

TD62785P, TD62785F

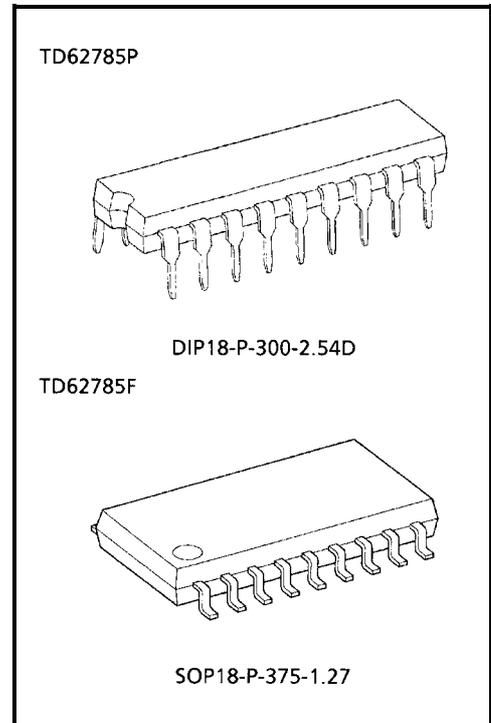
8CH SOURCE DRIVER

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, 5 V. Applications include relay, hammer and lamp drivers.

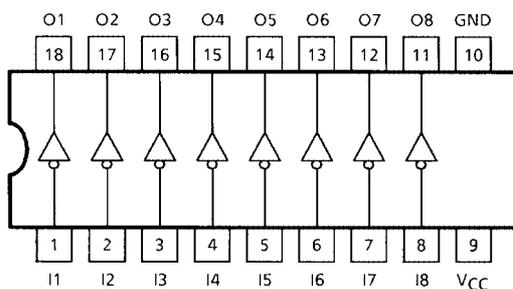
FEATURES

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

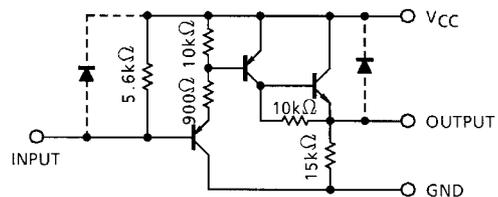


Weight
 DIP18-P-300-2.54D : 1.47 g (Typ.)
 SOP18-P-375-1.27 : 0.41 g (Typ.)

PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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

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 11.7 mW / °C (P-Type), 7.7 mW / °C (F-Type).

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

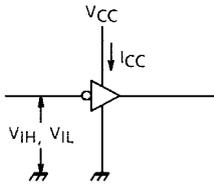
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT	
Supply Voltage		V _{CC}	—	4.5	5.0	5.5	V	
Output Voltage		V _{OUT}	—	0	—	-V _{CC}	V	
Output Current	P	I _{OUT}	DC 1 Circuit, Ta = 25°C	0	—	-400	mA / ch	
	F			0	—	-400		
	P		T _{pw} ≤ 25 ms 8 Circuits On Ta = 85°C Tj = 120°C	Duty = 10%	0	—		-376
				Duty = 50%	0	—		-67
	F			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)

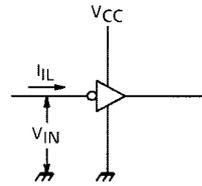
CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Input Voltage	"H" Level	V_{IH}	1	—	$V_{CC} - 1.0$	—	—	V
	"L" Level	V_{IL}		—	—	0.8		
Input Current	"L" Level	I_{IL}	2	$V_{CC} = 5.5 \text{ V}, V_{IN} = 0.8 \text{ V}$	—	-1.5	-2.3	mA
Input Pull-Up Resistor		R_{IP}	—	—	—	5.6	—	k Ω
Output Pull-Down Resistor		R_{OP}	—	—	—	15	—	k Ω
Output Voltage	"H" Level	V_{OH}	3	$V_{CC} = 0 \text{ V}$ $GND = -4.5 \text{ V}$ $V_{IN} = GND$	—	—	$V_{CC} - 1.35$	V
				$I_{OUT} = 500 \text{ mA}$				
Supply Current		$I_{CC} \text{ (ON)}$	1	$V_{CC} = 5.5 \text{ V}, V_{IN} = GND$	—	—	12.5	mA / ch
		$I_{CC} \text{ (OFF)}$		$V_{CC} = 5.5 \text{ V}, V_{IN} = OPEN$				
Turn-On Delay		t_{ON}	4	$V_{CC} = 5 \text{ V}, R_L = 16 \Omega$ $C_L = 15 \text{ pF}$	—	0.1	—	μs
Turn-Off Delay		t_{OFF}				—	3.5	—

TEST CIRCUIT

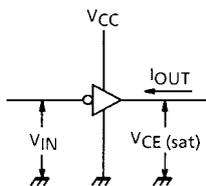
1. V_{IH} , V_{IL} , I_{CC}



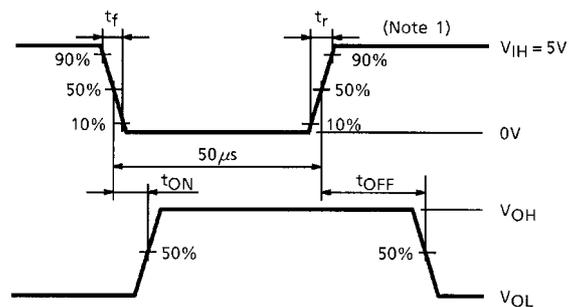
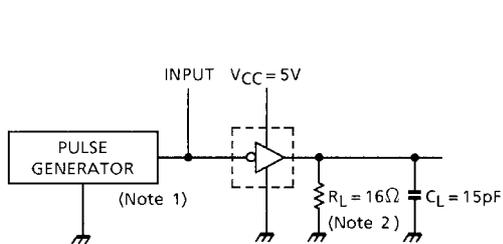
2. I_{IL}



3. $V_{CE(sat)}$



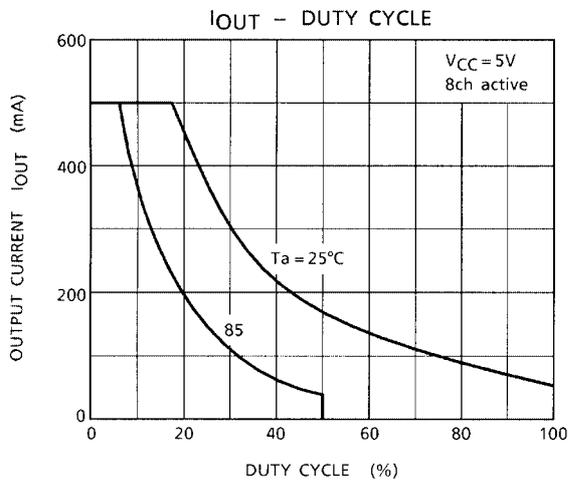
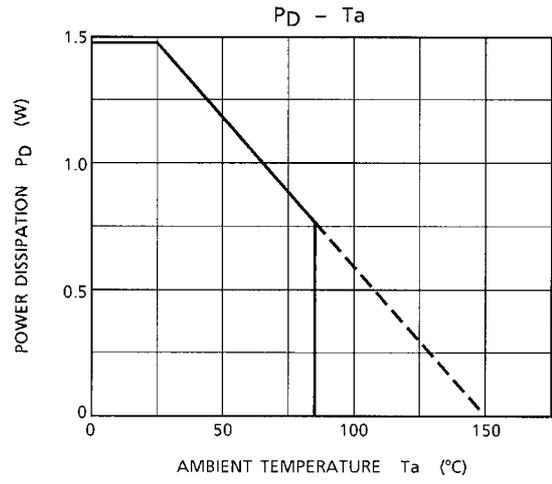
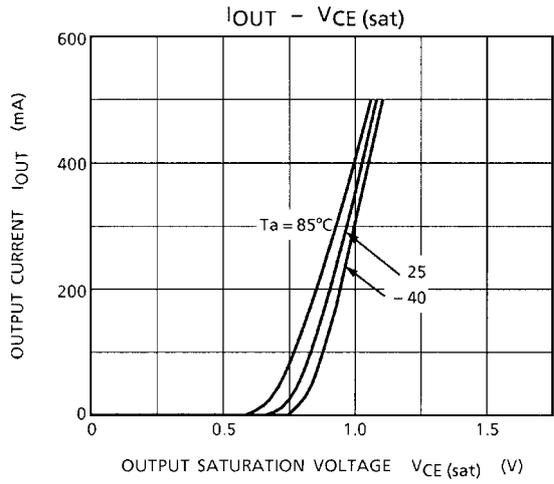
4. t_{ON} , t_{OFF}



- Note 1: Pulse width 50 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

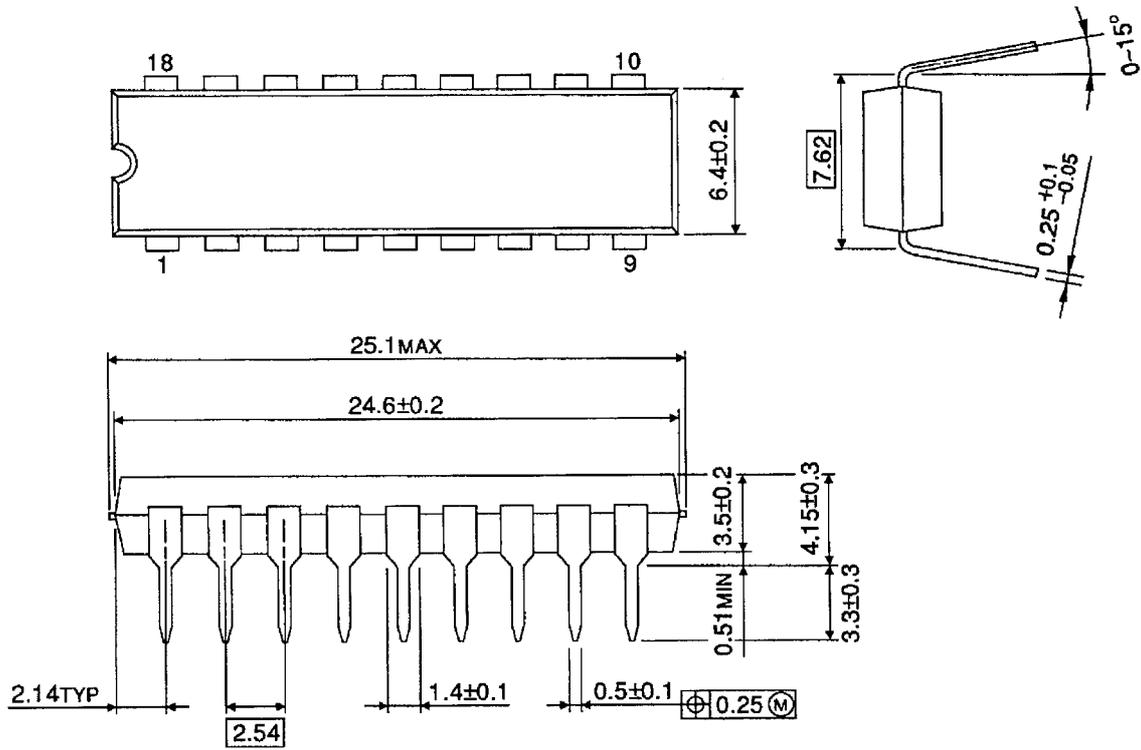
This IC does not integrate protection circuits such as overcurrent and overvoltage protectors. Thus, if excess current or voltage is applied to the IC, the IC may be damaged. Please design the IC so that excess current or voltage will not be applied to the IC. Utmost care is necessary in the design of the output line, VCC 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

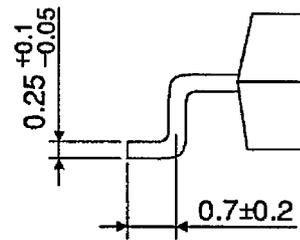
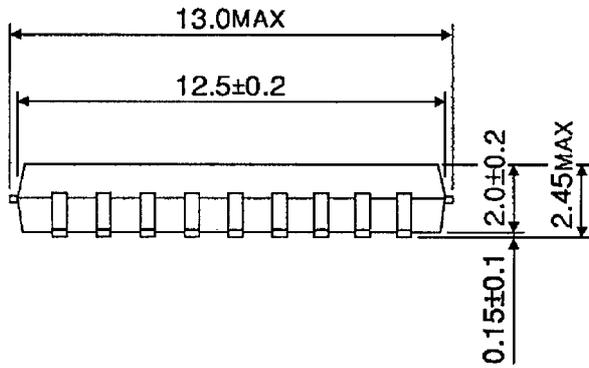
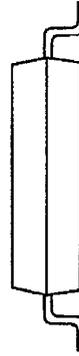
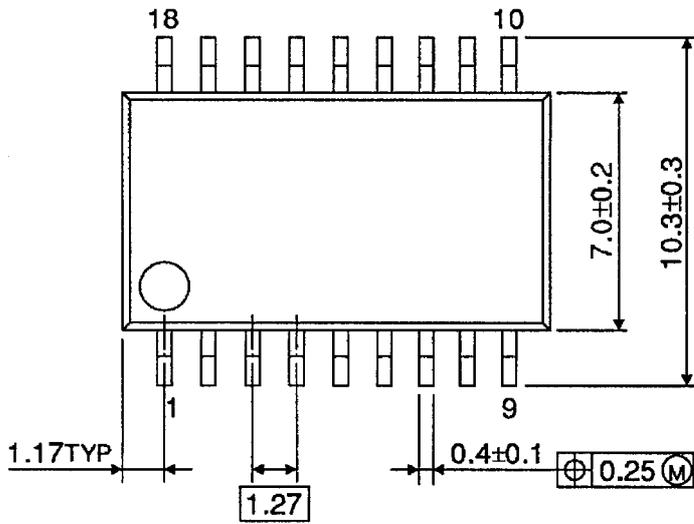


Weight: 1.47 g (Typ.)

PACKAGE DIMENSIONS

SOP18-P-375-1.27

Unit: mm



Weight: 0.41 g (Typ.)

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