

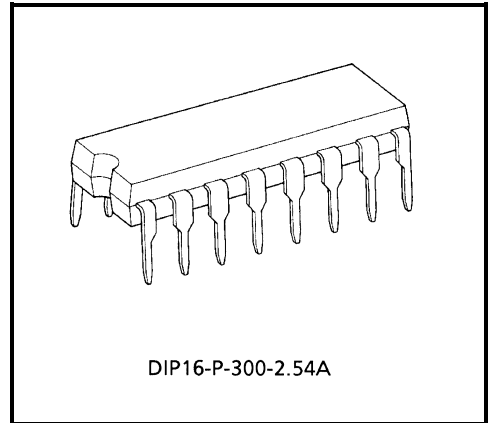
## TD62707AP

### 4CH HIGH-VOLTAGE SOURCE DRIVER WITH ENABLE

The TD62707AP is comprised of four source current output stages and enable inputs which can gate the outputs. All outputs feature integral clamp diodes for switching inductive loads. Applications include relay, hammer and lamp drivers.

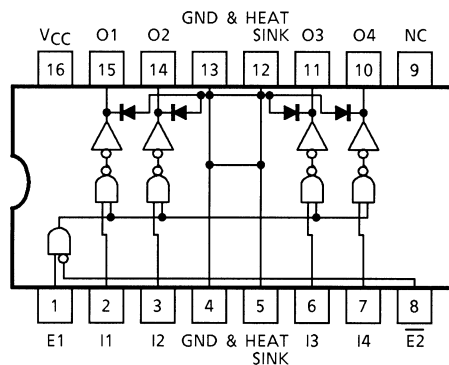
#### FEATURES

- High output voltage  $V_{CC}-V_{OUT} = 50 \text{ V MIN.}$
- Output current (single output)  $I_{OUT} = -750 \text{ mA MIN.}$
- Input compatible with TTL, 5 V CMOS
- Output clamp diodes
- Enable inputs E1,  $\overline{E2}$
- GND terminal = HEAT SINK
- Package type : DIP-16 pin

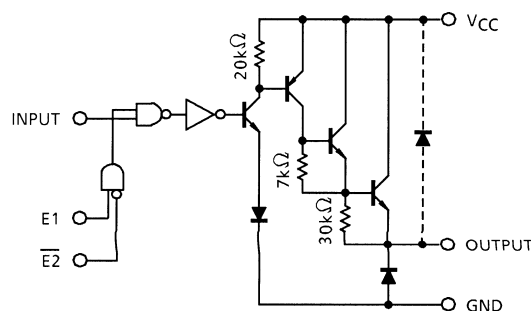


Weight: 1.11 g (Typ.)

#### PIN CONNECTION (TOP VIEW)



#### SCHEMATICS (EACH DRIVER)



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

## TRUTH TABLE

E1	$\overline{E2}$	IN1~4	OUT1~4
H	H	H	OFF
H	L	H	ON
L	H	H	OFF
H	H	L	OFF
L	L	H	OFF
L	L	L	OFF
H	L	L	OFF

## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	50	V
Output Voltage	V <sub>OUT</sub>	-50	V
Output Current	I <sub>OUT</sub>	-0.75	A / ch
Input Voltage	V <sub>IN1</sub>	-0.5~15	V
	V <sub>IN2</sub> (Note 1)	-0.5~V <sub>CC</sub>	
Clamp Diode Reverse Voltage	V <sub>R</sub>	50	V
Clamp Diode Forward Current	I <sub>F</sub>	-0.75	A
Power Dissipation	P <sub>D</sub>	1.47 / 2.7 (Note 2)	W
Operating Temperature	T <sub>opr</sub>	-40~85	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

Note 1: V<sub>CC</sub> ≤ 15 V

Note 2: On 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 <sub>CC</sub>	—	—	—	50	V
Output Voltage		V <sub>OUT</sub>	—	0	—	-50	V
Output Current		I <sub>OUT</sub> (Note)	DC 1 Circuits, Ta = 25°C	0	—	-600	mA / ch
			T <sub>pw</sub> = 25 ms, 4 Circuits Ta = 85°C, T <sub>j</sub> = 120°C	0	—	-600	
			Duty = 10 % Duty = 50 %	0	—	-160	
Input Voltage	"H" level	V <sub>IN</sub>	—	0	—	15	V
		V <sub>IH1</sub>	V <sub>CC</sub> > 15 V	2.0	—	15	
		V <sub>IH2</sub>	V <sub>CC</sub> ≤ 15 V	2.0	—	V <sub>CC</sub>	
	"L" level	V <sub>IL</sub>	—	0	—	0.8	
Clamp Diode Reverse Voltage		V <sub>R</sub>	—	—	—	50	V
Clamp Diode Forward Current		I <sub>F</sub>	—	—	—	600	mA
Power Dissipation		P <sub>D</sub>	Ta = 85°C (Note)	—	—	1.2	W

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

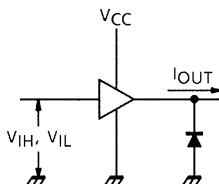
## ELECTRICAL CHARACTERISTICS

( $T_a = 25^\circ\text{C}$  unless otherwise noted  $V_{CC} = 50\text{ V}$ , "H" =  $V_{IH}$ , "L" =  $V_{IL}$ )

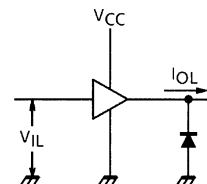
CHARACTERISTIC			SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Input Voltage	"H" level		$V_{IH}$	1	—	2.0	—	—	V
	"L" level		$V_{IL}$			—	—	0.8	
Input Current	"H" level	IN	$I_{IH}$	4	$V_{IN} = H$	—	70	100	$\mu A$
		E1			$V_{E1} = H$	—	0	10	
		$\overline{E2}$			$V_{E2} = H$	—	66	100	
Input Current	"L" level	IN	$I_{IL}$	5	$V_{IN} = L$	—	-40	-100	$\mu A$
		E1			$V_{E1} = L$	—	-20	-50	
		$\overline{E2}$			$V_{E2} = H$	—	-40	-100	
Output Leakage Current			$I_{OL}$	2	$V_{CC} = 50\text{ V}$ , OUTPUT OFF	—	—	100	$\mu A$
Supply Current			$I_{CCH}$	4	$V_{IN} = H$ , $V_{E1} = H$ $V_{E2} = L$ , OUTPUT OPEN	—	5.5	7.0	mA
			$I_{CCL}$	5	$V_{IN} = L$ , $V_{E1} = H$ $V_{E2} = L$ , OUTPUT OFF	—	5.5	7.0	
Output Voltage	"H" level		$V_{OH}$	3	$V_{IN} = H$ , $V_{E1} = \text{"H"}$ $V_{E2} = L$ , $I_{OUT} = -500\text{ mA}$	$V_{CC} - 2.5$	$V_{CC} - 2.0$	—	V
Clamp Diode Reverse Current			$I_R$	6	$V_R = 50\text{ V}$	—	—	100	$\mu A$
Clamp Diode Forward Voltage			$V_F$	7	$I_F = 500\text{ mA}$	—	1.5	2.0	V
Turn-On Delay			$t_{ON}$	8	$V_{CE} = 50\text{ V}$ , $R_L = 83\ \Omega$	—	0.5	—	$\mu s$
Turn-Off Delay			$t_{OFF}$			—	6.0	—	

## TEST CIRCUIT

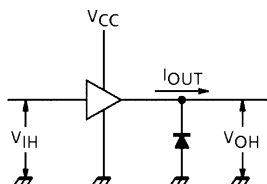
### 1. $V_{IH}$ , $V_{IL}$



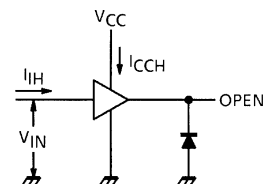
### 2. $I_{OL}$



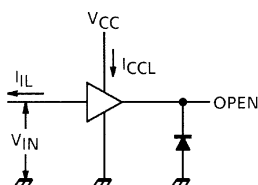
### 3. $V_{OH}$



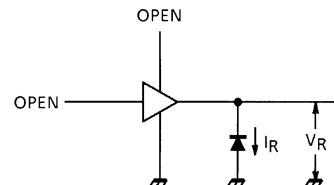
### 4. $I_{IH}$ , $I_{CCH}$



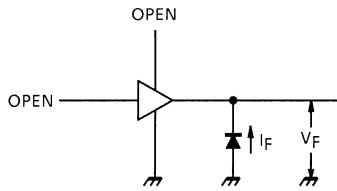
### 5. $I_{IL}$ , $I_{CCL}$



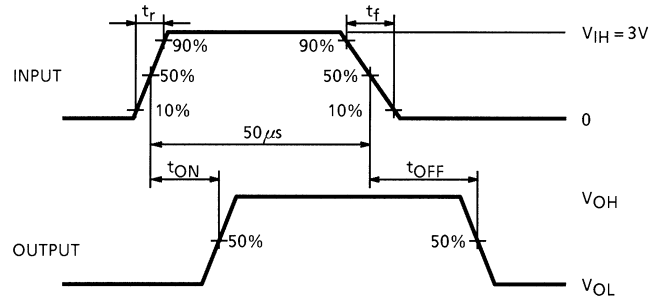
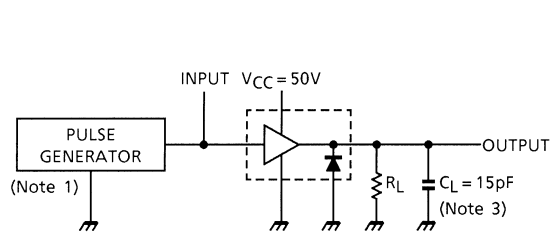
### 6. $I_R$



## 7. $V_F$



## 8. $t_{ON}$ , $t_{OFF}$



Note 1: Pulse Width 50  $\mu$ s, Duty Cycle 10%

Output Impedance 50  $\Omega$ ,  $t_r \leq 5$  ns,  $t_f \leq 10$  ns

Note 2:  $V_{IH} = 3$  V,  $E1 = V_{IH}$ ,  $\bar{E2} = \text{GND}$ ,  $V_{CC} = 50$  V

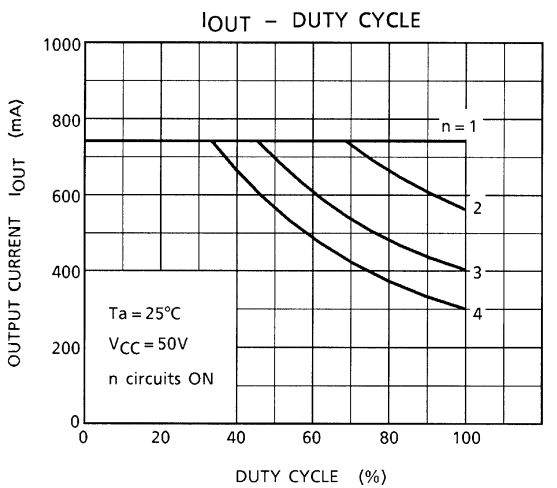
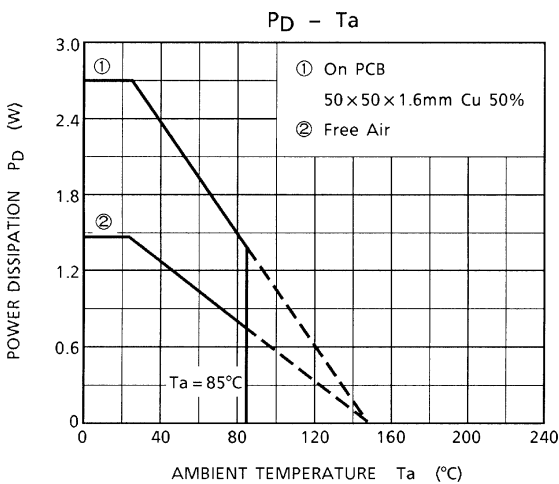
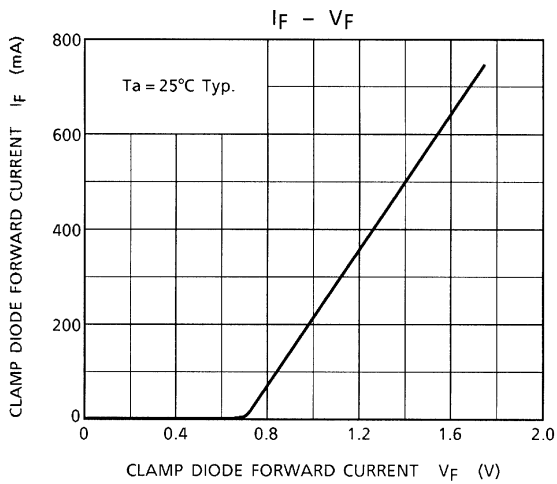
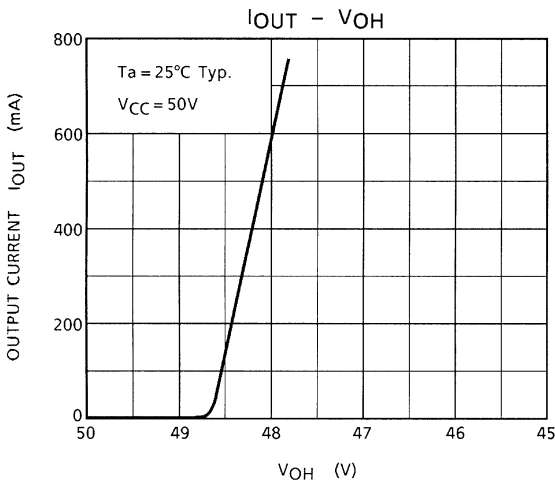
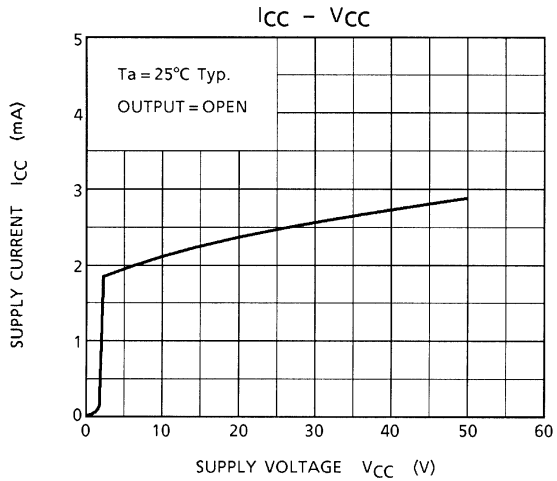
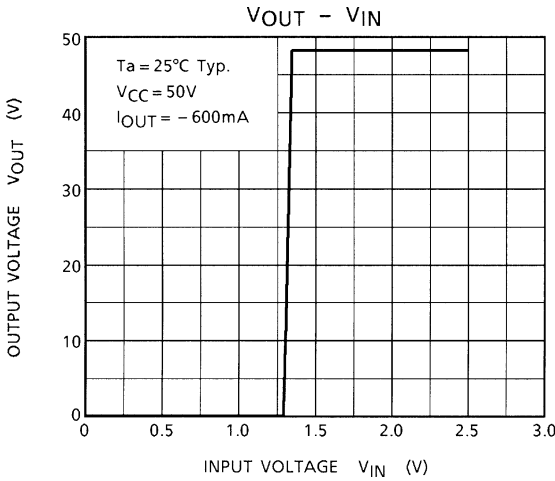
Note 3:  $C_L$  includes probe and jig capacitance

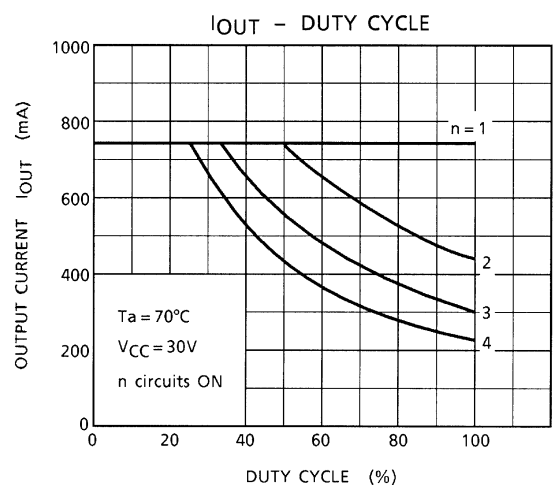
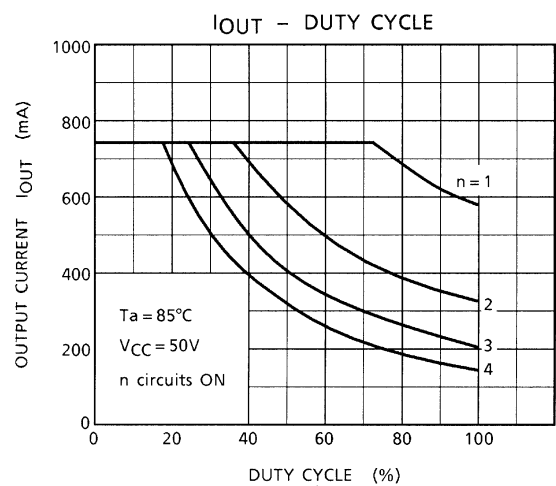
## PRECAUTIONS for USING

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

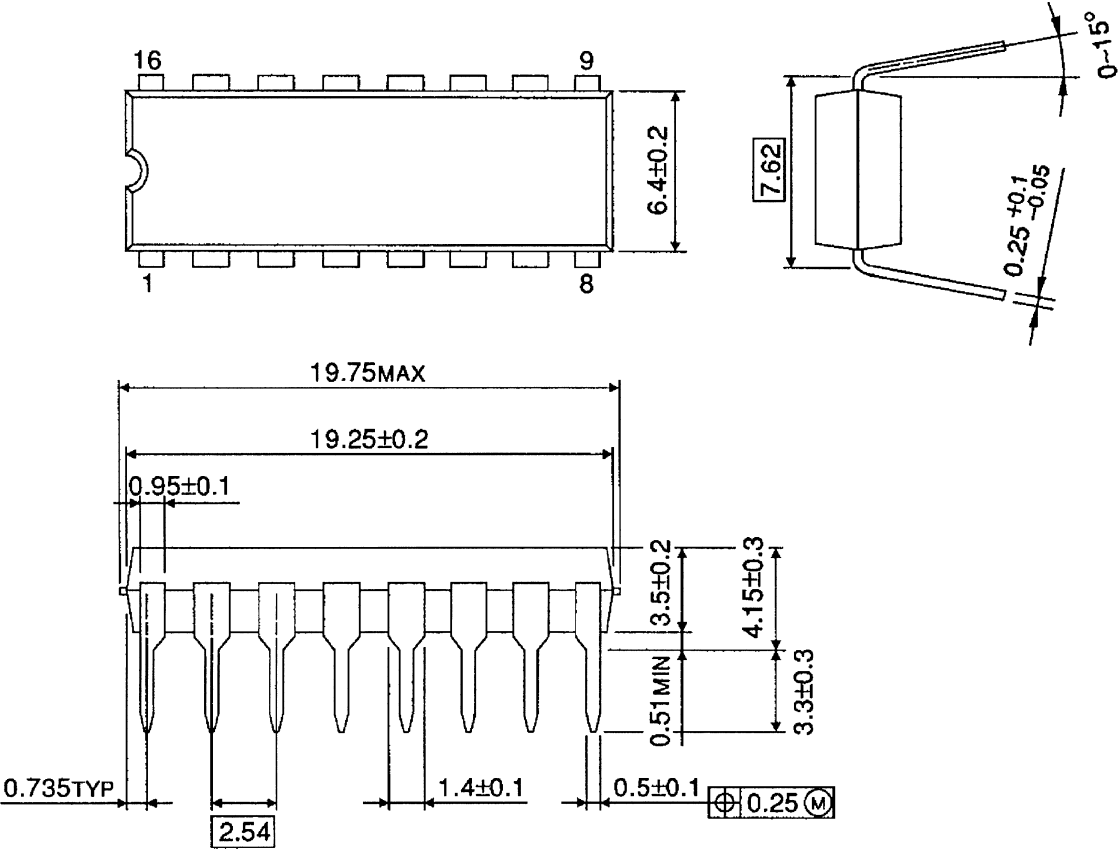




PACKAGE DIMENSIONS

DIP16-P-300-2.54A

Unit: mm



Weight: 1.11 g (Typ.)

**RESTRICTIONS ON PRODUCT USE**

000707EBA

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