

TOSHIBA

TD62786AFN

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

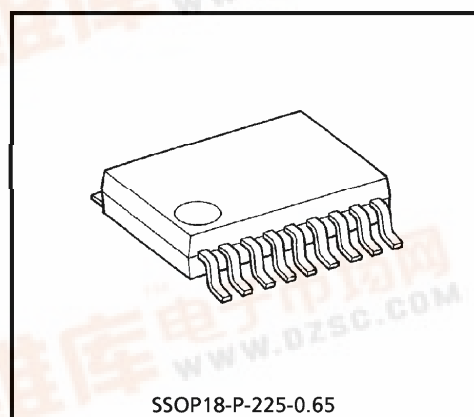
TD62786AFN

8ch HIGH-VOLTAGE SOURCE-CURRENT DRIVER

The TD62786AFN is eight Channel Non-Inverting Source current Transistor Array. All units feature integral clamp diodes for switching inductive loads. Applications include relay, hammer and lamp drivers.

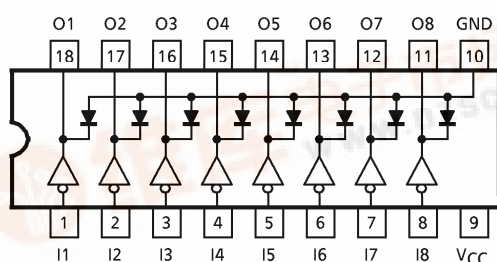
FEATURES

- Package Type : SSOP18 PIN
- High Output Voltage : $V_{CE(SUS)} = 50V$ (Min.)
- Output Current (Single Output) : $I_{OUT} = -500mA / ch$ (Max.)
- Low Level Active Input
- Output Clamp Diodes
- Input Compatible with TTL, 5V CMOS
- Single Supply Voltage

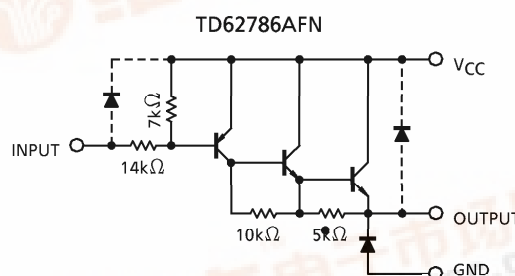


Weight : 0.09g (Typ.)

PIN CONNECTION (TOP VIEW)



SCHEMATICS (EACH DRIVER)



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

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MAXIMUM RATING ($T_a = 25^\circ\text{C}$, $V_{CC} = 0\text{V}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC} - V_{GND}$	50	V
Output Sustaining Voltage	$V_{CE}(\text{SUS})$	- 50	V
Output Current	I_{OUT}	- 500	mA / ch
Input Voltage	V_{IN}	- 30 ~ 0.5	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	$^\circ\text{C}$
Storage Temperature	T_{stg}	- 55 ~ 150	$^\circ\text{C}$

(*) On Glass Epoxy PCB ($50 \times 50 \times 1.6\text{mm}$ Cu 40%)**RECOMMENDED OPERATING CONDITIONS** ($T_a = -40 \sim 85^\circ\text{C}$, $V_{CC} = 0\text{V}$)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	$V_{CC} - V_{GND}$		—	—	50	V
Output Sustaining Voltage	$V_{CE}(\text{SUS})$		—	—	- 50	V
Output Current	$I_{OUT} (*)$	DC 1 Circuit	—	—	- 350	mA / ch
		$T_{pw} = 25\text{ms}$, $T_j = 120^\circ\text{C}$, $T_a = 85^\circ\text{C}$, 8 Circuits				
		Duty = 10%	0	—	- 180	
		Duty = 50%	0	—	- 38	
Input Voltage	V_{IN}		- 30	—	0	V
Clamp Diode Reverse Voltage	V_R		—	—	50	V
Clamp Diode Forward Current	I_F		—	—	350	mA
Power Dissipation	$P_D (*)$		—	—	0.4	W

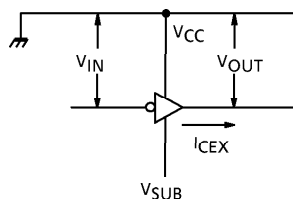
(*) On Class Epoxy PCB ($50 \times 50 \times 1.6\text{mm}$ Cu 40%)

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$, $V_{CC} = 0\text{V}$)

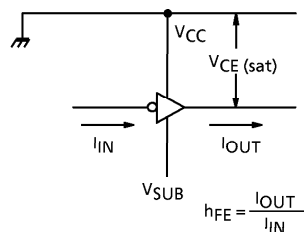
CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I_{CEX}	1	$V_{OUT} = V_{GND} = -50\text{V}$ $T_a = 85^\circ\text{C}$	—	—	-100	μA
Output Saturation Voltage	$V_{CE(sat)}$	2	$V_{IN} = V_{IL} \text{ MAX.}$ $I_{OUT} = -100\text{mA}$	—	—	-1.8	V
			$V_{IN} = V_{IL} \text{ MAX.}$ $I_{OUT} = -350\text{mA}$	—	—	-2.0	
DC Current transfer Ratio	h_{FE}	2	$V_{CC} = 0\text{V}$, $V_{CE} = 3\text{V}$ $I_{OUT} = -350\text{mA}$	1000	—	—	
Input Voltage	"H" Level	V_{IN}		-1.2	—	0	V
	"L" Level			-30	—	-2.8	
Input Current	$I_{IN(ON)}$	3	$V_{CC} = 5.5\text{V}$, $V_{IN} = 0.4\text{V}$	—	—	-0.4	mA
Clamp Diode Reverse Current	I_R	—	$V_R = V_R \text{ MAX.}$, $T_a = 85^\circ\text{C}$	—	—	100	μA
Clamp Diode Forward Voltage	V_F	—		—	—	2.0	V
Turn-On Delay	t_{ON}	5	$V_{OUT} = -50\text{V}$, $R_L = 125\Omega$ $C_L = 15\text{pF}$	—	0.2	—	μs
Turn-Off Delay	t_{OFF}			—	1.0	—	

TEST CIRCUIT

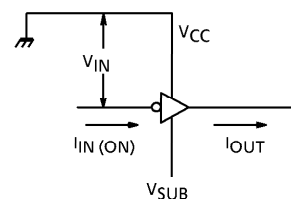
1. I_{CEX}



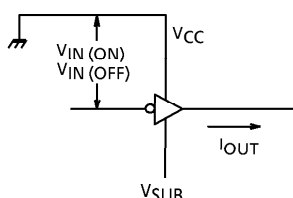
2. $V_{CE(sat)}$, h_{FE}



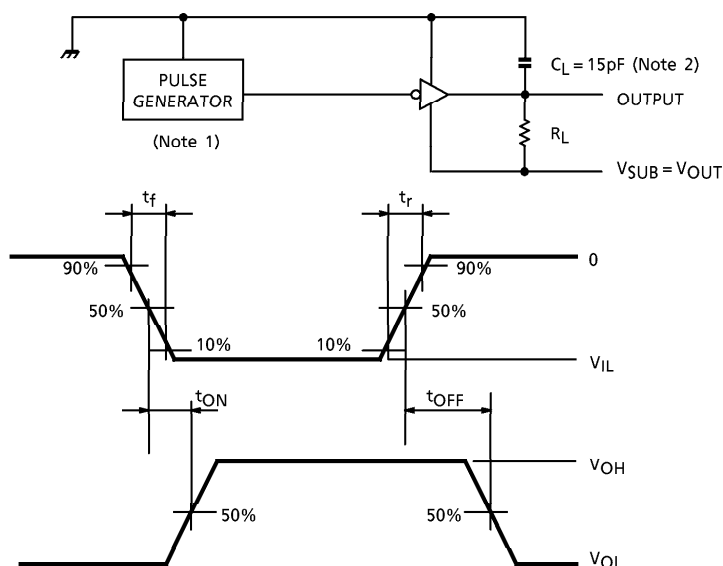
3. $I_{IN(ON)}$



4. $V_{IN(ON)}$, $V_{IN(OFF)}$



5. t_{ON} , t_{OFF}

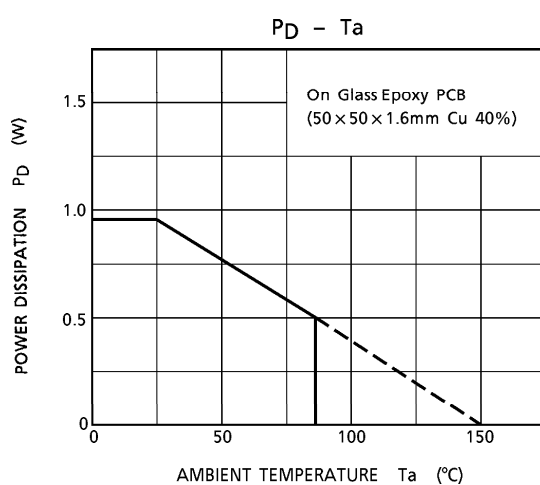
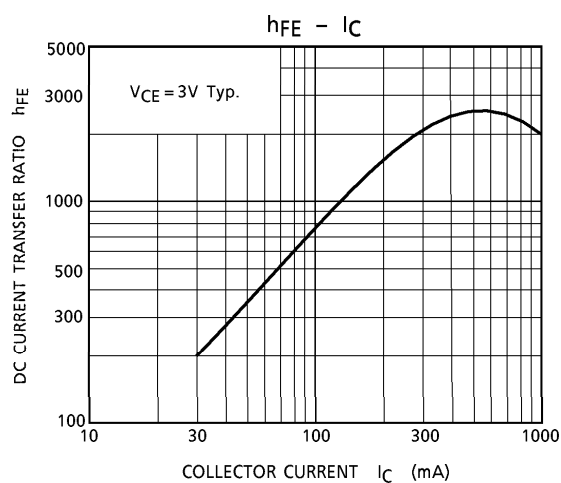
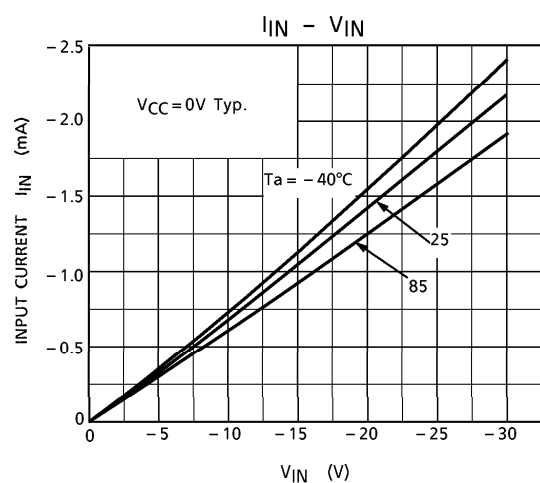
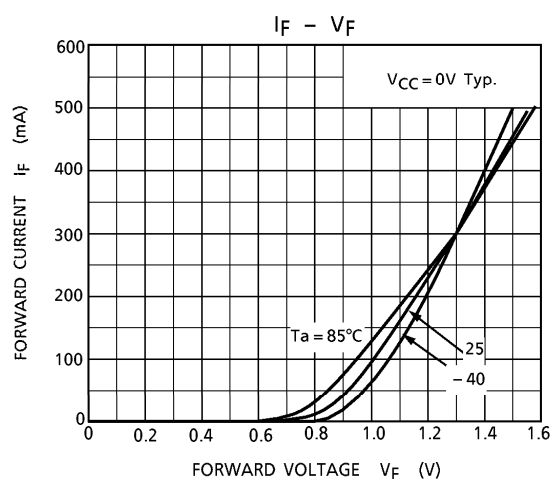
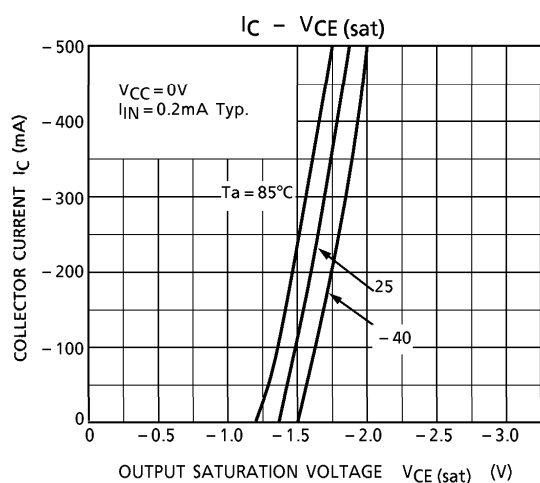


(Note 1) Pulse Width $50\mu s$, Duty Cycle 10%
Output Impedance 50Ω , $t_r \leq 10ns$, $t_f \leq 5ns$

(Note 2) C_L includes probe and jig capacitance

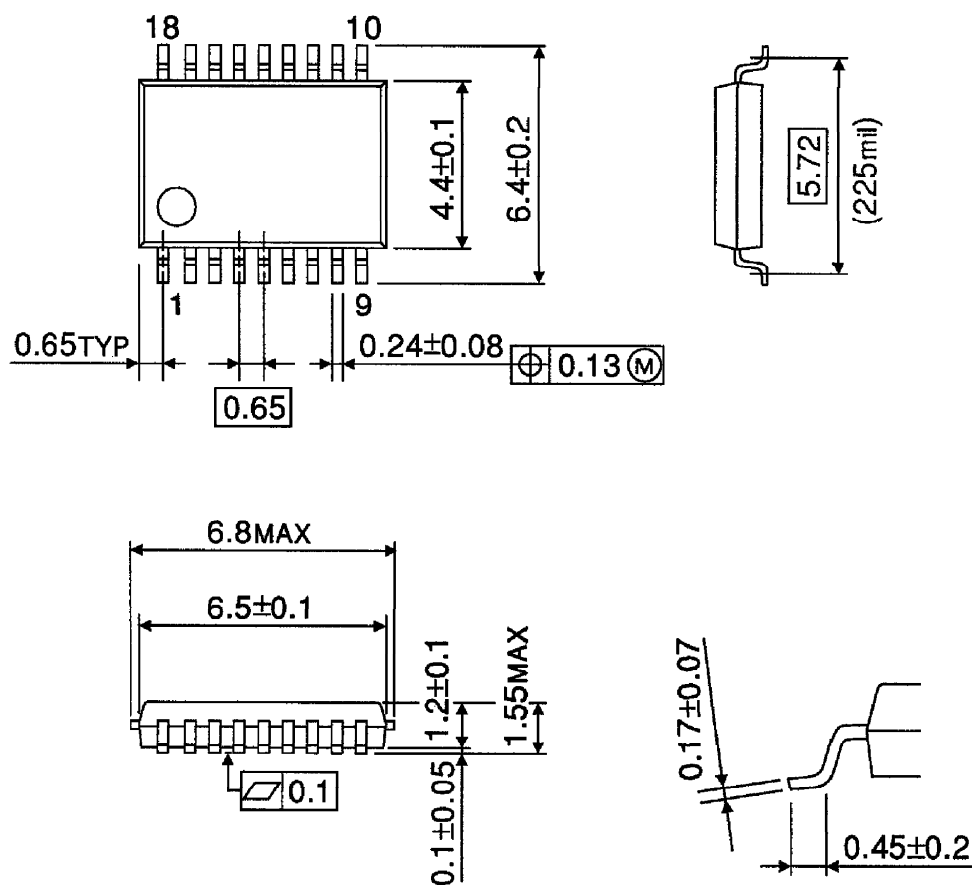
PRECAUTIONS for USING

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.



OUTLINE DRAWING
SSOP18-P-225-0.65

Unit : mm



Weight : 0.09g (Typ.)