

8ch DARLINGTON SINK DRIVER

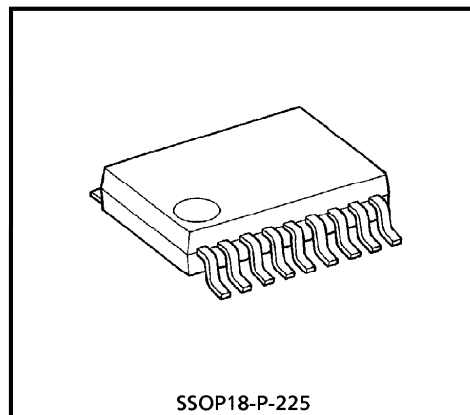
The TD62083AFN and TD62084AFN are high-voltage, high-current darlington drivers comprised of eight NPN darlington pairs.

All units feature integral clamp diodes for switching inductive loads.

Applications include relay, hammer, lamp and display (LED) drivers.

FEATURES

- Package Type : SSOP18 pin
- High Sustaining Voltage Output : 50V (Min.)
- Output Current (Single Output) : 500mA / ch (Max.)
- Output Clamp Diodes
- Inputs compatible with Various Types of Logic.

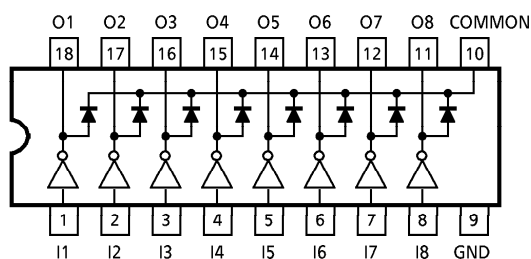


SSOP18-P-225

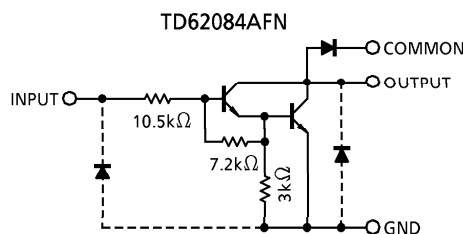
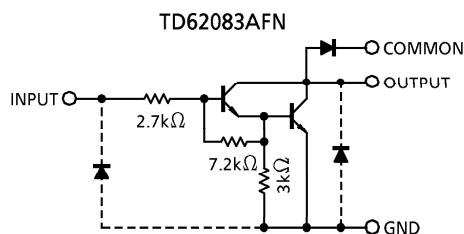
Weight : 0.09g (Typ.)

TYPE	INPUT BASE RESISTOR	DESIGNATION
TD62083AFN	2.7k Ω	TTL, 5V C-MOS
TD62084AFN	10.5k Ω	6~15V P-MOS, C-MOS

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
Output Sustaining Voltage	V _{CE(SUS)}	− 0.5~50	V
Output Current	I _{OUT}	500	mA / ch
Input Voltage	V _{IN}	− 0.5~30	V
Clamp Diode Reverse Voltage	V _R	50	V
Clamp Diode Forward Current	I _F	500	mA
Power Dissipation	P _D *	0.96	W
Operating Temperature	T _{opr}	− 40~85	°C
Storage Temperature	T _{stg}	− 55~150	°C

*On Glass Epoxy PCB (50×50×1.6mm Cu 40%)

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

CHARACTERISTIC		SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Output Sustaining Voltage		V _{CE(SUS)}		0	—	50	V
Output Current		I _{OUT} *	DC 1 Circuit	—	—	350	mA / ch
			T _{pw} = 25ms, 8 Circuits	0	—	260	
			Ta = 85°C, T _j = 120°C	0	—	90	
Input Voltage		V _{IN}		0	—	30	V
Input Voltage (Output ON)	TD62083	V _{IN(ON)}		3.5	—	30	V
	TD62084			8	—	30	
Clamp Diode Reverse Voltage		V _R		—	—	50	V
Clamp Diode Forward Current		I _F		—	—	400	mA
Power Dissipation		P _D *		—	—	0.4	W

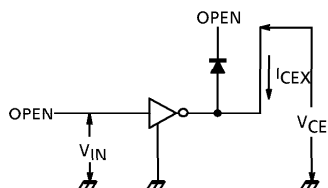
*On Glass Epoxy PCB (50×50×1.6mm Cu 40%)

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

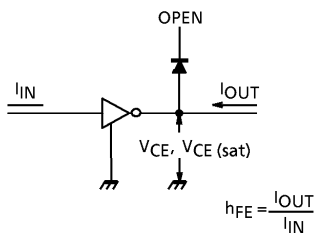
CHARACTERISTIC		SYMBOL	TEST CIR- CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Leakage Current	TD62083	I _{CEX}	1	V _{CE} = 50V	T _a = 25°C	—	—	50	μA
	V _{CE} = 50V			T _a = 85°C	—	—	100		
	TD62084			V _{CE} = 50V	V _{IN} = 1V	—	—	500	
Output Saturation Voltage		V _{CE} (sat)	2	I _{OUT} = 350mA, I _{IN} = 500μA		—	1.3	1.6	V
				I _{OUT} = 200mA, I _{IN} = 350μA		—	1.1	1.3	
				I _{OUT} = 100mA, I _{IN} = 250μA		—	0.9	1.1	
Input Current	TD62083	I _{IN} (ON)	3	V _{IN} = 3.85V		—	0.93	1.35	mA
	V _{IN} = 5V			—	0.35	0.5			
	V _{IN} = 12V			—	1.0	1.45			
			I _{IN} (OFF)	4	I _{OUT} = 500μA, T _a = 85°C		50	65	—
Input Voltage	TD62083	V _{IN} (ON)	5	V _{CE} = 2V, I _{OUT} = 200mA		—	—	2.4	V
				V _{CE} = 2V, I _{OUT} = 250mA		—	—	2.7	
				V _{CE} = 2V, I _{OUT} = 300mA		—	—	3.0	
	TD62084			V _{CE} = 2V, I _{OUT} = 125mA		—	—	5.0	
				V _{CE} = 2V, I _{OUT} = 200mA		—	—	6.0	
				V _{CE} = 2V, I _{OUT} = 275mA		—	—	7.0	
				V _{CE} = 2V, I _{OUT} = 350mA		—	—	8.0	
DC Current Transfer Ratio		h _{FE}	2	V _{CE} = 2V, I _{OUT} = 350mA		1000	—	—	
Clamp Diode Reverse Current		I _R	6	T _a = 25°C V _R = 50V		—	—	50	μA
				T _a = 85°C V _R = 50V		—	—	100	
Clamp Diode Forward Voltage		V _F	7	I _F = 350mA		—	—	2.0	V
Input Capacitance		C _{IN}	—			—	15	—	pF
Turn-On Delay		t _{ON}	8	R _L = 125Ω, V _{OUT} = 50V		—	0.1	—	μs
Turn-Off Delay		t _{OFF}		R _L = 125Ω, V _{OUT} = 50V		—	0.2	—	

TEST CIRCUIT

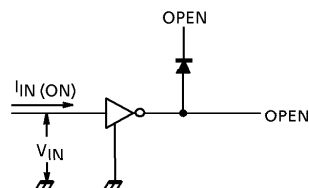
1. I_{CEX}



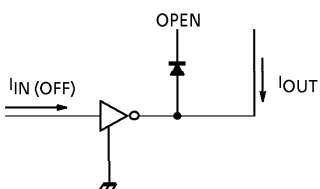
2. $V_{CE(sat)}$, h_{FE}



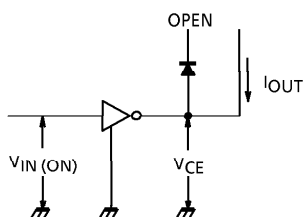
3. $I_{IN(ON)}$



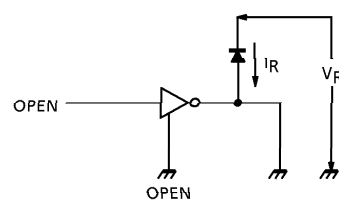
4. $I_{IN(OFF)}$



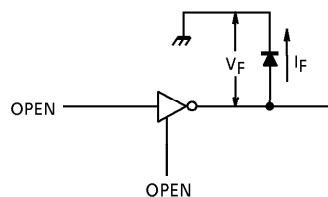
5. $V_{IN(ON)}$



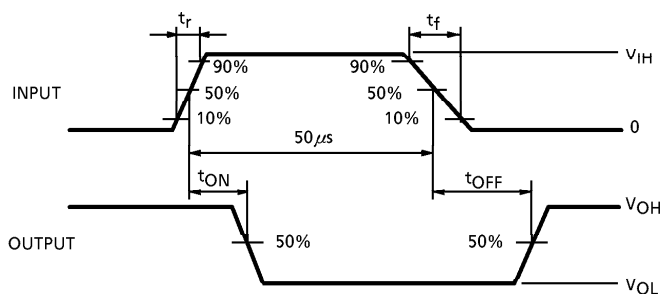
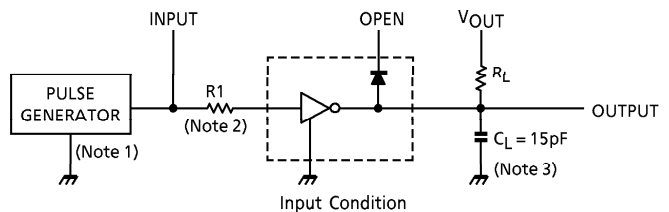
6. I_R



7. V_F



8. t_{ON} , t_{OFF}



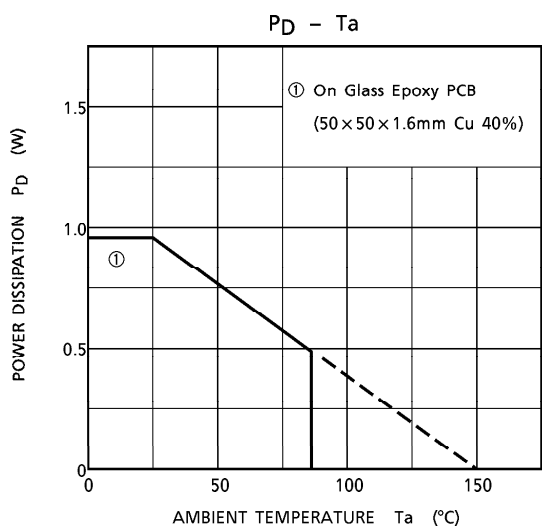
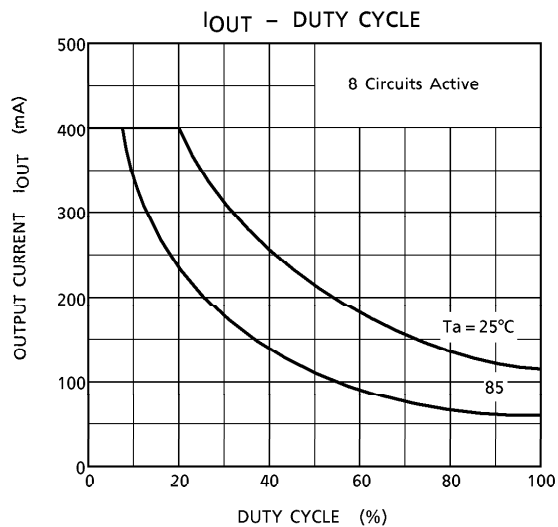
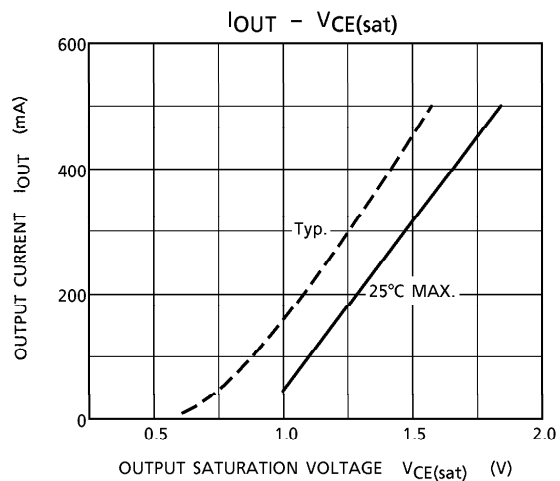
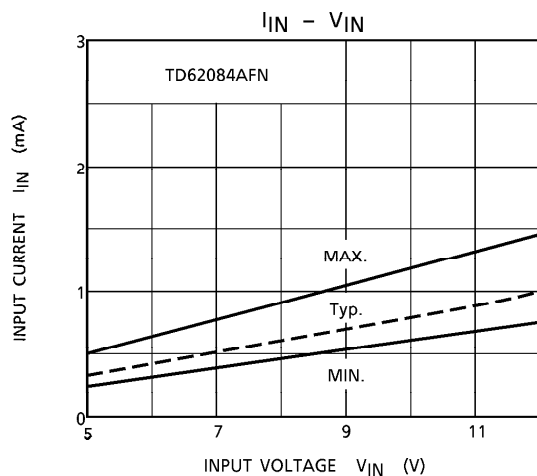
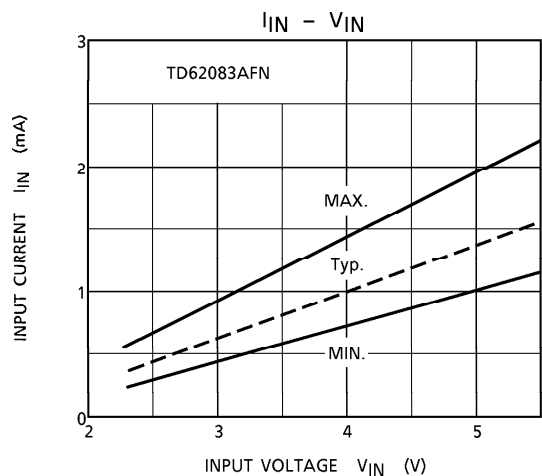
Note 1 : Pulse Width $50\mu s$, Duty Cycle 10%
Output Impedance 50Ω , $t_r \leq 5ns$, $t_f \leq 10ns$

Note 2 : See below

Input Condition

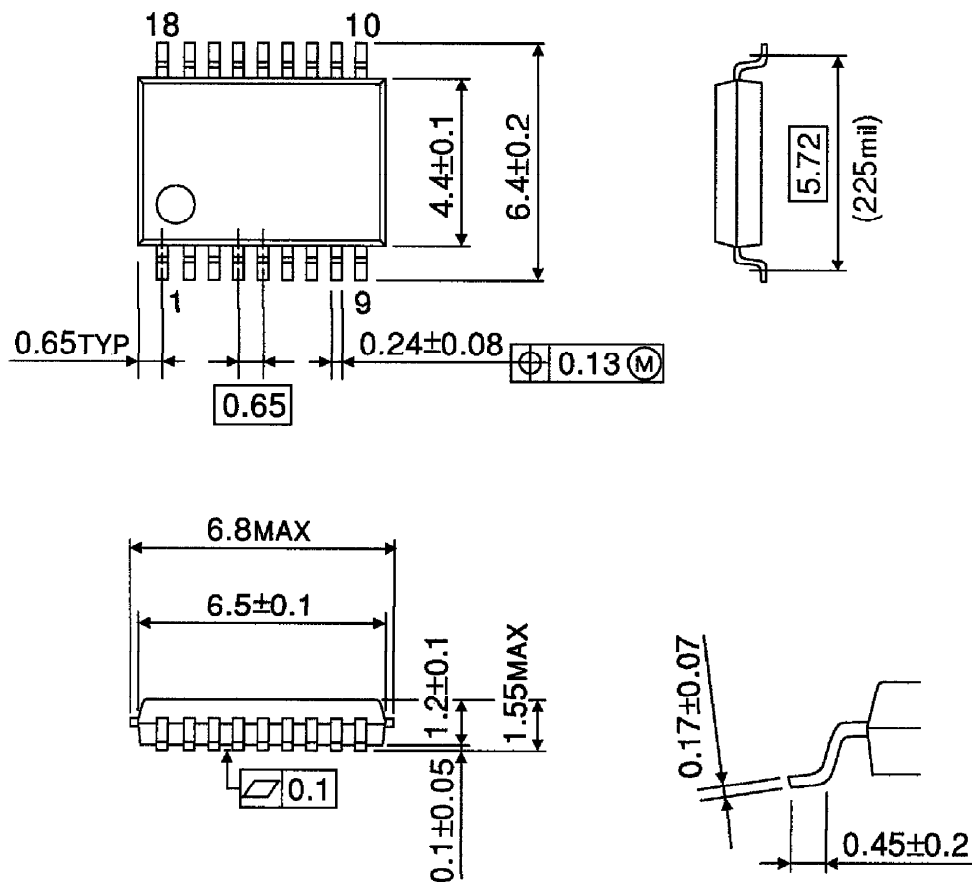
TYPE NUMBER	R1	V_{IH}
TD62083AFN	0	3V
TD62084AFN	0	8V

Note 3 : C_L includes probe and jig capacitance.



OUTLINE DRAWING
 SSOP18-P-225

Unit : mm



Weight : 0.09g (Typ.)