

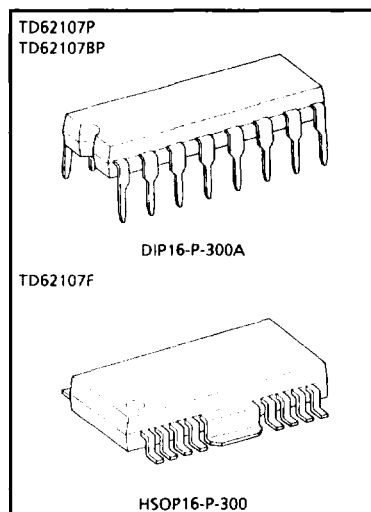
4CH HIGH-CURRENT DARLINGTON SINK DRIVER

The TD62107P/BP/F are high-voltage, high-current darlington drivers and enable inputs which can gate the outputs. All units feature integral clamp diodes for switching inductive loads.

The TD62107P/BP/F have a wide supply voltage range and all input are compatible with TTL and 5V CMOS. Application include relay, hammer, lamp and stepping moter drivers.

FEATURES

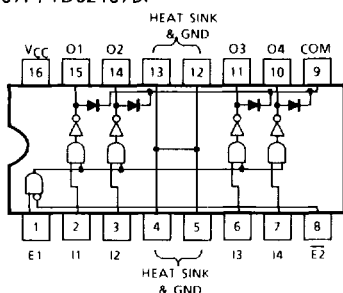
- Output current (single output) 750mA MAX.
- High sustaining voltage output 80V MIN. (TD62107BP)
45V MIN. (TD62107P)
35V MIN. (TD62107F)
- Output clamp diodes
- Enable inputs E1, E2
- Wide supply voltage range $V_{CC} = 4.75 \sim 17V$
- Input compatible with TTL and 5V CMOS
- GND terminal = heat sink
- Package type-P, BP : DIP-16pin
- Package type-F : PFP-16pin



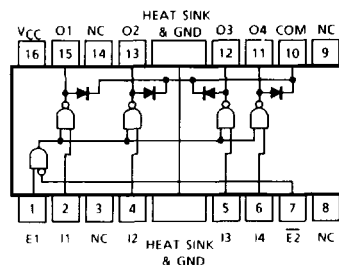
Weight DIP16-P-300A : 1.11g (Typ.)
HSOP16-P-300 : 0.50g (Typ.)

PIN CONNECTION (TOP VIEW)

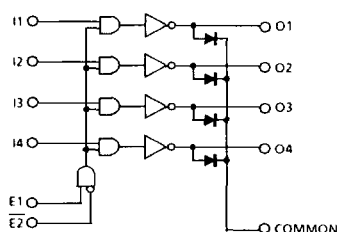
TD62107P / TD62107BP



TD62107F



SCHEMATICS (EACH DRIVER)

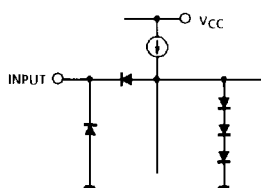


TRUTH TABLE

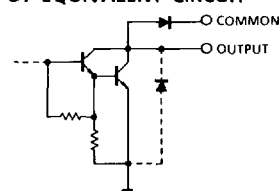
E1	$\bar{E}2$	I1 ~ I4	O1~O4
L	L	L or H	Disable OFF
L	H	L or H	Disable OFF
H	L	L or H	Enable In
H	H	L or H	Disable OFF

$I_n = I1 \sim I4$

INPUT EQUIVALENT CIRCUIT



OUTPUT EQUIVALENT CIRCUIT



(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}	-0.5~17	V
Output Sustaining Voltage	P	-0.5~45	V
	BP	-0.5~80	
	F	-0.5~35	
Output Current	I_{OUT}	750	mA
Input Voltage	V_{IN}	-0.5~ $V_{CC} + 0.5$	V
Clamp Diode Reverse Voltage	P	45	V
	BP	80	
	F	35	
Clamp Diode Forward Current	P, F	500	mA
	BP	750	
Power Dissipation	P, BP	2.7 (Note 1)	W
	F	1.4 (Note 2)	
Operating Temperature	T_{opr}	-40~85	°C
Storage Temperature	T_{stg}	-55~150	°C

(Note 1) On Glass Epoxy (50×50×1.6mm Cu 50%)

(Note 2) On Glass Epoxy (60×30×1.6mm Cu 30%)

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

CHARACTERISTIC		SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage		V _{CC}		4.75	—	15	V
Output Sustaining Voltage	P	V _{CE (SUS)}		0	—	45	V
	BP			0	—	80	
	F			0	—	35	
Output Current	P, F	I _{OUT}	T _{pw} = 25ms, Duty = 75%, 1 Circuit	0	—	500	mA
	BP		T _{pw} = 25ms, Duty = 10%, 4 Circuits	0	—	750	
	P, BP		T _{pw} = 25ms, 4 Circuits	0	—	400	
	F			—	—	300	
Input Voltage		V _{IN}		0	—	V _{CC}	V
Clamp Diode Reverse Voltage	P	V _R		—	—	45	V
	BP			—	—	80	
	F			—	—	35	
Clamp Diode Forward Current	P, F	I _F		—	—	500	mA
	BP			—	—	750	
Power Dissipation	P, BP	P _D		—	—	1.0	W
	F		(Note)	—	—	0.7	

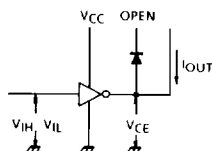
(Note) On Glass Epoxy PCB (60×30×1.6mm Cu 30%)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

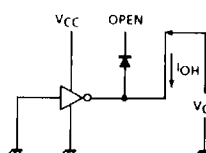
CHARACTERISTIC			SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Voltage	"H" Level		V _{IH}	1		2.0	—	V _{CC}	V
	"L" Level		V _{IL}			—	—	0.8	
Output Current	"H" Level	P	I _{OH}	2	V _{CE} = 45V, Ta = 75°C	—	—	100	μA
		BP			V _{CE} = 80V, Ta = 85°C	—	—	100	
		F			V _{CE} = 35V, Ta = 85°C	—	—	100	
Output Voltage	"L" Level	P, F	V _{OL}	3	I _{OUT} = 50mA	—	—	1.3	V
		BP			I _{OUT} = 750mA	—	—	1.6	
Input Current	"H" Level		I _{IH}	4	V _{IN} = 13V	—	—	100	μA
	"L" Level		I _{IL}	5	V _{IN} = 0.4V	—	—	~0.3	mA
Clamp Diode Reverse Current		P	I _R	6	V _R = 45V	—	—	100	μA
		BP			V _R = 80V	—	—	100	
		F			V _R = 35V	—	—	100	
Clamp Diode Forward Voltage		P, F	V _F	7	I _F = 500mA	—	—	2.0	V
		BP			I _F = 750mA	—	—	2.0	
Supply Current	Output "H"	I _{CC}	I _{CCH}	4	V _{CC} = 13V, V _{IN} = 0V, OUTPUT OPEN	—	—	13	mA
	Output "L"		I _{CCL}	5	V _{CC} = 13V, V _{IN} = 5V, OUTPUT OPEN	—	—	17	
Turn-On Delay		P	t _{ON}	8	V _{CC} = 5V, R _L = 90Ω C _L = 15pF, V _{OUT} = 45V	—	5	—	μs
		BP			V _{CC} = 5V, V _{OUT} = 80V R _L = 160Ω	—	0.4	—	
		F			V _{CC} = 5V, R _L = 70Ω C _L = 15pF, V _{OUT} = 35V	—	5	—	
Turn-Off Delay		P	t _{OFF}	8	V _{CC} = 5V, R _L = 90Ω C _L = 15pF, V _{OUT} = 45V	—	5	—	μs
		BP			V _{CC} = 5V, V _{OUT} = 80V R _L = 160Ω	—	1.7	—	
		F			V _{CC} = 5V, R _L = 70Ω C _L = 15pF, V _{OUT} = 35V	—	5	—	

TEST CIRCUIT

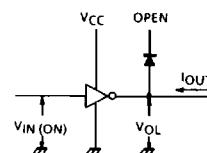
1. V_{IH} , V_{IL}



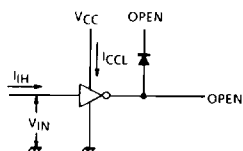
2. I_{OH}



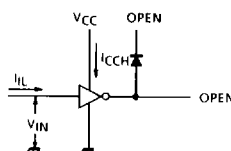
3. V_{OL}



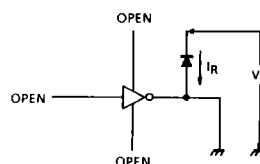
4. I_{IH} , I_{CCL}



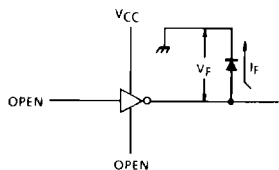
5. I_{IL} , I_{CCH}



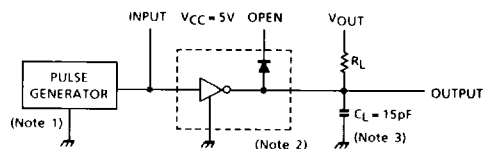
6. I_R



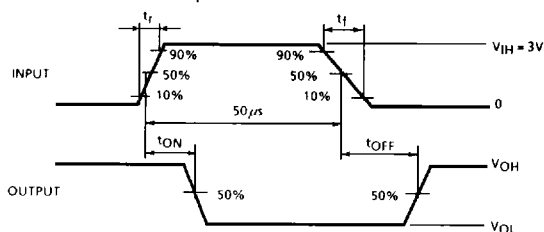
7. V_F



8. t_{ON} , t_{OFF}



Input condition



(Note 1) Pulse Width 50µs, Duty Cycle 10%
Output Impedance 50Ω, $t_r \approx 5\text{ns}$, $t_f \approx 10\text{ns}$

(Note 2) $V_{IH} = 3\text{V}$, $E1 = V_{IH}$, $\overline{E2} = \text{GND}$, $V_{CC} = 5\text{V}$

(Note 3) C_L includes probe and jig capacitance

