

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62783APA

8CH HIGH-VOLTAGE SOURCE DRIVER

The TD62783APA is comprised of eight source current transistor array.

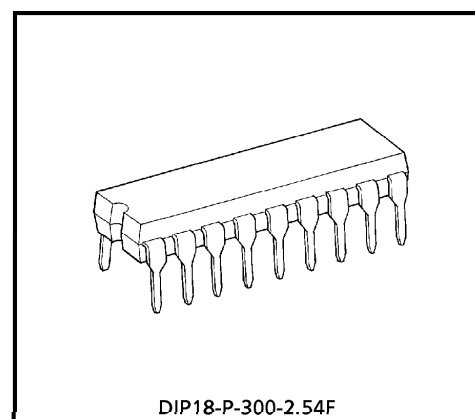
These drivers are specifically designed for fluorescent display applications.

Applications include relay, hammer and lamp drivers.

FEATURES

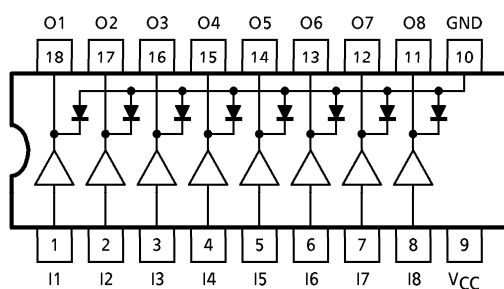
- High output voltage type-APA : $V_{CE(SUS)} = 50V$ (Min.)
- Output current (single output) : $I_{OUT} = -500mA / ch$ (Max.)
- Output clamp diodes
- Single supply voltage
- Input compatible with TTL, 5V CMOS
- Package type-APA : DIP-18 pin

TYPE	DESIGNATION
TD62783APA	TTL, 5V CMOS

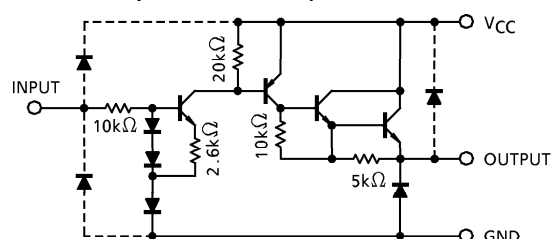


Weight : 1.478g (Typ.)

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 ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	50	V
Output Current	I_{OUT}	– 500	mA / ch
Input Voltage	V_{IN}	15	V
Clamp Diode Reverse Voltage	V_R	50	V
Clamp Diode Forward Current	I_F	500	mA
Power Dissipation	P_D (Note)	1.47	W
Operating Temperature	T_{opr}	– 40~85	$^\circ\text{C}$
Storage Temperature	T_{stg}	– 55~150	$^\circ\text{C}$

(Note) Delated above 25°C in the proportion of $11.7\text{mW}/^\circ\text{C}$.

RECOMMENDED OPERATING CONDITIONS ($T_a = -40\sim 85^\circ\text{C}$)

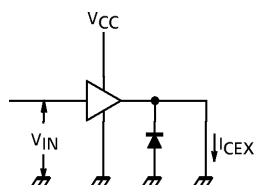
CHARACTERISTIC		SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage		V_{CC}	—	—	—	50	V
Output Current		I_{OUT}	$T_{pw} = 25\text{ms}$, Duty = 8% 8 Circuits	—	—	– 400	mA / ch
			$T_{pw} = 25\text{ms}$, Duty = 25% 8 Circuits	—	—	– 200	
Input Voltage		V_{IN}	—	—	—	12	V
Input Voltage	Output On	$V_{IN}(\text{ON})$	—	2.0	5.0	15	V
	Output Off	$V_{IN}(\text{OFF})$	—	0	—	0.8	V
Clamp Diode Reverse Voltage		V_R	—	—	—	50	V
Clamp Diode Forward Current		I_F	—	—	—	400	mA
Power Disspation		P_D	—	—	—	0.52	W

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

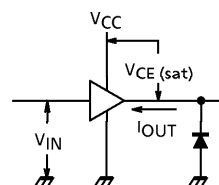
CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I _{CEX}	1	V _{CC} = V _{CC} MAX., V _{IN} = 0.4V Ta = 25°C	—	—	100	μA
Output Saturation Voltage	V _{CE} (sat)	2	V _{IN} = V _{IN} (ON), I _{OUT} = - 350mA	—	—	2.0	V
			V _{IN} = V _{IN} (ON), I _{OUT} = - 225mA	—	—	1.9	
			V _{IN} = V _{IN} (ON), I _{OUT} = - 100mA	—	—	1.8	
Input Current	I _{IN} (ON)	3	V _{IN} = 2.4V	—	36	52	μA
			V _{IN} = 3.85V	—	180	260	
Input Voltage	V _{IN} (ON)	4	V _{CE} = 2.0V, I _{OUT} = - 350mA	—	—	2.0	V
	V _{IN} (OFF)		I _{OUT} = - 500μA	0.8	—	—	
Supply Current	I _{CC} (ON)	3	V _{IN} = V _{IN} (ON), V _{CC} = 50V	—	—	2.5	mA / ch
Clamp Diode Leakage Current	I _R	5	V _R = 50V	—	—	50	μA
Clamp Diode Forward Voltage	V _F	6	I _F = 350mA	—	—	2.0	V
Turn-On Delay	t _{ON}	7	V _{CC} = V _{CC} MAX., R _L = 125Ω C _L = 15pF	—	0.15	—	μs
Turn-Off Delay	t _{OFF}			—	1.8	—	

TEST CIRCUIT

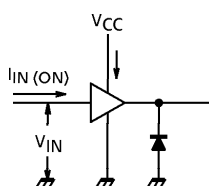
1. I_{CEX}



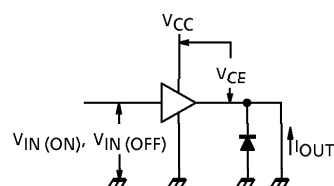
2. $V_{CE(sat)}$



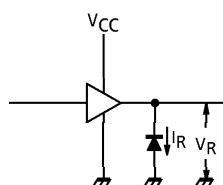
3. $I_{IN(ON)}$, I_{CC}



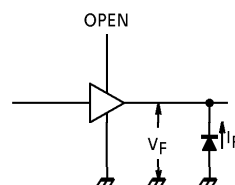
4. $V_{IN(ON)}$, $V_{IN(OFF)}$



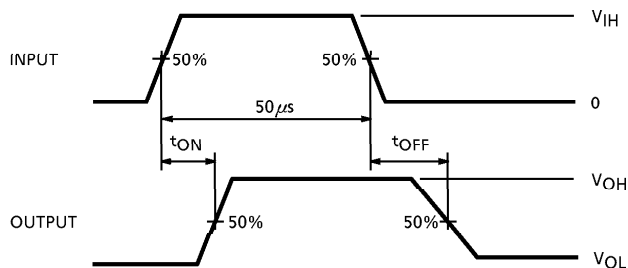
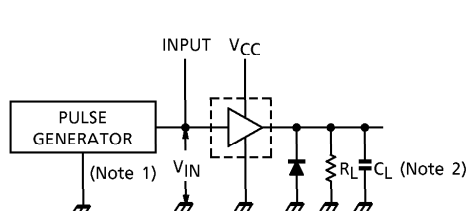
5. I_R



6. V_F



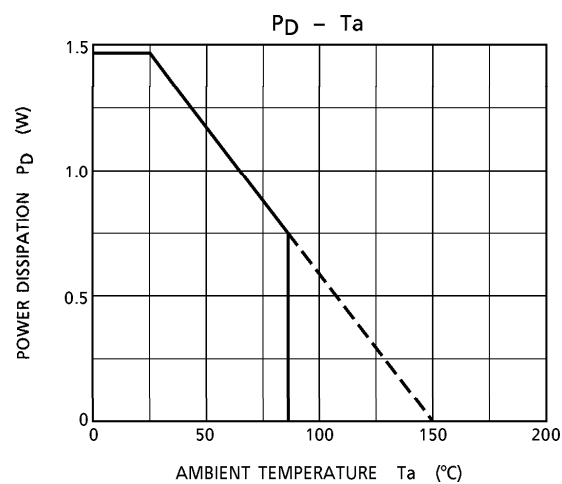
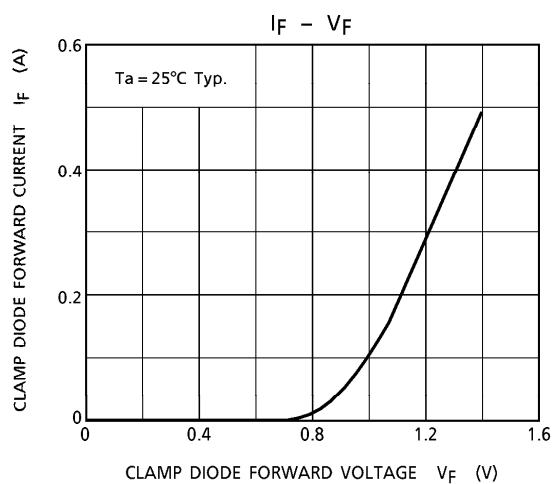
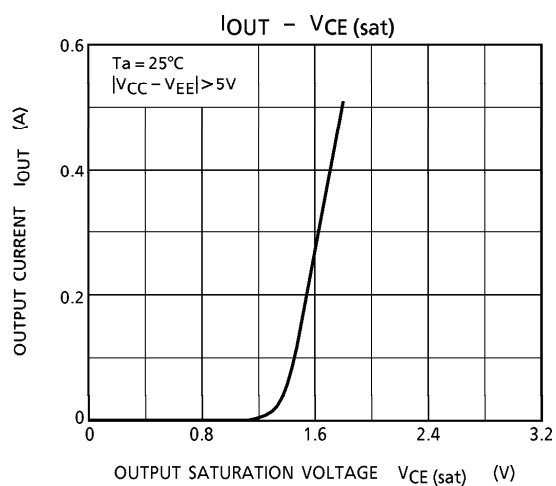
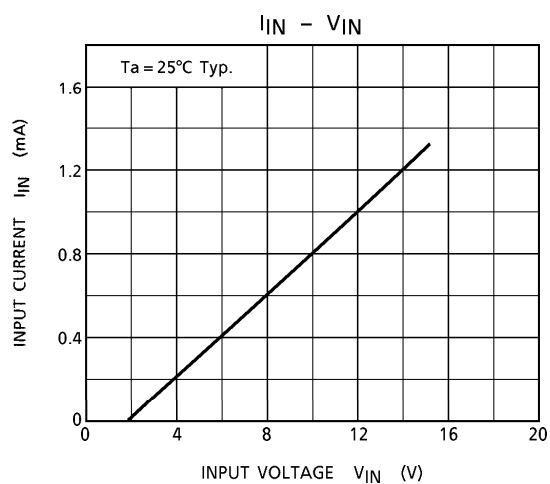
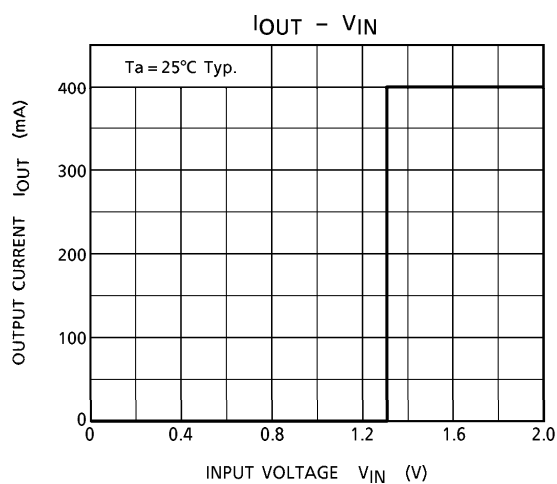
7. t_{ON} , t_{OFF}



- (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.

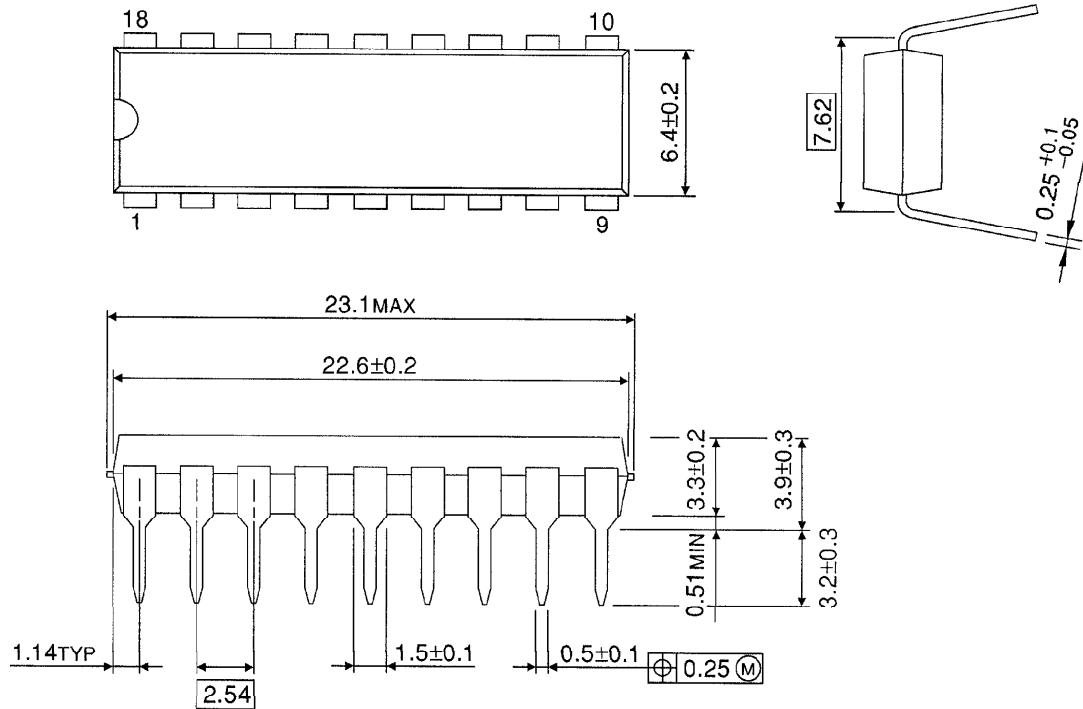
PRECAUTIONS for USING

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-300-2.54F

Unit : mm



Weight : 1.478g (Typ.)