

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62785P, TD62785F

8CH SOURCE DRIVER

The TD62785P, TD62785F are eight Channel Non-Inverting Source current transistor Array.

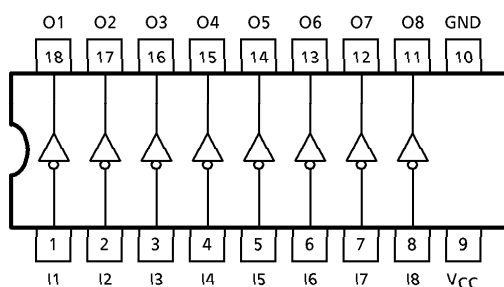
All units feature input pull-up resistors and output pull-down resistors. These device are specifically designed for multiplexed digit driving of eight digit common-anode LED and also can be employed as a source drivers for multiplexed LED displays using with the TD62381P, TD62381F at standard supply voltage, 5V.

Applications include relay, hammer and lamp drivers.

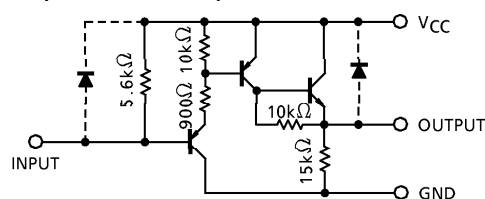
FEATURES

- Low saturation voltage $V_{CE(sat)} = 1.35V \text{ MAX.}$
@ $I_{OUT} = -500mA$
- Output current (single output) $I_{OUT} = -500mA \text{ MIN.}$
- Input pull-up resistor $R_{IN} = 5.6k\Omega \text{ Typ.}$
- Output pull-down resistor $R_{IN} = 15k\Omega \text{ Typ.}$
- Low level active inputs
- Package Type-P : DIP-18pin
- Package Type-F : SOP-18pin

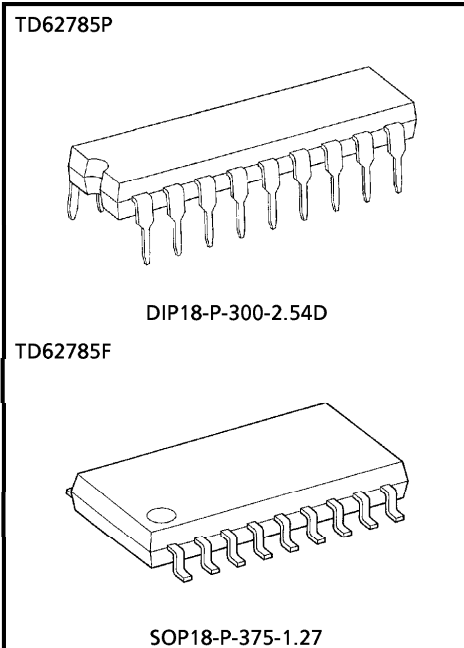
PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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



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

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MAXIMUM RATING (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V _{CC}	7.0	V
Output Voltage		V _{OUT}	V _{CC}	V
Output Current		I _{OUT}	– 500	mA / ch
Input Voltage		V _{IN}	V _{CC}	V
Input Current		I _{IN}	– 10	mA
Power Dissipation	P	P _D (Note 1)	1.47	W
	F		0.96	
Operating Temperature		T _{opr}	– 40~85	°C
Storage Temperature		T _{stg}	– 55~150	°C

(Note 1) Delated above 25°C in the proportion of 11.7mW/°C (P-Type), 7.7mW/°C (F-Type).

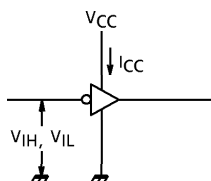
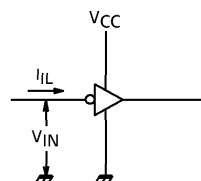
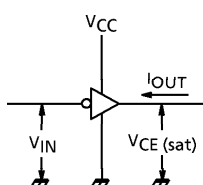
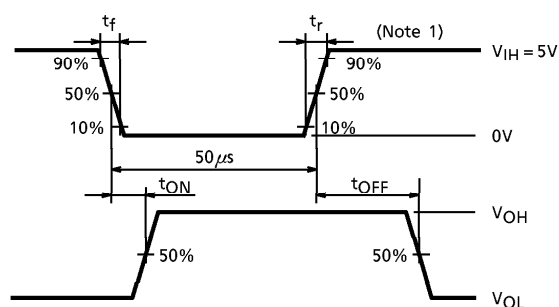
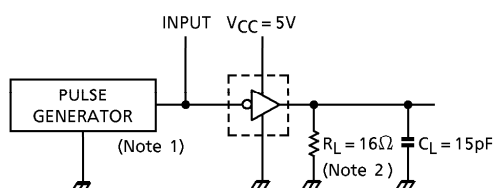
RECOMMENDED OPERATING CONDITIONS (Ta = – 40~85°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Supply Voltage		V _{CC}	—		4.5	5.0	5.5	V
Output Voltage		V _{OUT}	—		0	—	– V _{CC}	V
Output Current	P	I _{OUT}	DC 1 Circuit, Ta = 25°C		0	—	– 400	mA / ch
	F				0	—	– 400	
	P				T _{pw} ≤ 25ms 8 Circuits On Ta = 85°C T _j = 120°C	Duty = 10%	0	
	F		Duty = 50%	0		—	– 67	
			Duty = 10%	0		—	– 248	
			Duty = 50%	0		—	– 38	
Input Voltage		V _{IN}	—		0	—	V _{CC}	V
	Output On	V _{IN} (ON)	—		0	—	0.8	V
	Output Off	V _{IN} (OFF)	—		V _{CC} – 1.0	—	V _{CC}	
Power Dissipation	P	P _D	—		—	—	0.52	W
	F		—		—	—	0.35	

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CIR- CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Input Voltage	“H” Level	V _{IH}	1	—		V _{CC} – 1.0	—	—	V
	“L” Level	V _{IL}		—		—	—	0.8	
Input Current	“L” Level	I _{IL}	2	V _{CC} = 5.5V, V _{IN} = 0.8V		—	– 1.5	– 2.3	mA
Input Pull-Up Resistor		R _{IP}	—	—		—	5.6	—	kΩ
Output Pull-Down Resistor		R _{OP}	—	—		—	15	—	kΩ
Output Voltage	“H” Level	V _{OH}	3	V _{CC} = 0V GND = – 4.5V V _{IN} = GND	I _{OUT} = – 500mA	—	—	V _{CC} – 1.35	V
					I _{OUT} = – 350mA	—	—	V _{CC} – 1.30	
Supply Current		I _{CC} (ON)	1	V _{CC} = 55V, V _{IN} = GND		—	—	12.5	mA / ch
		I _{CC} (OFF)		V _{CC} = 55V, V _{IN} = OPEN		—	—	10	μA
Turn-On Delay		t _{ON}	4	V _{CC} = 5V, R _L = 16Ω		—	0.1	—	μs
Turn-Off Delay		t _{OFF}		C _L = 15pF		—	3.5	—	μs

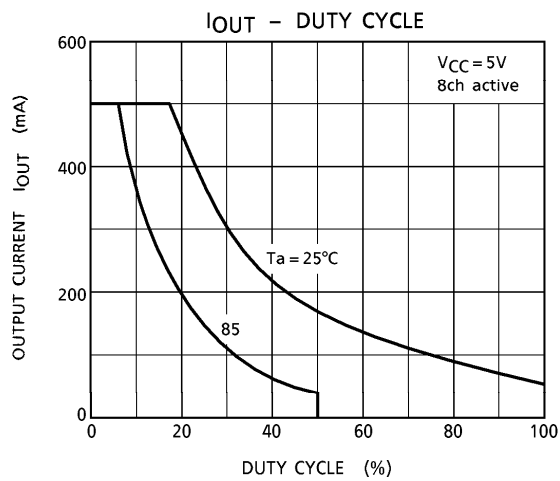
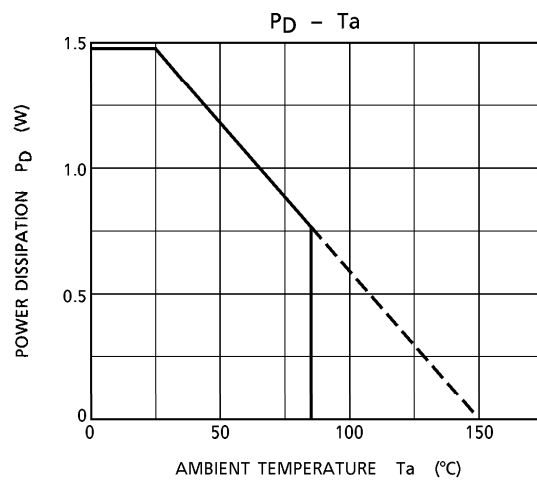
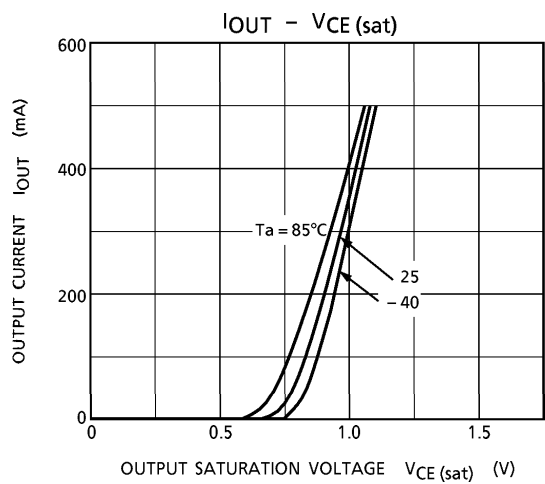
TEST CIRCUIT

 1. V_{IH} , V_{IL} , I_{CC}

 2. I_{IL}

 3. $V_{CE(sat)}$

 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

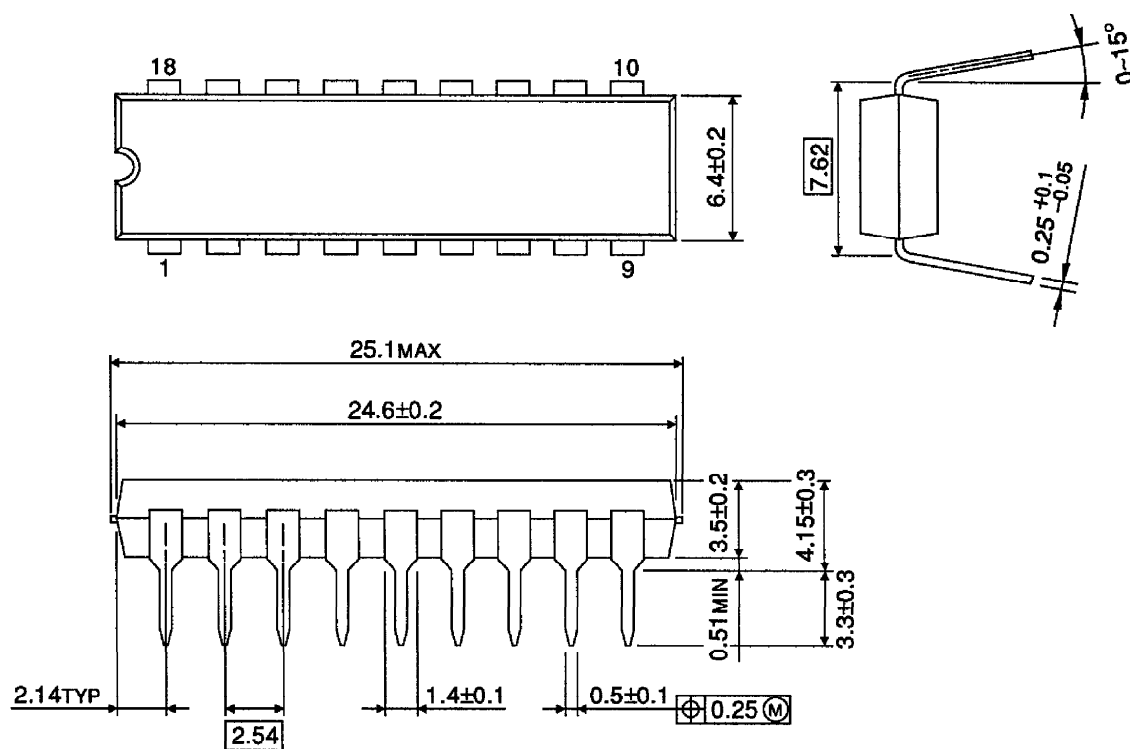
PRECAUTIONS for USING

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
DIP18-P-300-2.54D

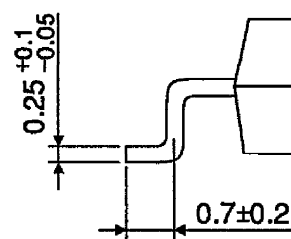
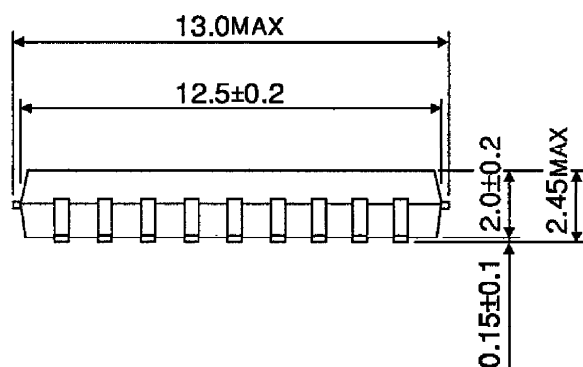
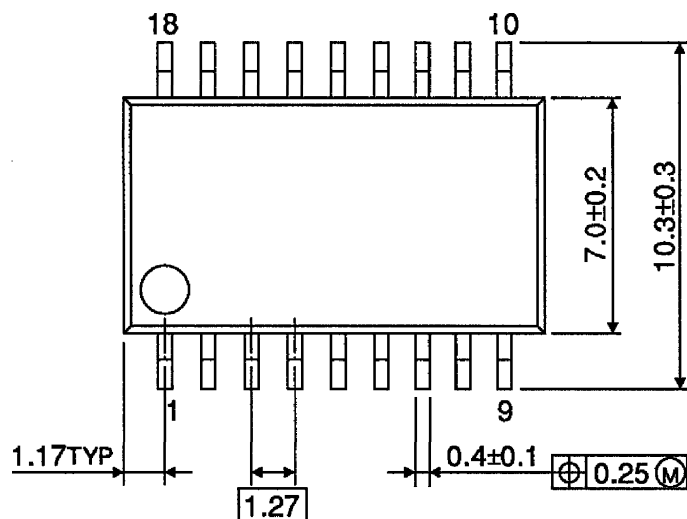
Unit : mm



Weight : 1.47g (Typ.)

OUTLINE DRAWING
SOP18-P-375-1.27

Unit : mm



Weight : 0.41g (Typ.)