

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

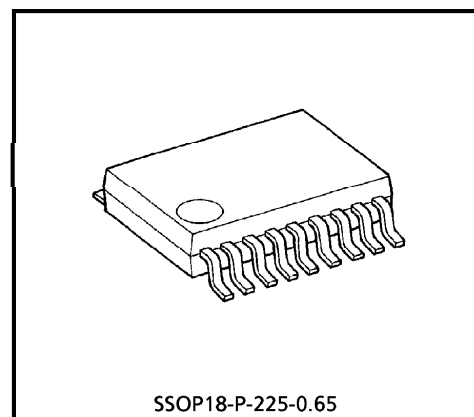
TD62786AFN

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.

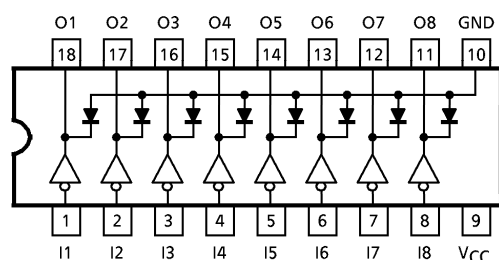
FEATURES

- 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

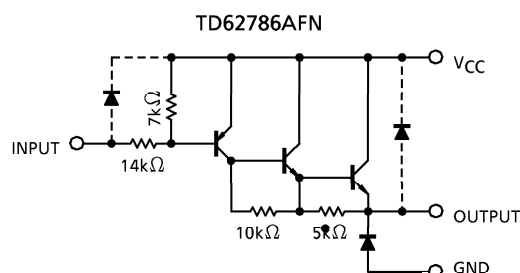


Weight : 0.09g (Typ.)

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	$V_{CE(SUS)}$	- 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	$^\circ\text{C}$

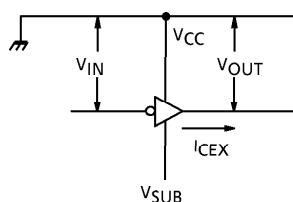
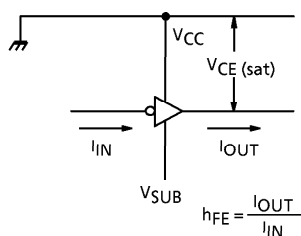
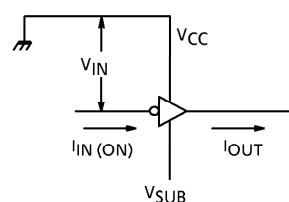
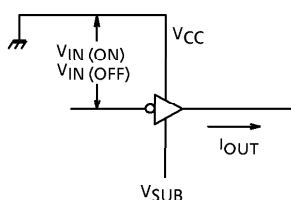
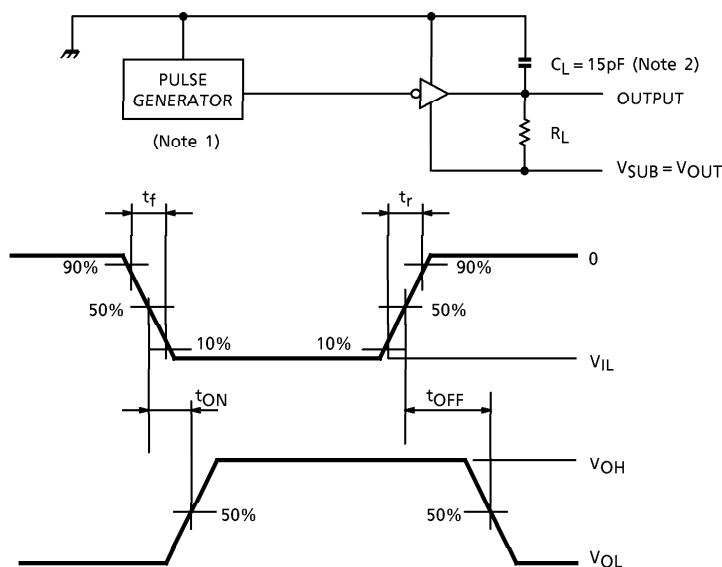
(*) On Glass Epoxy PCB ($50 \times 50 \times 1.6\text{mm}$ Cu 40%)**RECOMMENDED OPERATING CONDITIONS** ($T_a = -40 \sim 85^\circ\text{C}$, $V_{CC} = 0\text{V}$)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	$V_{CC} - V_{GND}$		—	—	50	V
Output Sustaining Voltage	$V_{CE(SUS)}$		—	—	- 50	V
Output Current	$I_{OUT} (*)$	DC 1 Circuit	—	—	- 350	mA / ch
		$T_{pw} = 25\text{ms}$, $T_j = 120^\circ\text{C}$, $T_a = 85^\circ\text{C}$, Duty = 10%	0	—	- 180	
		8 Circuits 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 (Ta = 25°C, V_{CC} = 0V)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I _{CEX}	1	V _{OUT} = V _{GND} = -50V Ta = 85°C	—	—	-100	μA
Output Saturation Voltage	V _{CE (sat)}	2	V _{IN} = V _{IL} MAX. I _{OUT} = -100mA	—	—	-1.8	V
			V _{IN} = V _{IL} MAX. I _{OUT} = -350mA	—	—	-2.0	
DC Current transfer Ratio	h _{FE}	2	V _{CC} = 0V, V _{CE} = 3V I _{OUT} = -350mA	1000	—	—	
Input Voltage	"H" Level	V _{IN}	4	-1.2	—	0	V
	"L" Level			-30	—	-2.8	
Input Current	I _{IN (ON)}	3	V _{CC} = 5.5V, V _{IN} = 0.4V	—	—	-0.4	mA
Clamp Diode Reverse Current	I _R	—	V _R = V _R MAX., Ta = 85°C	—	—	100	μA
Clamp Diode Forward Voltage	V _F	—		—	—	2.0	V
Turn-On Delay	t _{ON}	5	V _{OUT} = -50V, R _L = 125Ω C _L = 15pF	—	0.2	—	μs
Turn-Off Delay	t _{OFF}			—	1.0	—	

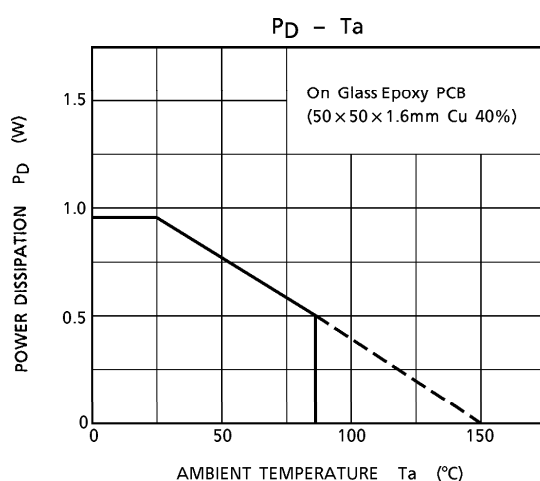
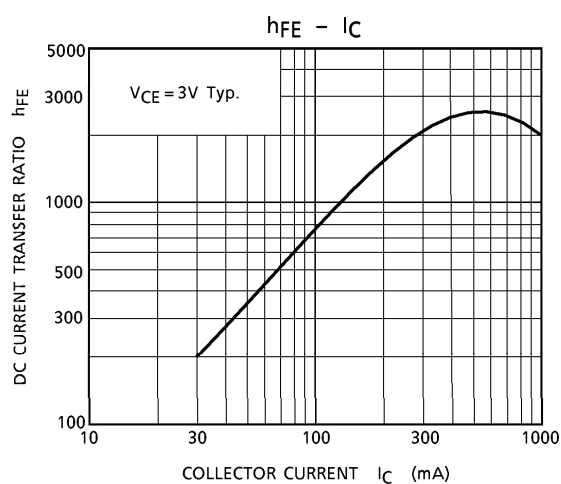
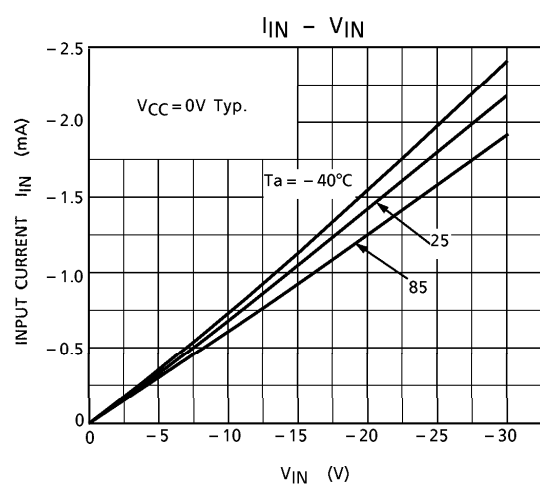
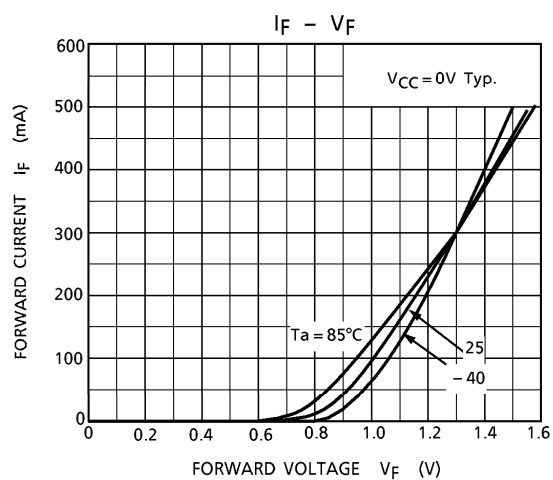
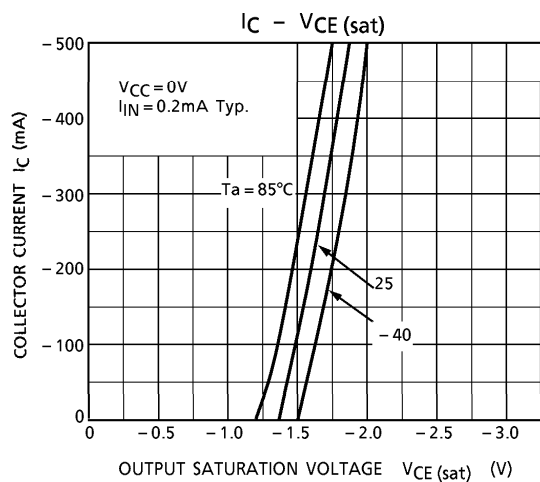
TEST CIRCUIT
1. I_{CEX}

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

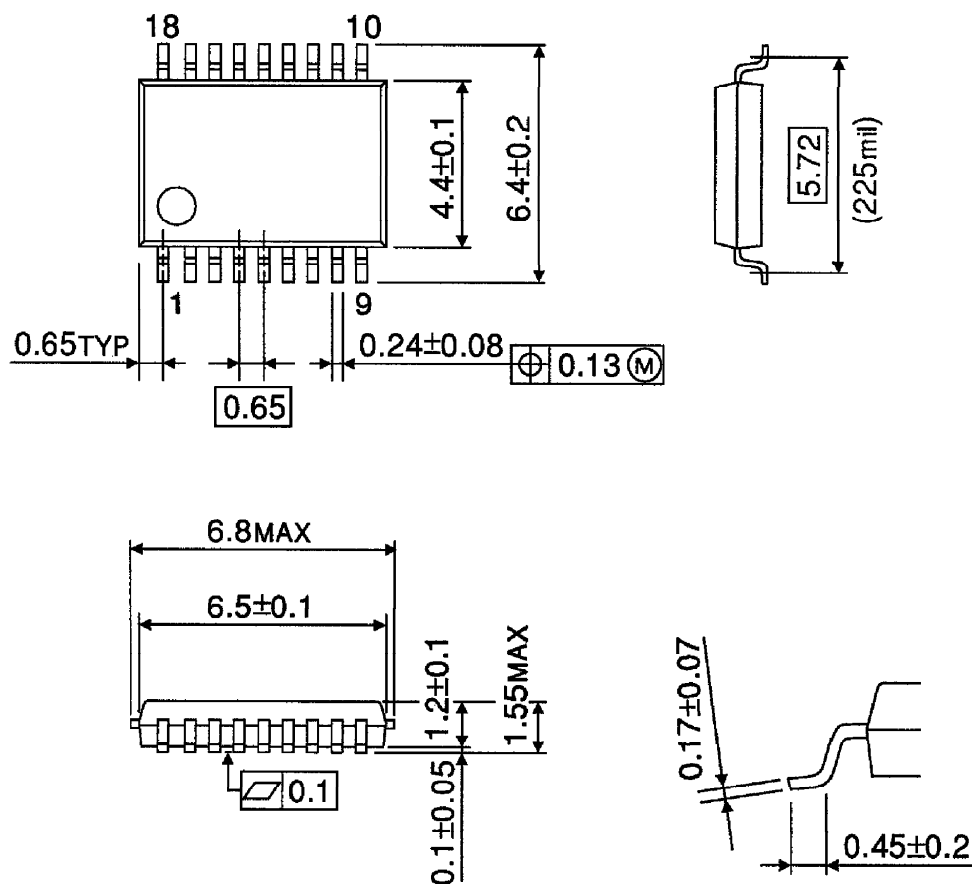
Utmost care is necessary in the design of the output line, V_{CC} and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.



OUTLINE DRAWING

SSOP18-P-225-0.65

Unit : mm



Weight : 0.09g (Typ.)