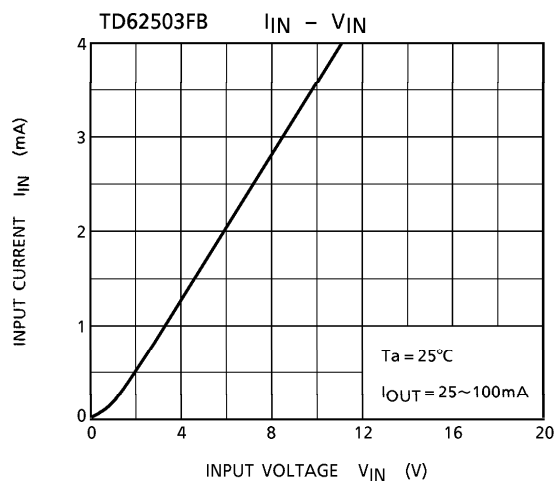
INPUT CONDITION

TYPE NUMBER	R_{IN}	V_{IH}
TD62503FB	0Ω	3V
TD62504FB	0Ω	10V

(Note 3) C_L includes probe and jig capacitance.

PRECAUTIONS for USING

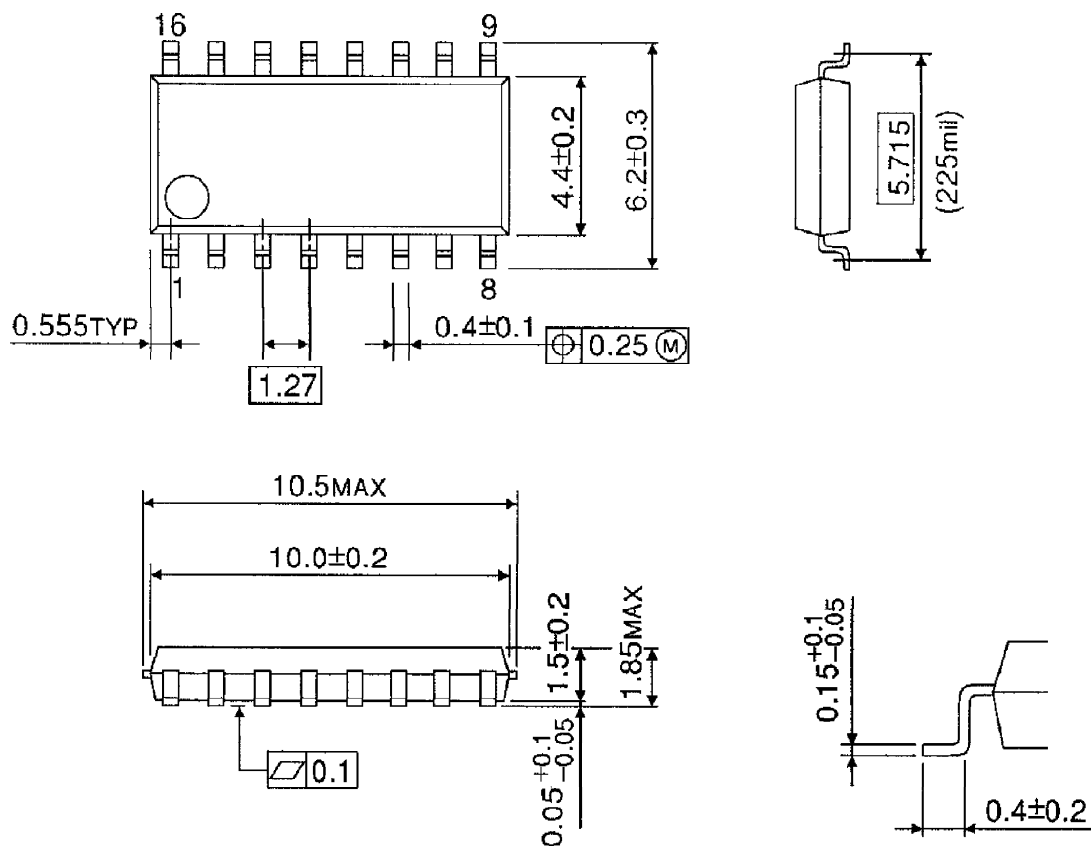
Utmost care is necessary in the design of the output line, V_{CC} and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.



OUTLINE DRAWING

SOP16-P-225-1.27B

Unit : mm



Weight : 0.16g (Typ.)