

TD62308APA

4CH LOW INPUT ACTIVE HIGH-CURRENT DARLINGTON SINK DRIVER

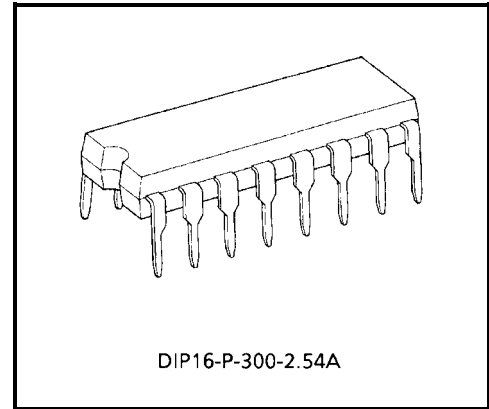
The TD62308APA is non-inverting transistor array which is comprised of four NPN darlington output stages and PNP input stages.

This device is low level input active driver and is suitable for operation with TTL, 5 V CMOS and 5 V Microprocessor which have sink current output drivers.

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

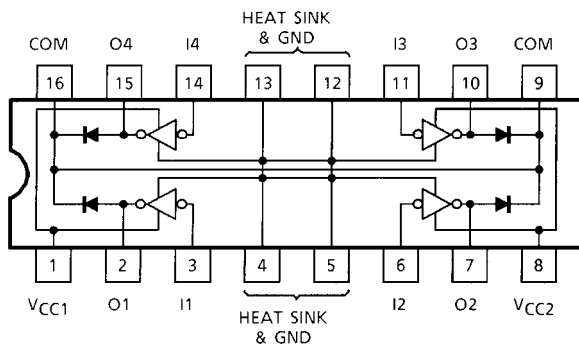
FEATURES

- Output current (single output) 1.5 A (Max.)
- High sustaining voltage output 50 V (Min.)
- Output clamp diodes
- Input compatible with TTL and 5 V CMOS
- Low level active inputs
- Standard supply voltage
- Two VCC terminals VCC1, VCC2 (Separated)
- GND and SUB terminal = Heat Sink
- Package type-APA: DIP-16 pin

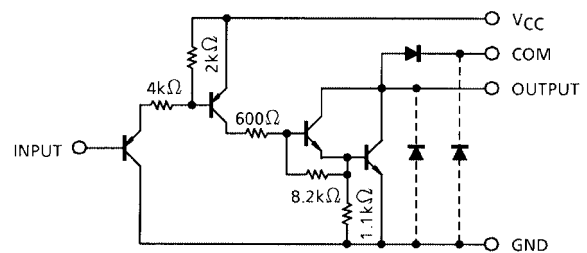


Weight: 1.11 g (Typ.)

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}	-0.5~10	V
Output Sustaining Voltage	V _{CE (SUS)}	-0.5~50	V
Output Current	I _{OUT}	1.5	A / ch
Input Current	I _{IN}	-10	mA
Input Voltage	V _{IN}	-0.5~30	V
Clamp Diode Reverse Voltage	V _R	50	V
Clamp Diode Forward Current	I _F	1.5	A
Power Dissipation	P _D (Note)	1.47 / 2.7	W
Operating Temperature	T _{opr}	-40~85	°C
Storage Temperature	T _{stg}	-55~150	°C

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

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

CHARACTERISTIC		SYMBOL	CONDITION	MIN	TYP.	MAX	UNIT	
Supply Voltage		V _{CC}		4.5	—	5.0	V	
Output Sustaining Voltage		V _{CE (SUS)}		0	—	50	V	
Output Current		I _{OUT}	DC 1 Circuit Ta = 25°C	0	—	1250	mA / ch	
			T _{pw} ≤ 25 ms 4 Circuits Ta = 85°C T _j = 120°C	Duty = 10%	0	—		1250
			Duty = 50%	0	—	700		
Input Voltage		V _{IN}		0	—	25	V	
		Output On	V _{IN (ON)}	0	—	V _{CC} -3.6		
		Output Off	V _{IN (OFF)}	V _{CC} -1.0	—	V _{CC}		
Clamp Diode Reverse Voltage		V _R		—	—	50	V	
Clamp Diode Forward Current		I _F		—	—	1.25	A	
Power Dissipation		P _D	Ta = 85°C (Note)	—	—	1.4	W	

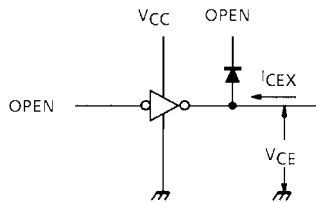
Note: On Glass Epoxy (50 × 50 × 1.6 mm Cu 50%)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

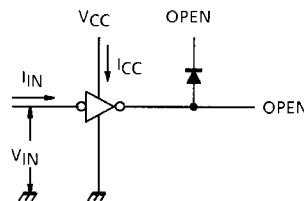
CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Output Leakage Current		I_{CEX}	1	$V_{CE} = 50\text{ V}, T_a = 25^\circ\text{C}$	—	—	50	μA
				$V_{CE} = 50\text{ V}, T_a = 85^\circ\text{C}$	—	—	100	
Output Saturation Voltage		$V_{CE(sat)}$	3	$I_{OUT} = 1.25\text{ A}$	—	—	1.8	V
				$I_{OUT} = 0.7\text{ A}$	—	—	1.3	
Input Voltage	"H" Level	V_{IH}	—		$V_{CC} - 1.6$	—	25	V
	"L" Level	V_{IL}						
Input Current	"H" Level	I_{IH}	2		—	—	10	μA
	"L" Level	I_{IL}						
Clamp Diode Reverse Current		I_R	4	$V_R = 50\text{ V}, T_a = 25^\circ\text{C}$	—	—	50	μA
				$V_R = 50\text{ V}, T_a = 85^\circ\text{C}$	—	—	100	
Clamp Diode Forward Voltage		V_F	5	$I_F = 1.25\text{ A}$	—	1.5	2.0	V
Supply Current	Output On	$I_{CC(ON)}$	2	$V_{CC} = 5.5\text{ V}, V_{IN} = 0\text{ V}$	—	8.5	12.5	mA / ch
	Output Off	$I_{CC(OFF)}$		$V_{CC} = 5.5\text{ V}, V_{IN} = V_{CC}$	—	—	10	
Turn-On Delay		t_{ON}	6	$C_L = 15\text{ pF}, V_{OUT} = 50\text{ V}$ $R_L = 40\ \Omega$	—	0.2	—	μs
Turn-Off Delay		t_{OFF}			—	5.0	—	

TEST CIRCUIT

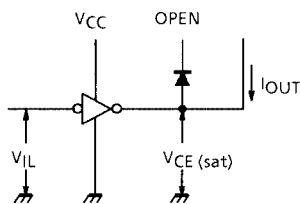
1. I_{CEX}



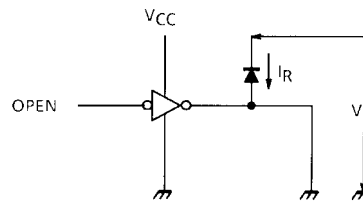
2. I_{CC}



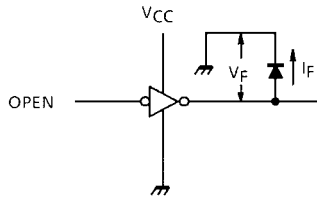
3. $V_{CE(sat)}$



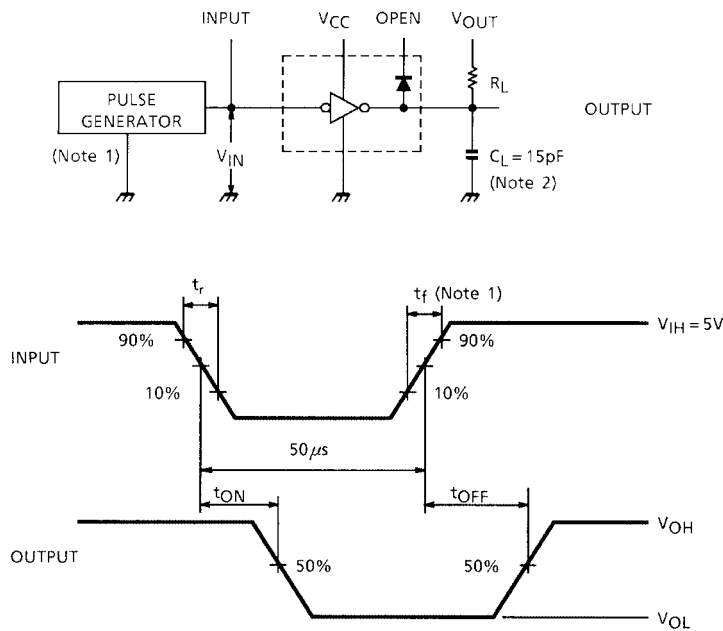
4. I_R



5. V_F



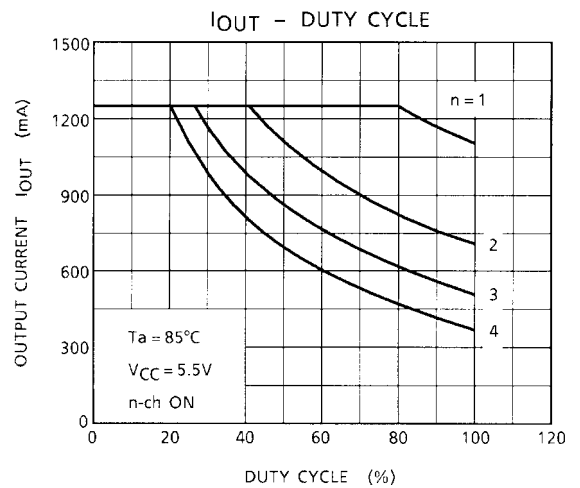
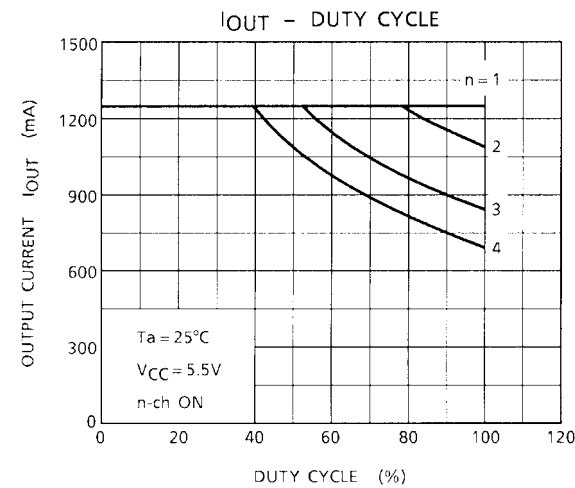
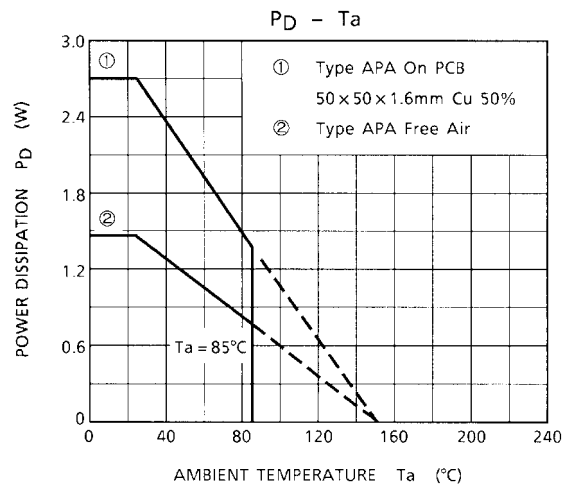
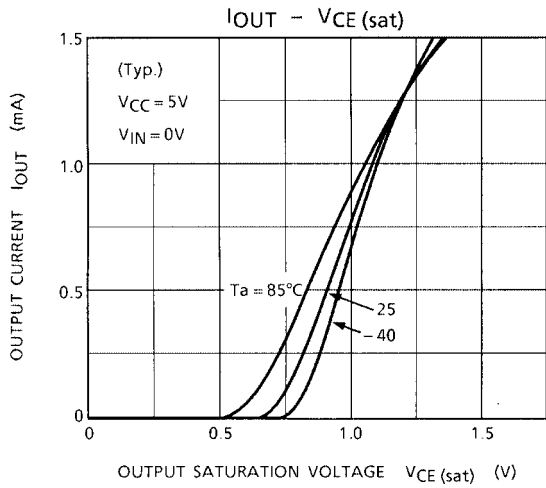
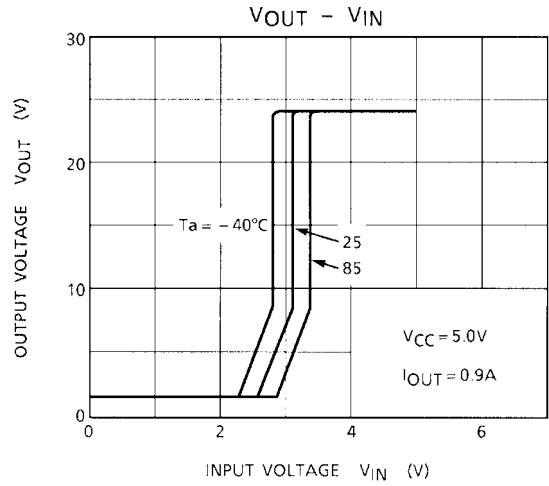
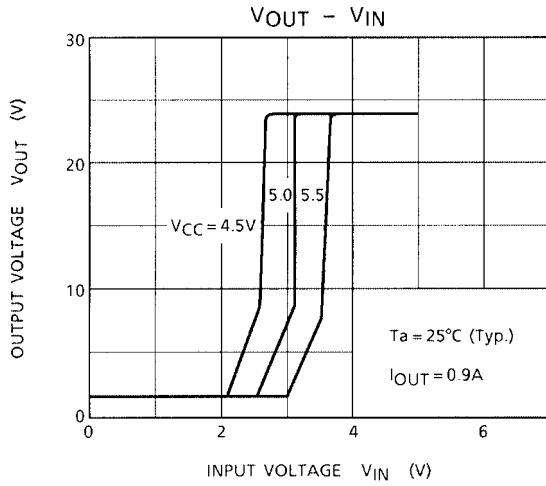
6. t_{ON} , t_{OFF}



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

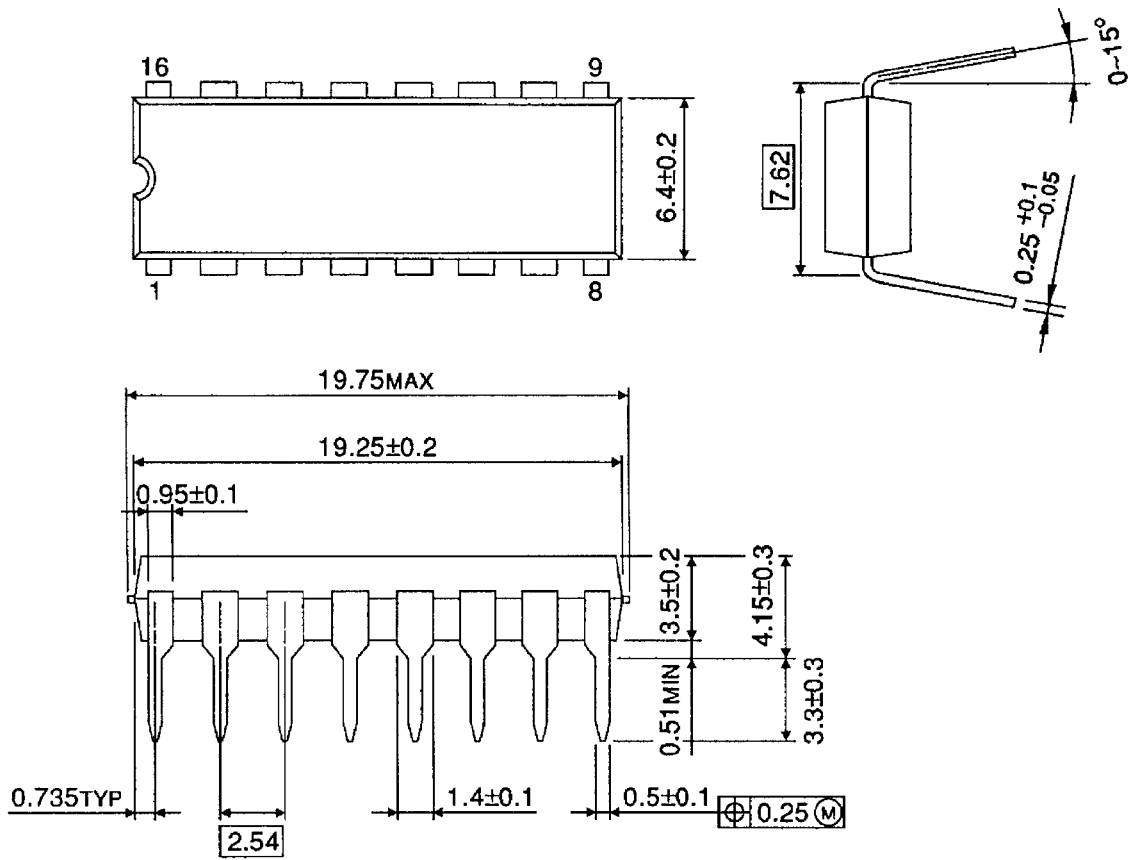
This IC does not include built-in protection circuits for excess current or overvoltage. If this IC is subjected to excess current or overvoltage, it may be destroyed. Hence, the utmost care must be taken when systems which incorporate this IC are designed. Utmost care is necessary in the design of the output line, VCC, COMMON and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.



PACKAGE DIMENSIONS

DIP16-P-300-2.54A

Unit: mm



Weight: 1.11 g (Typ.)

RESTRICTIONS ON PRODUCT USE

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