

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62583AP, TD62583F, TD62583AF

8CH SINGLE DRIVER

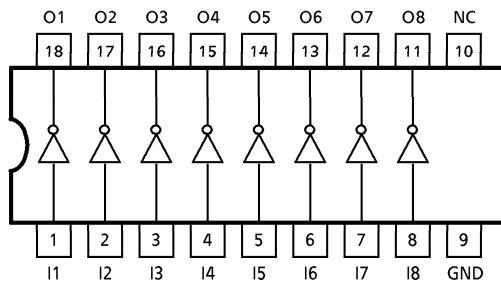
The TD62583AP/F/AF have a 2.7kΩ series base resistor, and thus allows operation directly with TTL or CMOS operating at supply voltage of 5V.

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

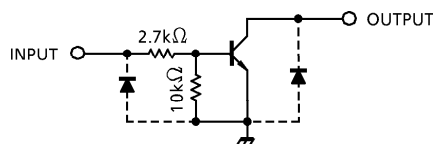
FEATURES

- Output current (single output) 50mA (Max.)
- High sustaining voltage output 35V (Min.) (TD62583F)
50V (Min.) (TD62583AP / AF)
- Low saturation voltage $V_{CE(sat)} = 0.4V @ I_C = 16mA$
- Inputs compatible with TTL, 5V CMOS
- Package type-AP : DIP-18 pin
- Package type-F, AF : SOP-18 pin

PIN CONNECTION (TOP VIEW)



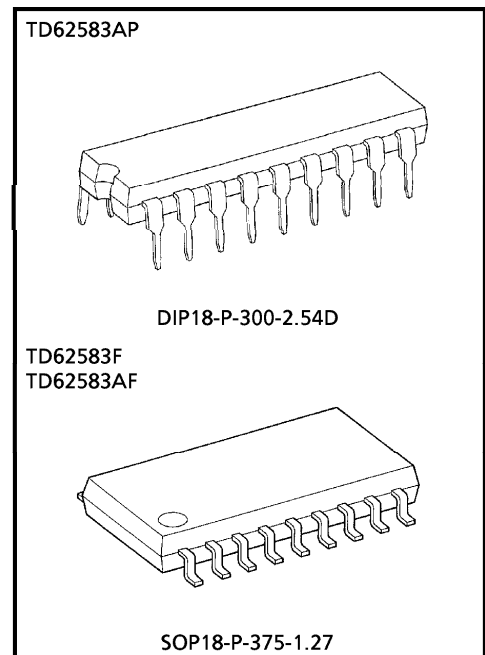
SCHEMATICS (EACH DRIVER)



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

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

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Sustaining Voltage	AP, AF	V _{CEO}	50	V
	F		35	
Output Current		I _{OUT}	50	mA / ch
Input Voltage		V _{IN}	10	V
Power Dissipation	AP	P _D	1.47	W
	F, AF		0.96	
Operating Temperature		T _{opr}	-40~85	°C
Storage Temperature		T _{stg}	-55~150	°C

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

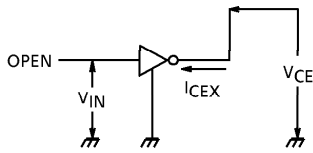
CHARACTERISTIC		SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Output Sustaining Voltage	AP, AF	V _{CEO}	—	0	—	50	V
	F		—	0	—	35	
Output Current		I _{OUT}	—	0	—	30	mA / ch
Input Voltage		V _{IN}	—	0	—	7	V
	Output On	V _{IN (ON)}	—	3.5	—	7	
Power Dissipation	AP	P _D	—	—	—	0.52	W
	F, AF		—	—	—	0.4	

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

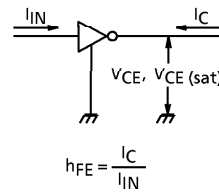
CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	AP, AF	I _{CEX}	1	V _{CE} = 50V	—	—	10	μA
	F			V _{CE} = 35V				
Output Saturation Voltage	V _{CE (sat)}		2	I _C = 16mA, I _{IN} = 0.3mA	—	0.2	0.4	V
				I _C = 30mA, I _{IN} = 0.45mA				
DC Current Transfer Ratio		h _{FE}	2	V _{CE} = 4V, I _C = 30mA	70	130	—	—
Input Current		I _{IN (ON)}	3	V _{IN} = 2.5V, I _C = 16mA	—	0.65	1.7	mA
Turn-On Delay	F	t _{ON}	4	V _{OUT} = 35V, R _L = 0.87kΩ	—	0.1	—	μs
	AP, AF			V _{OUT} = 50V, R _L = 1.25kΩ				
Turn-Off Delay	F	t _{OFF}		V _{OUT} = 35V, R _L = 0.87kΩ	—	0.5	—	
	AP, AF			V _{OUT} = 50V, R _L = 1.25kΩ				

TEST CIRCUIT

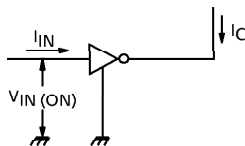
1. I_{CEX}



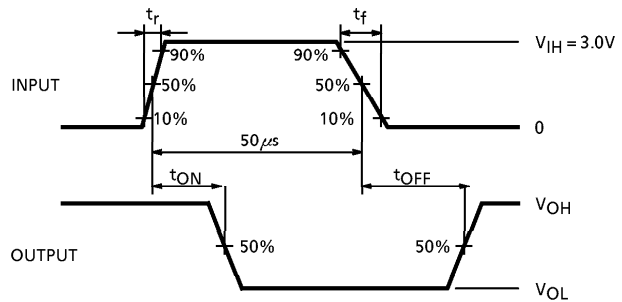
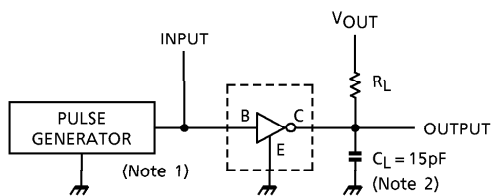
2. h_{FE} , $V_{CE(sat)}$



3. $V_{IN(ON)}$



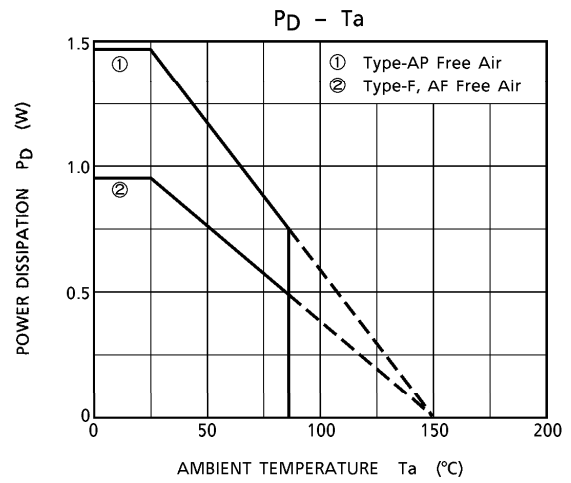
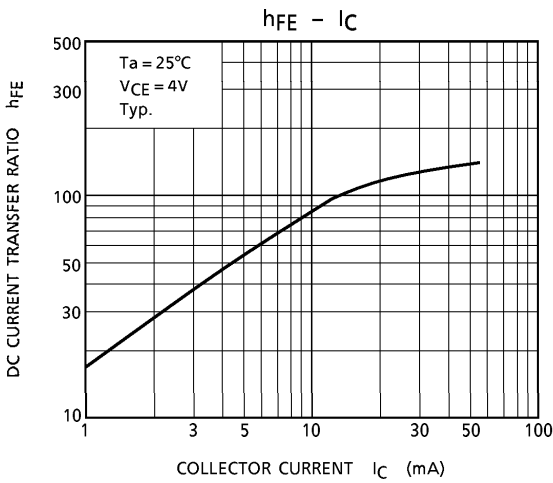
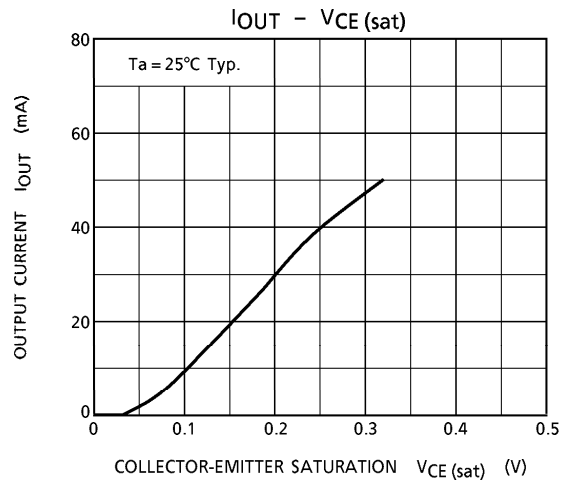
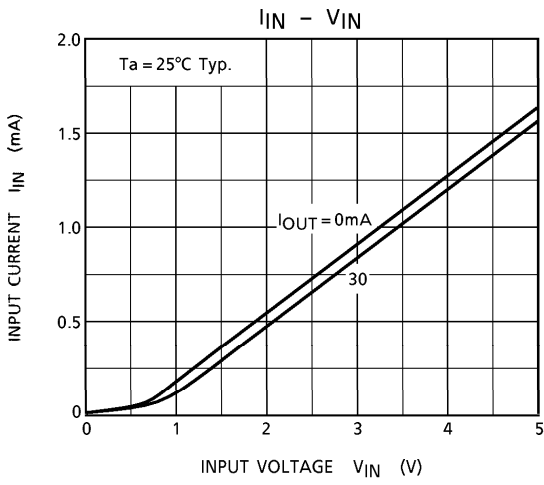
4. t_{ON} , t_{OFF}



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

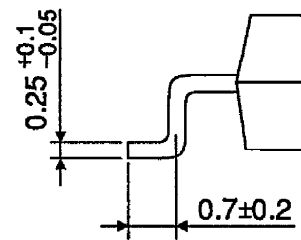
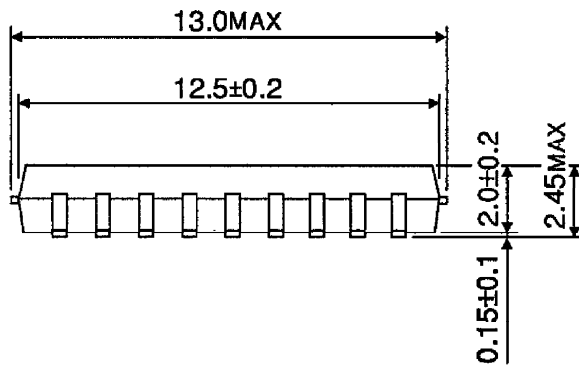
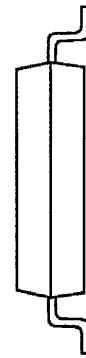
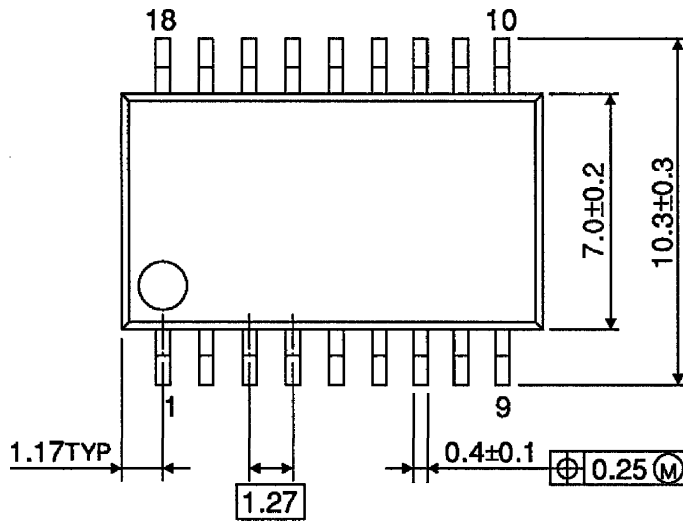
PRECAUTIONS for USING

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
SOP18-P-375-1.27

Unit : mm



Weight : 0.41g (Typ.)