

TD62583APG, TD62583AFG

8ch Single Driver

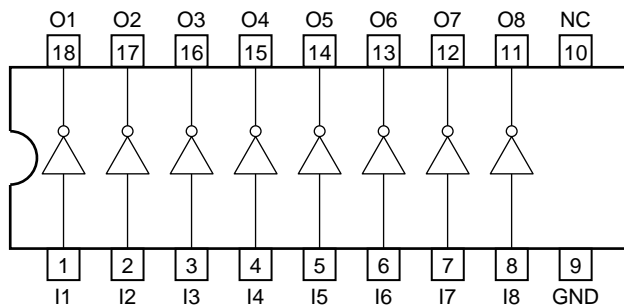
The TD62583APG/AFG have a 2.7 k Ω series base resistor, and thus allows operation directly with TTL or CMOS operating at supply voltage of 5 V.

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

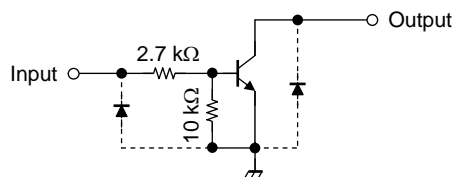
Features

- Output current (single output) 50 mA (max)
- High sustaining voltage output 50 V (min) (TD62583APG/AFG)
- Low saturation voltage $V_{CE(sat)} = 0.4 \text{ V} @ I_C = 16 \text{ mA}$
- Inputs compatible with TTL, 5 V CMOS
- Package type-APG: DIP-18 pin
- Package type-AFG: SOP-18 pin

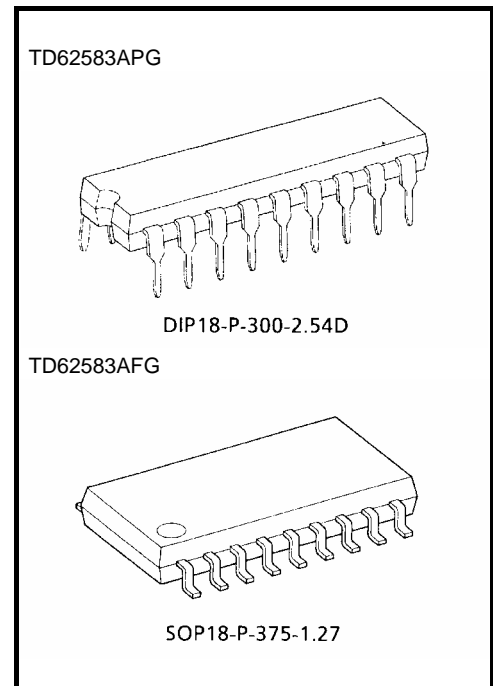
Pin Connection (top view)



Schematics (each driver)



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



Weight

DIP18-P-300-2.54D : 1.47 g (typ.)

SOP18-P-375-1.27 : 0.41 g (typ.)

Maximum Rating (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Output sustaining voltage		V _{CEO}	50	V
Output current		I _{OUT}	50	mA/ch
Input voltage		V _{IN}	10	V
Power dissipation	APG	P _D	1.47	W
	AFG		0.96	
Operating temperature		T _{opr}	−40 to 85	°C
Storage temperature		T _{stg}	−55 to 150	°C

Recommended Operating Conditions (Ta = −40 to 85°C)

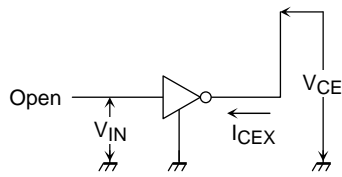
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Output sustaining voltage		V _{CEO}	—	0	—	50	V
Output current		I _{OUT}	—	0	—	30	mA/ch
Input voltage		V _{IN}	—	0	—	7	V
	Output on	V _{IN (ON)}	—	3.5	—	7	
Power dissipation	APG	P _D	—	—	—	0.52	W
	AFG		—	—	—	0.4	

Electrical Characteristics (Ta = 25°C)

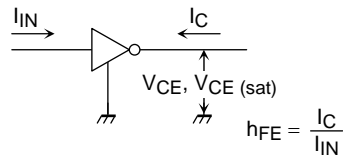
Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Output leakage current	I _{CEX}	1	V _{CE} = 50 V, V _{IN} = 0 V	—	—	10	μA
Output saturation voltage	V _{CE (sat)}	2	I _C = 16 mA, I _{IN} = 0.3 mA	—	0.2	0.4	V
			I _C = 30 mA, I _{IN} = 0.45 mA	—	0.3	0.7	
DC current transfer ratio	h _{FE}	2	V _{CE} = 4 V, I _C = 30 mA	70	130	—	—
Input current	I _{IN (ON)}	3	V _{IN} = 2.5 V, I _C = 16 mA	—	0.65	1.7	mA
Turn-on delay	t _{ON}	4	V _{OUT} = 50 V, R _L = 1.25 kΩ	—	0.1	—	μs
Turn-off delay	t _{OFF}	4	V _{OUT} = 50 V, R _L = 1.25 kΩ	—	0.5	—	μs

Test Circuit

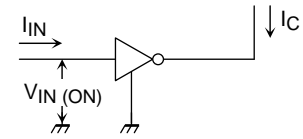
1. I_{CEX}



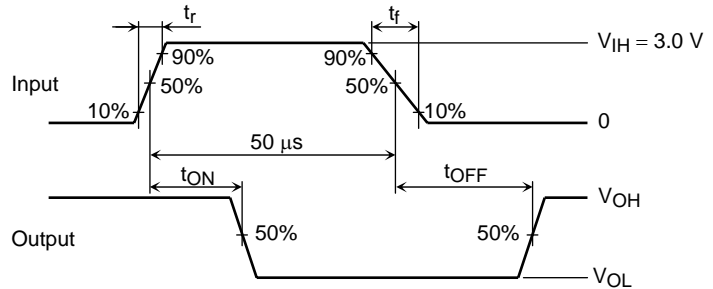
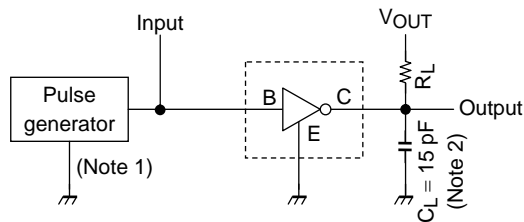
2. h_{FE} , $V_{CE(sat)}$



3. $V_{IN(ON)}$



4. t_{ON} , t_{OFF}



Note 1: Pulse width 50 μ s, duty cycle 10%, output impedance 50 Ω , $t_r \leq 5$ ns, $t_f \leq 10$ ns

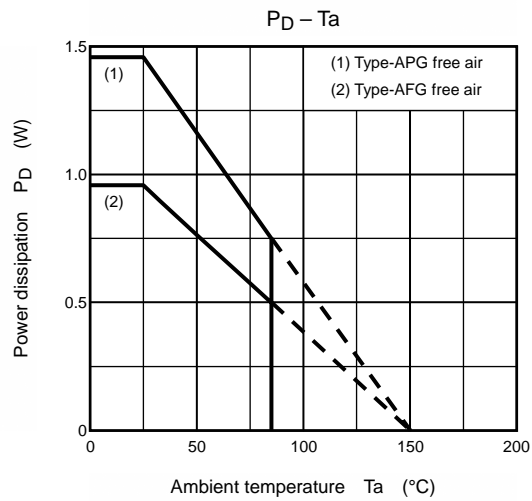
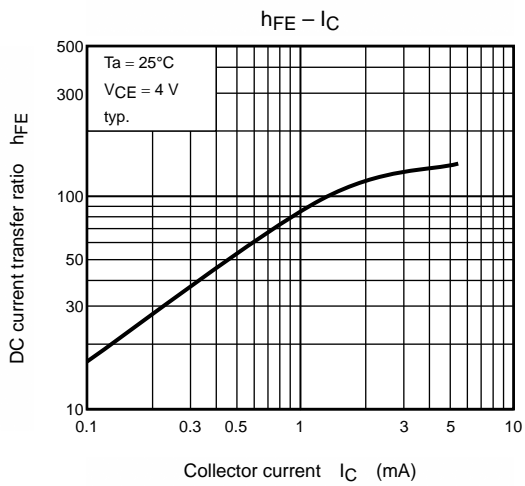
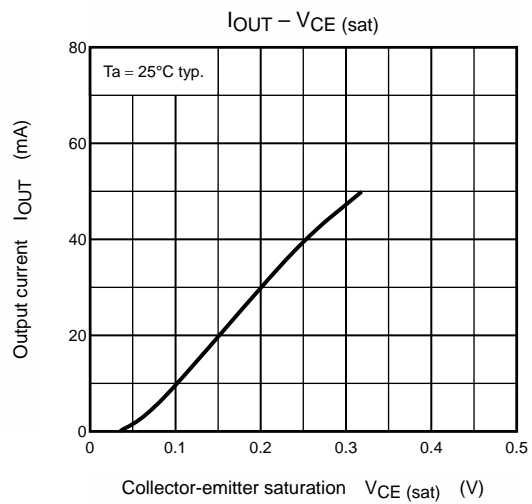
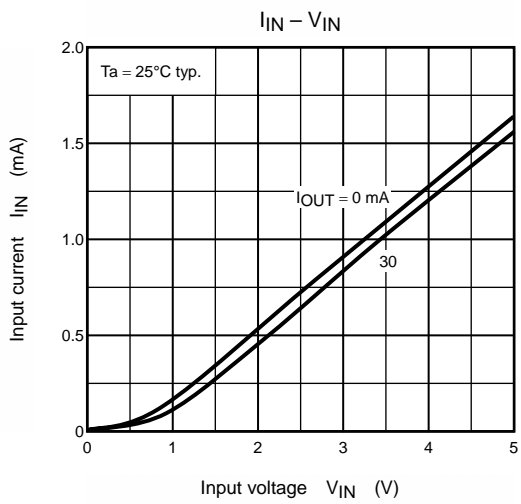
Note 2: C_L includes probe and jig capacitance

Precautions for Using

This IC does not integrate protection circuits such as overcurrent and overvoltage protectors.

Thus, if excess current or voltage is applied to the IC, the IC may be damaged. Please design the IC so that excess current or voltage will not be applied to the IC.

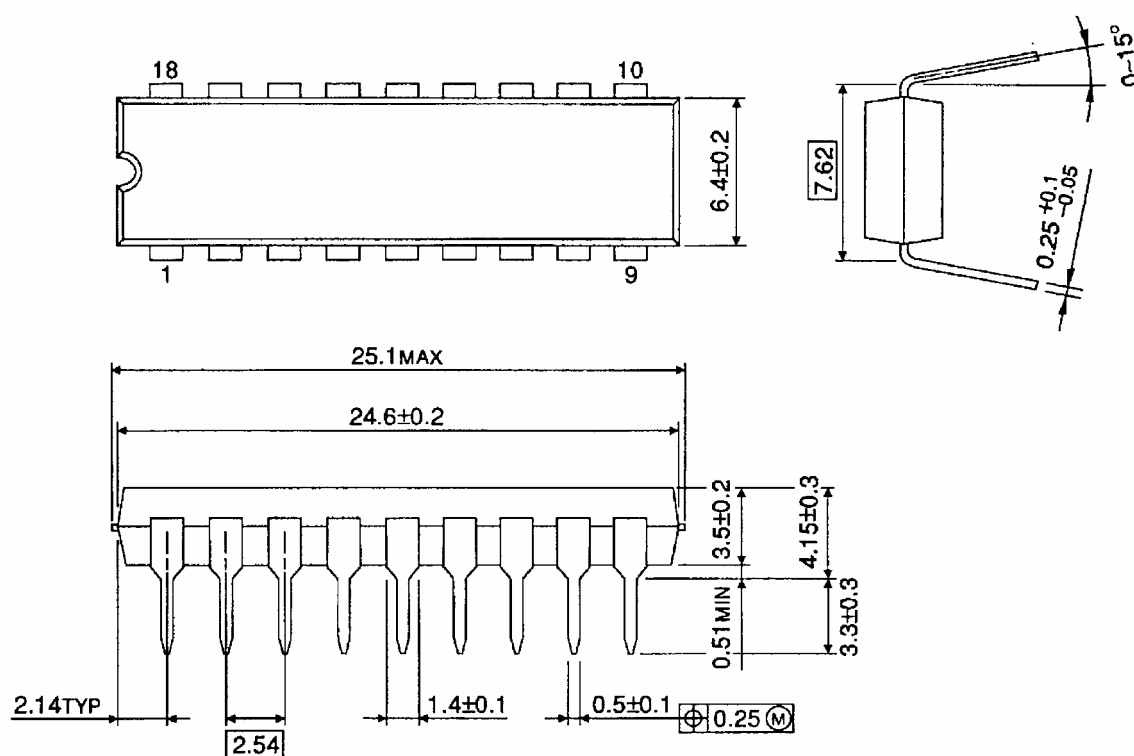
Utmost care is necessary in the design of the output line, V_{CC} and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.



Package Dimensions

DIP18-P-300-2.54D

Unit : mm

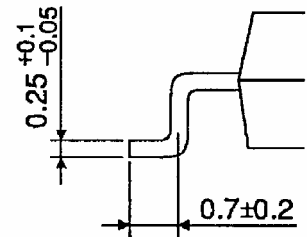
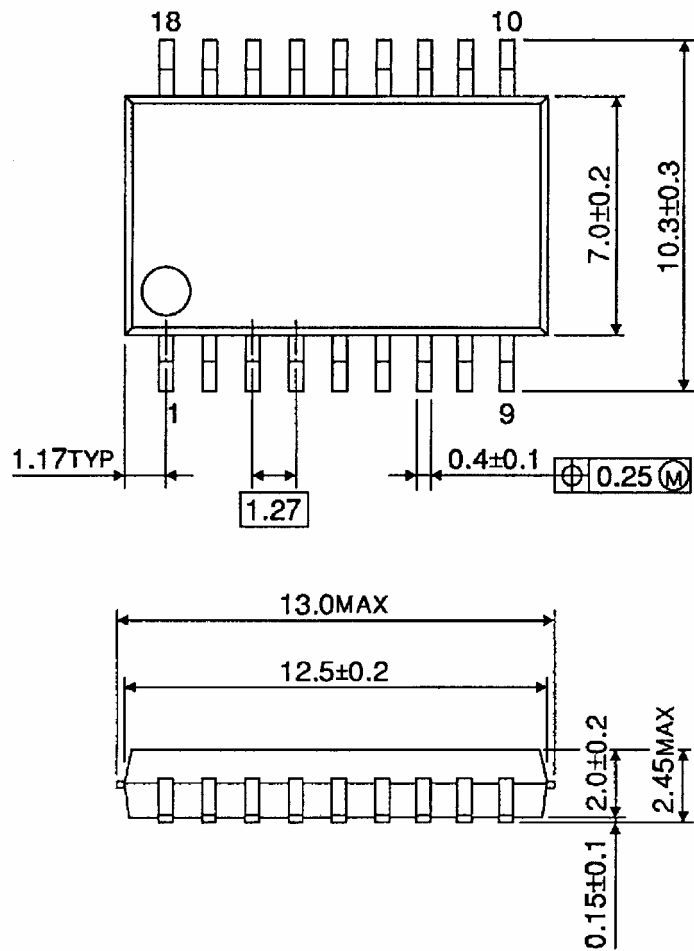


Weight: 1.47 g (typ.)

Package Dimensions

SOP18-P-375-1.27

Unit : mm



Weight: 0.41 g (typ.)

About solderability, following conditions were confirmed

- Solderability

(1) Use of Sn-63Pb solder Bath

- solder bath temperature = 230°C
- dipping time = 5 seconds
- the number of times = once
- use of R-type flux

(2) Use of Sn-3.0Ag-0.5Cu solder Bath

- solder bath temperature = 245°C
- dipping time = 5 seconds
- the number of times = once
- use of R-type flux

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