

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62783APA

8CH HIGH-VOLTAGE SOURCE DRIVER

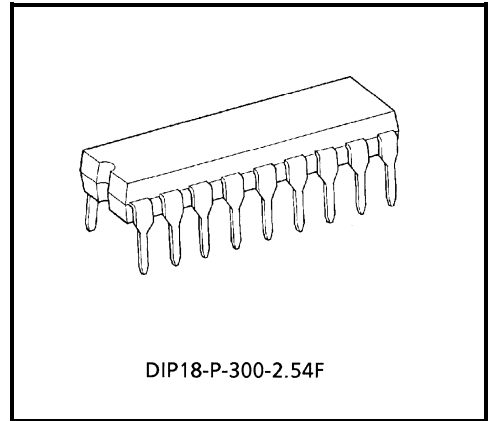
The TD62783APA is comprised of eight source current transistor array.

These drivers are specifically designed for fluorescent display applications.

Applications include relay, hammer and lamp drivers.

FEATURES

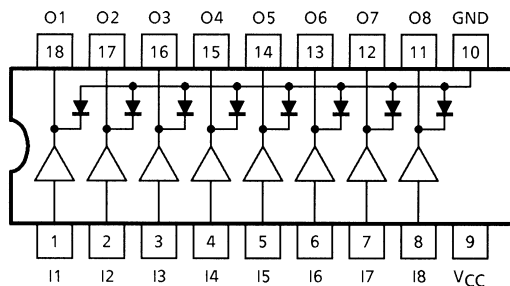
- High output voltage type-APA: $V_{CE(SUS)} = 50\text{ V (Min)}$
- Output current (single output) : $I_{OUT} = -500\text{ mA / ch (Max)}$
- Output clamp diodes
- Single supply voltage
- Input compatible with TTL, 5 V CMOS
- Package type : DIP-18 pin



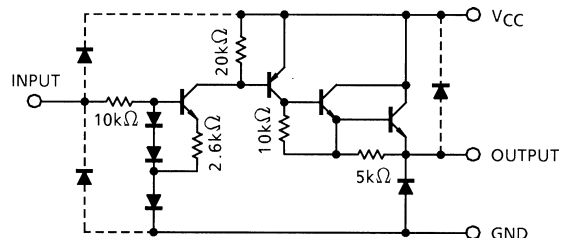
Weight: 1.478 g (Typ.)

TYPE	DESIGNATION
TD62783APA	TTL, 5 V CMOS

PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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

MAXIMUM RATINGS (Ta = 25°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	°C
Storage Temperature	T_{stg}	-55~150	°C

Note: Delated above 25°C in the proportion of 11.7 mW / °C.

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

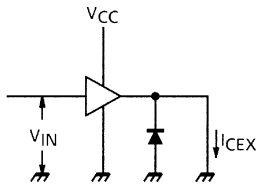
CHARACTERISTIC	SYMBOL	CONDITION	MIN	TYP.	MAX	UNIT
Supply Voltage	V _{CC}	—	—	—	50	V
Output Current	I _{OUT}	T _{pw} = 25 ms, Duty = 8% 8 Circuits	—	—	-400	mA / ch
		T _{pw} = 25 ms, Duty = 25% 8 Circuits	—	—	-200	
Input Voltage	V _{IN}	—	—	—	12	V
Input Voltage	Output On	V _{IN (ON)}	2.0	5.0	15	V
	Output Off	V _{IN (OFF)}	0	—	0.8	V
Clamp Diode Reverse Voltage	V _R	—	—	—	50	V
Clamp Diode Forward Current	I _F	—	—	—	400	mA
Power Dissipation	P _D	—	—	—	0.52	W

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

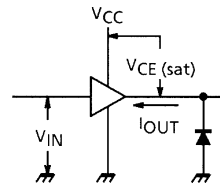
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Output Leakage Current	I _{CEX}	1	V _{CC} = V _{CC} MAX., V _{IN} = 0.4 V Ta = 25°C	—	—	100	μA
Output Saturation Voltage	V _{CE (sat)}	2	V _{IN} = V _{IN (ON)} , I _{OUT} = -350 mA	—	—	2.0	V
			V _{IN} = V _{IN (ON)} , I _{OUT} = -225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

TEST CIRCUIT

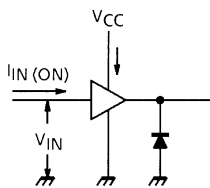
1. I_{CEX}



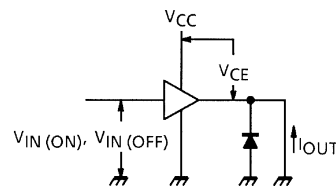
2. $V_{CE(sat)}$



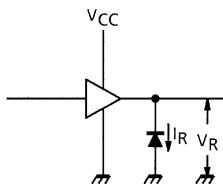
3. $I_{IN(ON)}, I_{CC}$



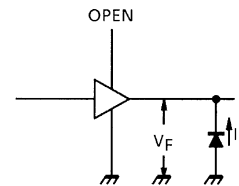
4. $V_{IN(ON)}, V_{IN(OFF)}$



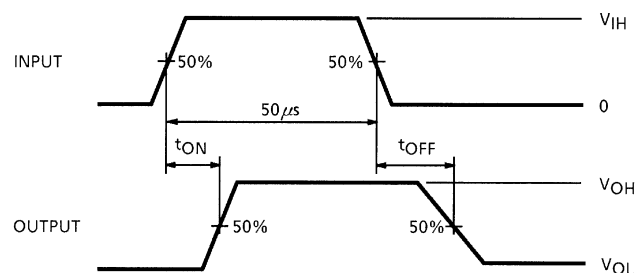
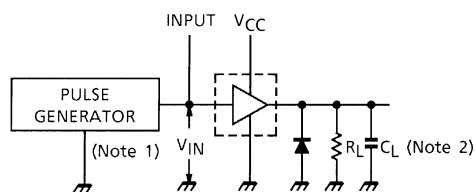
5. I_R



6. V_F



7. t_{ON}, t_{OFF}



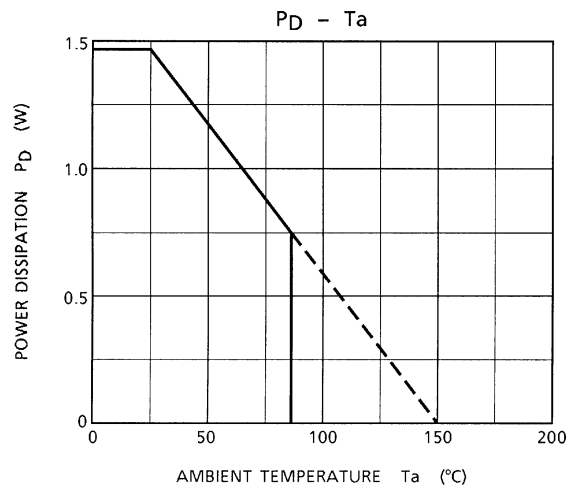
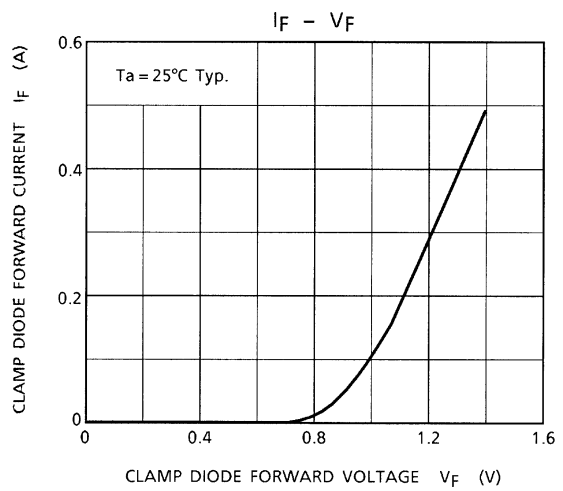
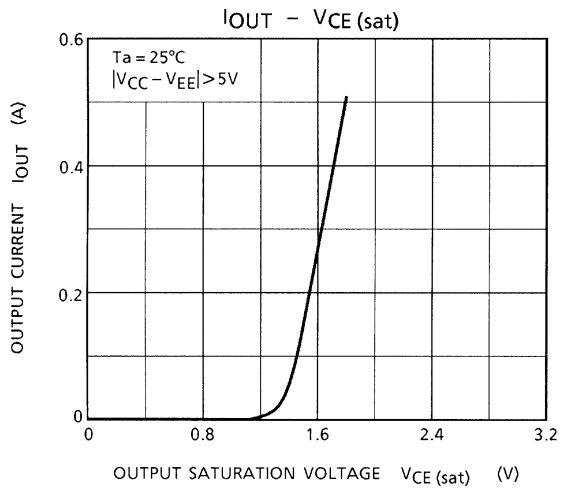
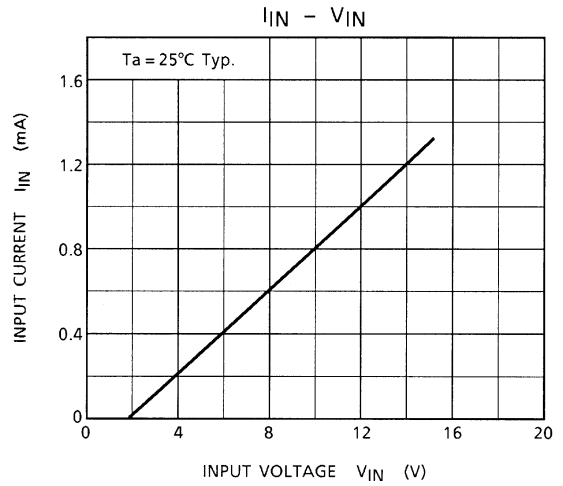
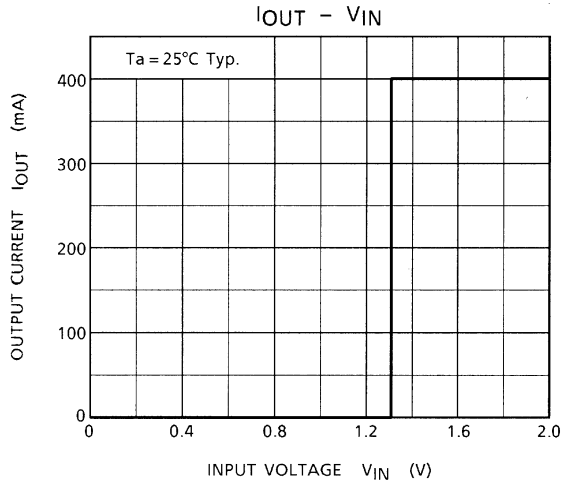
Note 1: Pulse Width 50 μ s, Duty Cycle 10%
Output Impedance 50 Ω , $t_r \leq 5$ ns, $t_f \leq 10$ ns
Note 2: C_L includes probe and jig capacitance.

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.

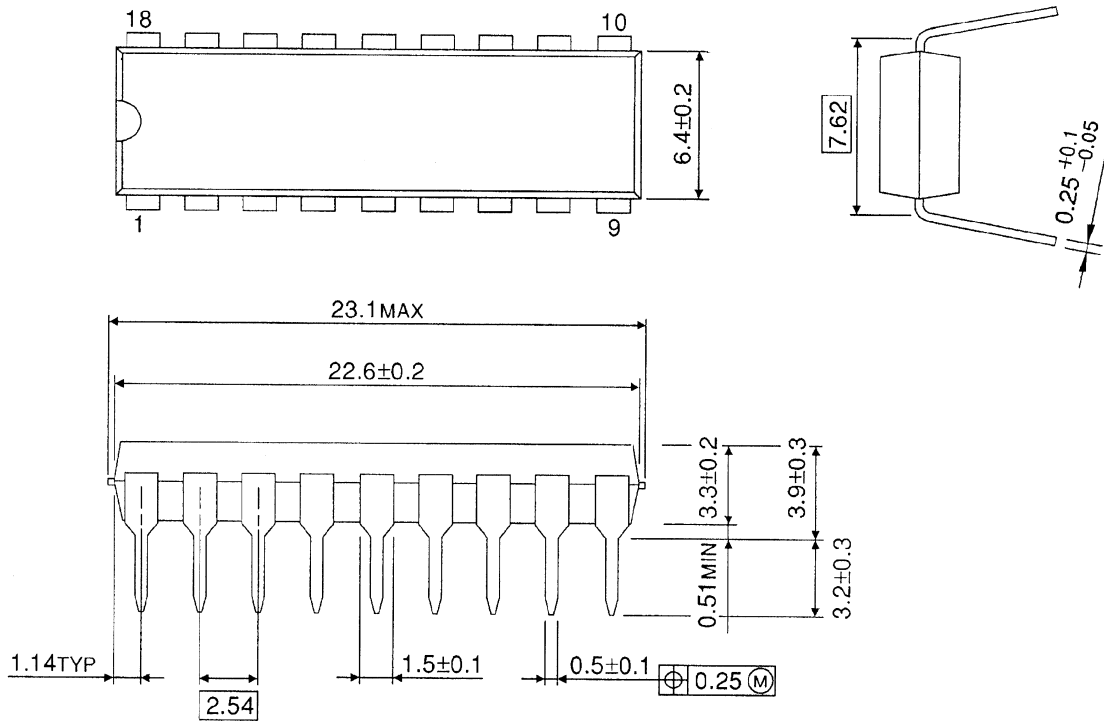
Utmost care is necessary in the design of the output line, VCC and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.



PACKAGE DIMENSIONS

DIP18-P-300-2.54F

Unit: mm



Weight: 1.478 g (Typ.)

RESTRICTIONS ON PRODUCT USE

000707EBA

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