TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62781APG,TD62781AFG TD62782APG,TD62782AFG

8CH HIGH-VOLTAGE SOURCE DRIVER

The TD62781APG / AFG Series are comprised of eight source current Transistor Array.

These drivers are specifically designed for fluorescent display applications.

Applications include relay, hammer and lamp drivers.

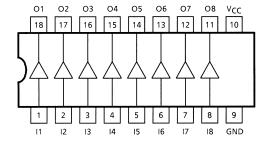
This devices are a product for the Pb free(Sn-Ag).

FEATURES

- High output voltage VOUT = 60 V (Min)
- Output current (single output) IOUT = -50 mA / ch (Max)
- Pull-down resistors / each output
- Single supply voltage
- Input compatible with various types of logic

TYPE	DESIGNATION			
TD62781APG / AFG	TTL, 5 V CMOS			
TD62782APG / AFG	6~15 V PMOS CMOS			

PIN CONNECTION (TOP VIEW)

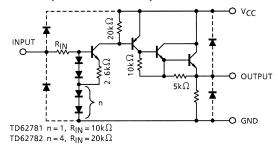


TD62781APG TD62782APG DIP18-P-300-2.54D TD62781AFG TD62782AFG SOP18-P-375-1.27

Weight

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

SCHEMATICS (EACH DRIVER)



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



MAXIMUM RATINGS (Ta = 25°C)

CHARACTE	ERISTIC	SYMBOL	RATING	UNIT	
Supply Vo	V _{CC}	60	V		
Output Voltage		Vout	V _{CC}	V	
Output Current		lout	-50	mA / ch	
Input Voltage		V _{IN}	20	V	
Power Dissipation	APG	P _D (Note)	1.47	W	
	AFG	T D (Note)	0.96	VV	
Operating Temperature		T _{opr}	-40~85	°C	
Storage Temperature		T _{stg}	-55~150	°C	

Note: Delated above 25°C in the proportion 11.7 mW / °C (AP Type), 7.7 mW / °C (AF Type).

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

CHARACTERISTIC		SYMBOL	CONDITION	MIN	TYP.	MAX	UNIT	
Supply Voltage	TD62781APG TD62781AFG		Vcc	-	4.5	_	55	. V
	TD62782APG TD62782AFG				6.0	_	55	
Output Vol	tage		V _{OUT}	_	0	_	V _{CC}	V
Output Cur	rent		I _{OUT}	_ 040		-40	mA / ch	
Input	TD62781		V _{IN}	_	0	_	7	V
Voltage	TD62782				0	_	15	V
Power Diss	Power Dissipation		D-	_	_	_	0.52	W
Fower Dissipation		AFG	P _D	_	_	_	0.35	VV

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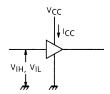
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT	
Input Voltage	"H" Level	TD62781	V _{IH}	1	_	2.0	_	_	٧
		TD62782				4.5	_	_	
	"I " I ovol	TD62781	V _{IL}	1	-	0	_	0.8	V
	"L" Level	TD62782				0	_	2.0	
Input Current	"H" Lovel	TD62781		2	V _{IN} = 2.4 V	_	40	75	μA
	"H" Level	TD62782	I _{IH}		V _{IN} = 7.5 V	_	170	250	
Output Current "H" Level		l _{OL}	3	_	_	200	_	μΑ	
"H" Level		V _{OH}	4	I _{OUT} = -40 mA, V _{IN} = V _{IH MIN} .	V _{CC} -2.5	V _{CC} -1.7	_	V	
	"L" Leve		V _{OL}		I _{OUT} = 0, V _{IN} = V _{IL MIN} .	_	50	250	mV
Supply Current		ICC (ON)	1	V _{CC} = 55 V, V _{IN} = V _{IH MIN} .	_	_	20	- mA	
		I _{CC (OFF)}	'	V _{CC} = 55 V, V _{IN} = V _{IL MAX} .	_	_	1		
Turn-On Delay		t _{ON}	5	V _{CC} = 55 V, C _L = 15 pF	_	0.2	_	110	
Turn-Off Delay			tOFF			_	6.0	_	μs

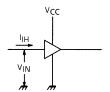
3

TEST CIRCUIT

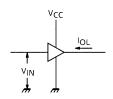
1. VIH, VIL, ICC



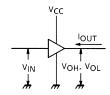
2. I_{IH}



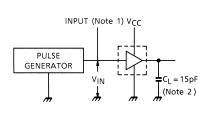
3. I_{OL}

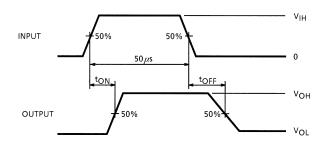


4. VOH, VOL



5. ton, toff





Note 1: Pulse Width 50 µs, Duty Cycle 10%

Output Impedance 50 Ω , $t_f \le 100$ ns, $t_f \le 100$ ns

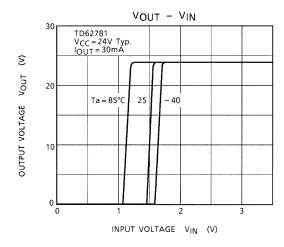
Note 2: C_L includes probe and jig capacitance.

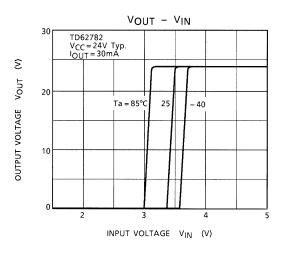
PRECAUTIONS for USING

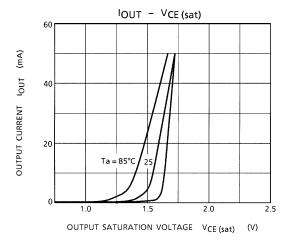
This IC does not integrate protection circuits such as overcurrent and overvoltage protectors.

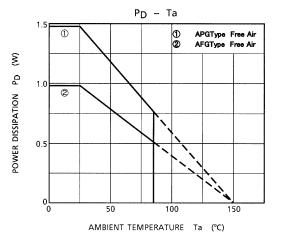
Thus, if excess current or voltage is applied to the IC, the IC may be damaged. Please design the IC so that excess current or voltage will not be applied to the IC.

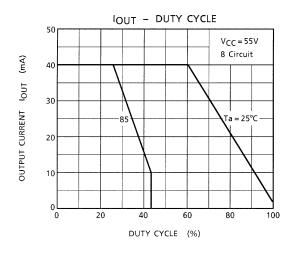
Utmost care is necessary in the design of the output line, $V_{\rm CC}$ and GND line since IC may be destroyed due to short–circuit between outputs, air contamination fault, or fault by improper grounding.







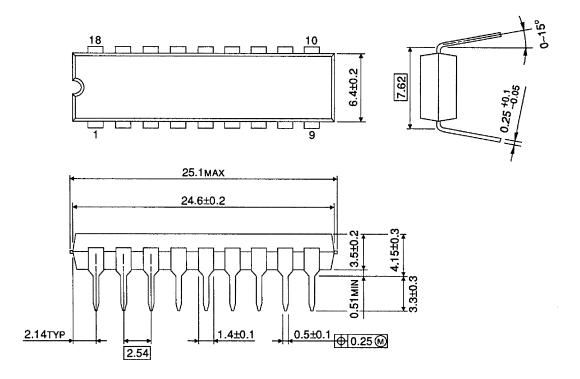




PACKAGE DIMENSIONS

DIP18-P-300-2.54D

Unit: mm

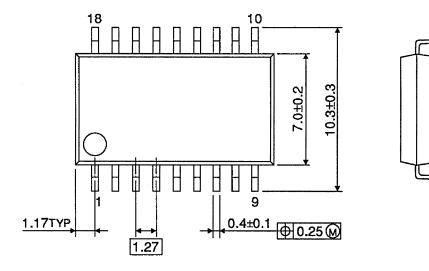


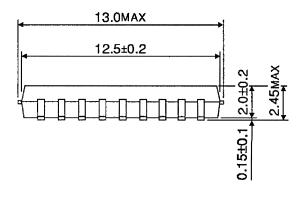
Weight: 1.47 g (Typ.)

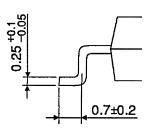
PACKAGE DIMENSIONS

SOP18-P-375-1.27

Unit: mm







Weight: 0.41 g (Typ.)

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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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