

TD62064APA

4CH HIGH-CURRENT DARLINGTON SINK DRIVER

The TD62064APA is high-voltage, high-current darlington drivers comprised of four NPN darlington pairs.

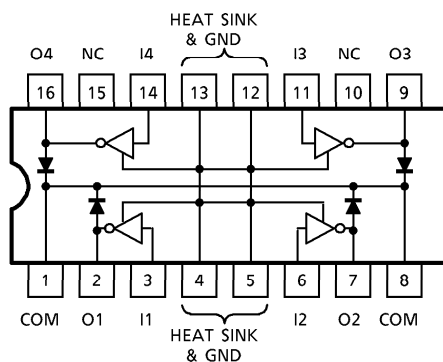
All units feature integral clamp diodes for switching inductive loads.

Applications include relay, hammer, lamp and stepping motor drivers.

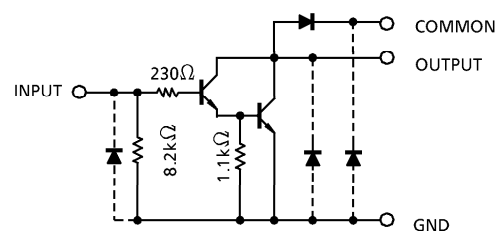
FEATURES

- Output current (single output) 1.5A / ch (Max.)
- High sustaining voltage output 50V (Min.)
- Output clamp diodes
- Input compatible with TTL and 5V CMOS
- GND and SUB Terminal = Heat Sink
- Package type-APA : DIP-16 pin

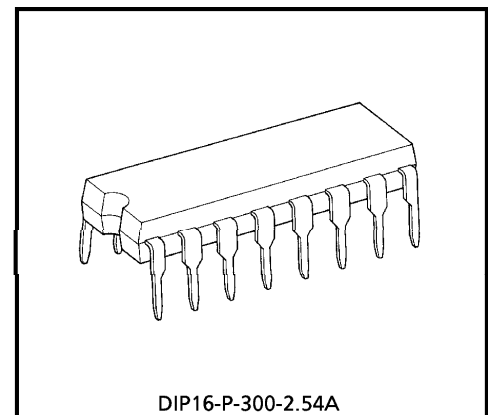
PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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



Weight : 1.11g (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Output Sustaining Voltage	$V_{CE(SUS)}$	- 0.5~50	V
Output Current	I_{OUT}	1.5	A / ch
Input Current	I_{IN}	50	mA
Input Voltage	V_{IN}	- 0.5~17	V
Clamp Diode Reverse Voltage	V_R	50	V
Clamp Diode Forward Current	I_F	1.50	A / ch
Power Dissipation	P_D	1.47 / 2.7 (Note)	W
Operating Temperature	T_{opr}	- 40~85	$^\circ\text{C}$
Storage Temperature	T_{stg}	- 55~150	$^\circ\text{C}$

(Note) On Glass Epoxy PCB (50×50×1.6mm Cu 50%)

RECOMMENDED OPERATING CONDITIONS ($T_a = -40\sim85^\circ\text{C}$)

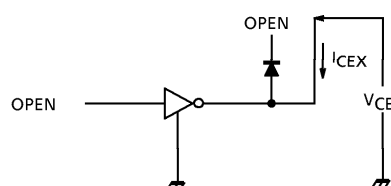
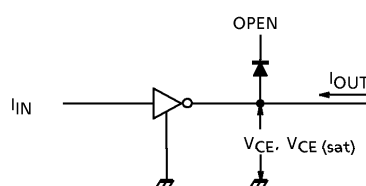
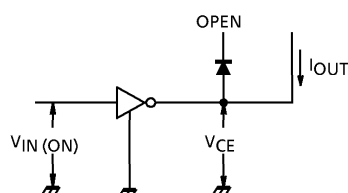
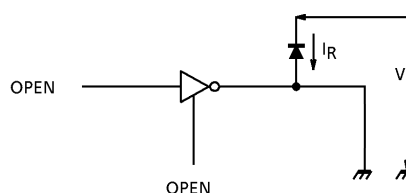
CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Output Sustaining Voltage	$V_{CE(SUS)}$		0	—	50	V
Output Current	I_{OUT}	DC 1 Circuit, $T_a = 25^\circ\text{C}$	0	—	1250	mA / ch
		$T_{pw} \leq 25\text{ms}$ 4 Circuits On $T_a = 85^\circ\text{C}$ $T_j = 120^\circ\text{C}$ Duty = 10%	0	—	1250	
		Duty = 50%	0	—	700	
Input Voltage	V_{IN}		0	—	8	V
	Output On	$V_{IN(ON)}$ $I_{OUT} = 1.25\text{A}$	2.5	—	8	V
	Output Off	$V_{IN(OFF)}$	0	—	0.4	V
Input Current	I_{IN}		0	—	20	mA
Clamp Diode Reverse Voltage	V_R		0	—	50	V
Clamp Diode Forward Current	I_F		—	—	1.25	A
Power Dissipation	P_D	$T_a = 85^\circ\text{C}$ (Note)	—	—	1.4	W

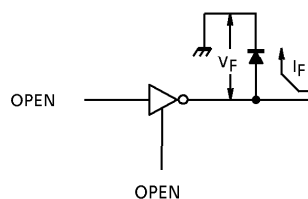
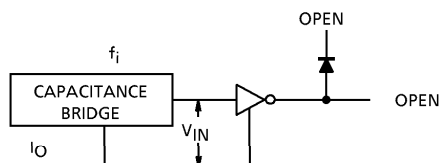
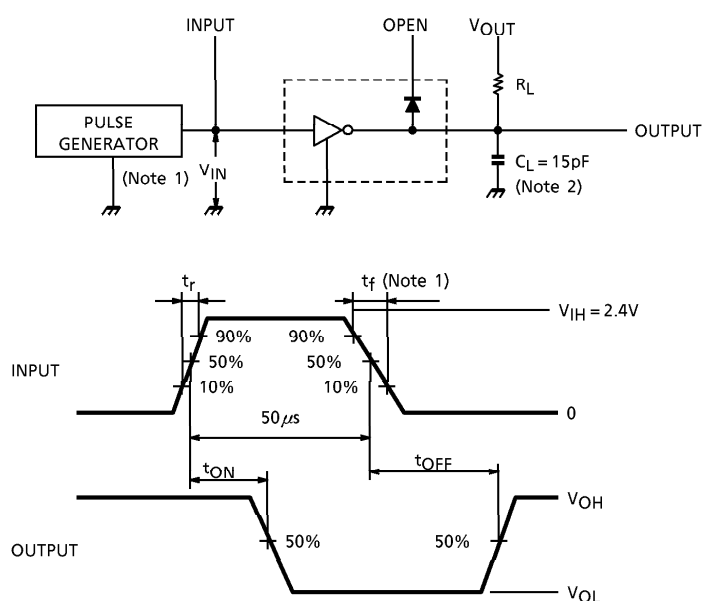
(Note) On Glass Epoxy (50×50×1.6mm Cu 50%)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I_{CEX}	1	$V_{CE} = 50V, T_a = 25^\circ C$	—	—	50	μA
			$V_{CE} = 50V, T_a = 85^\circ C$	—	—	500	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	2	$I_{OUT} = 1.25A, I_{IN} = 2mA$	—	—	1.6	V
			$I_{OUT} = 0.75A, I_{IN} = 935\mu A$	—	—	1.25	
DC Current Transfer Ratio	h_{FE}	2	$V_{CE} = 2V$	—	800	—	
				—	1500	—	
Input Voltage (Output On)	$V_{IN(ON)}$	3	$I_{OUT} = 1.25A, I_{IN} = 2mA$	—	—	2.4	V
Clamp Diode Reverse Current	I_R	4	$V_R = 50V, T_a = 25^\circ C$	—	—	50	μA
			$V_R = 50V, T_a = 85^\circ C$	—	—	100	
Clamp Diode Forward Voltage	V_F	5	$I_F = 1.25A$	—	—	2	V
Input Capacitance	C_{IN}	6	$V_{IN} = 0V, f = 1MHz$	—	15	—	pF
Turn-On Delay	t_{ON}	7	$C_L = 15pF, V_{OUT} = 50V$ $R_L = 40\Omega$	—	0.1	—	μs
Turn-Off Delay	t_{OFF}			—	1.0	—	

TEST CIRCUIT

1. I_{CEX} 2. $V_{CE(sat)}, h_{FE}$ 3. $V_{IN(ON)}$ 4. I_R 

5. V_F

6. C_{IN}

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, COMMON and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.

