

TOSHIBA

TD62593,594,597,598AFN

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62593AFN, TD62594AFN, TD62597AFN, TD62598AFN

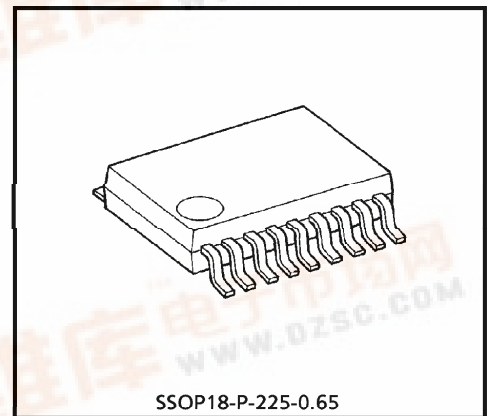
8ch SINGLE DRIVER : COMMON EMITTER

The TD62593, 4, 7, 8AFN are comprised of eight NPN Transistor Arrays.

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

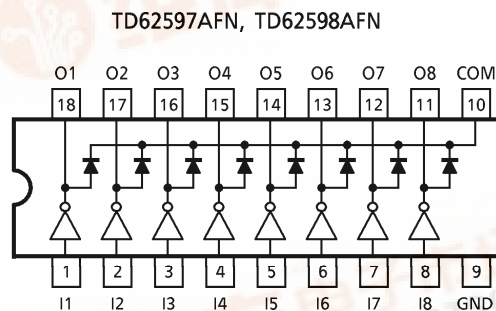
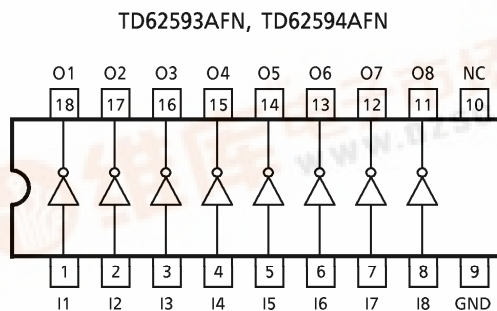
FEATURES

- Package Type : SSOP18pin
- High Sustaining Voltage Output : 50V (MIN.)
- Low Saturation Voltage : $V_{CE(sat)} = 0.8V$
 $@I_{OUT} = 150mA$ ·Inputs Compatible with Various type Logic.
- TD62593AFN, TD62597AFN : $R_{IN} = 2.7k\Omega$ TTL, 5V CMOS
- TD62594AFN, TD62598AFN : $R_{IN} = 10.5k\Omega$ 6~15V PMOS, CMOS



Weight : 0.09g (Typ.)

PIN CONNECTION (TOP VIEW)

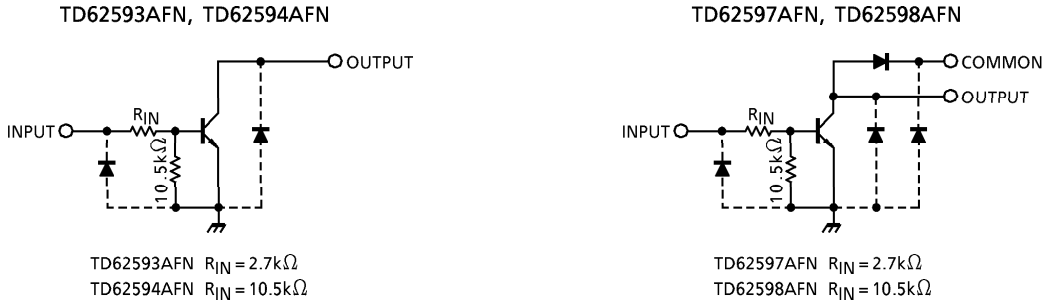


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SCHEMATICS (EACH DRIVER)



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

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	V_{CEO}	50	V
Collector-Base Voltage	V_{CBO}	50	V
Clamp Diode Reverse Voltage	V_R *1	50	V
Collector Current	I_C	200	mA / ch
Input Voltage	V_{IN}	- 0.5~30	V
Power Dissipation	P_D *2	0.96	W
Operating Temperature	T_{opr}	- 40~85	°C
Storage Temperature	T_{stg}	- 55~150	°C

- *1 : Except TD62593AFN, TD62594AFN
- *2 : On Glass Epoxy PCB (50 × 50 × 1.6mm Cu 40%)

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

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Collector-Emitter Voltage	V_{CEO}		0	—	50	V
Collector-Base Voltage	V_{CBO}		0	—	50	V
Collector Current	I_C		0	—	150	mA / ch
Clamp Diode Reverse Voltage	V_R *1		7	—	50	V
Input Voltage	V_{IN}		0	—	25	V
Input Current	I_{IN}		0	—	10	mA
Input Voltage (Output On)	TD62593AFN TD62597AFN	$V_{IN(ON)}$	2.4	—	25	V
	TD62594AFN TD62598AFN		7.0	—	25	
Power Dissipation	P_D *2		—	—	0.4	W

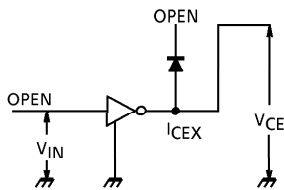
- *1 : Except TD62593AFN, TD62594AFN
- *2 : On Glass Epoxy PCB (50 × 50 × 1.6mm Cu 40%)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

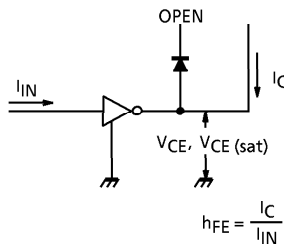
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	I_{CEX}	1	$V_{CE} = 50V, V_{IN} = 0$	—	—	10	μA
Output Saturation Voltage	$V_{CE(sat)}$	2	$I_C = 10mA, I_{IN} = 0.4mA$	—	—	0.2	V
			$I_C = 150mA, I_{IN} = 3.0mA$	—	—	0.8	
DC Current Transfer Ratio	h_{FE}	2	$V_{CE} = 10V, I_C = 10mA$	50	—	—	
Input Current	$I_{IN(ON)}$	3	TD62593AFN TD62597AFN $V_{IN} = 2.4V, I_C = 50mA$	—	—	0.9	mA
			TD62594AFN TD62598AFN $V_{IN} = 7.0V, I_C = 50mA$	—	—	0.9	
Turn-On Delay	t_{ON}	4	$V_{OUT} = 50V, R_L = 330\Omega$	—	0.1	—	μs
Turn-Off Delay	t_{OFF}			—	3.0	—	

TEST CIRCUIT

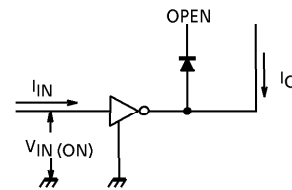
1. I_{CEX}



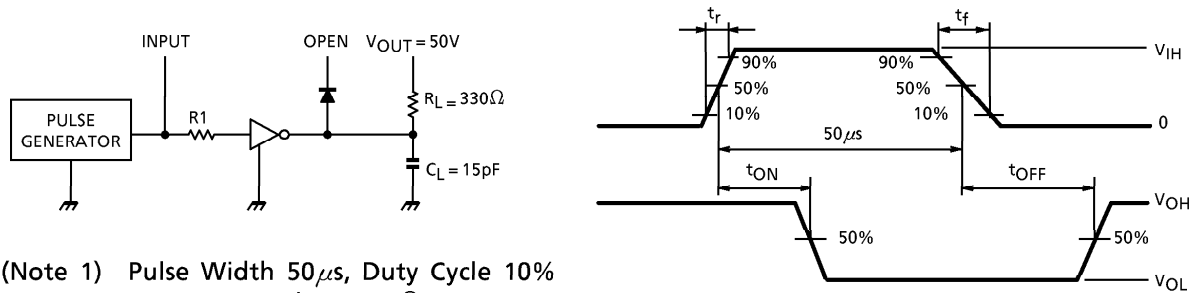
2. $h_{FE}, V_{CE(sat)}$



3. $I_{IN(ON)}$



4. 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

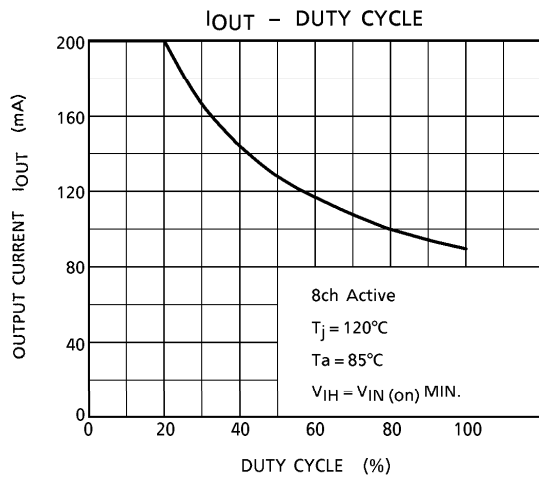
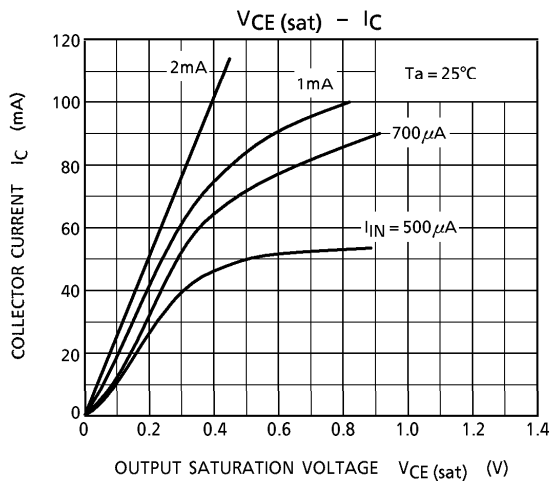
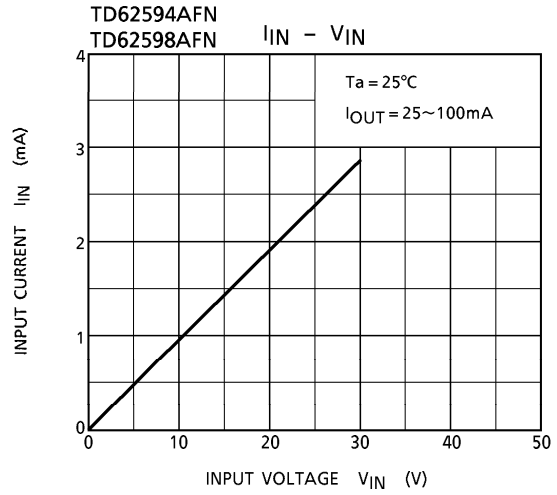
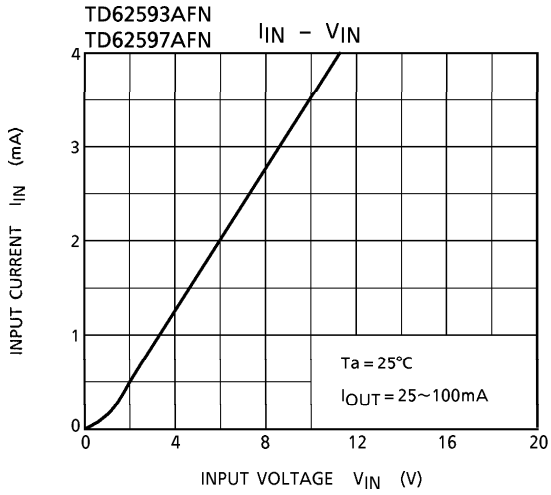
Input Condition

Type	R_{IN}	V_{IH}
TD62593AFN, TD62597AFN	0Ω	3V
TD62594AFN, TD62598AFN	0Ω	10V

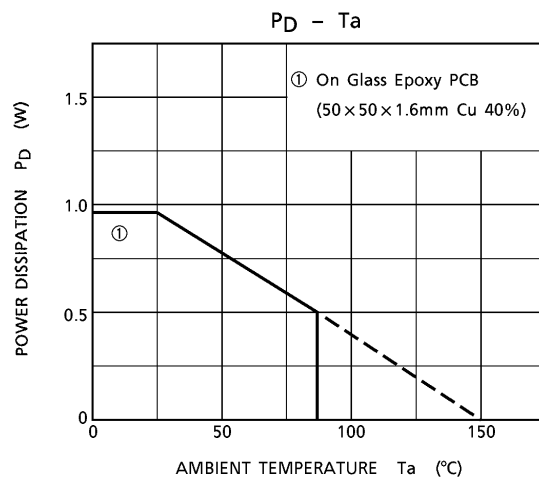
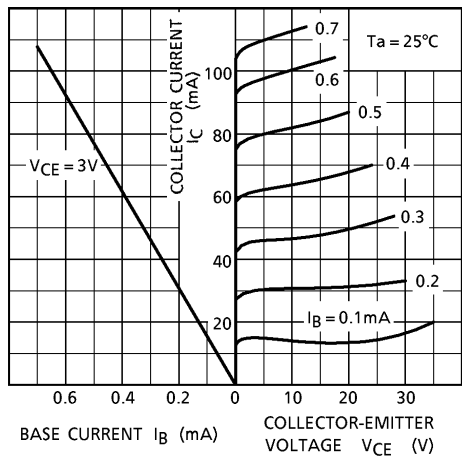
(Note 3) C_L includes probe and jig capacitance

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.

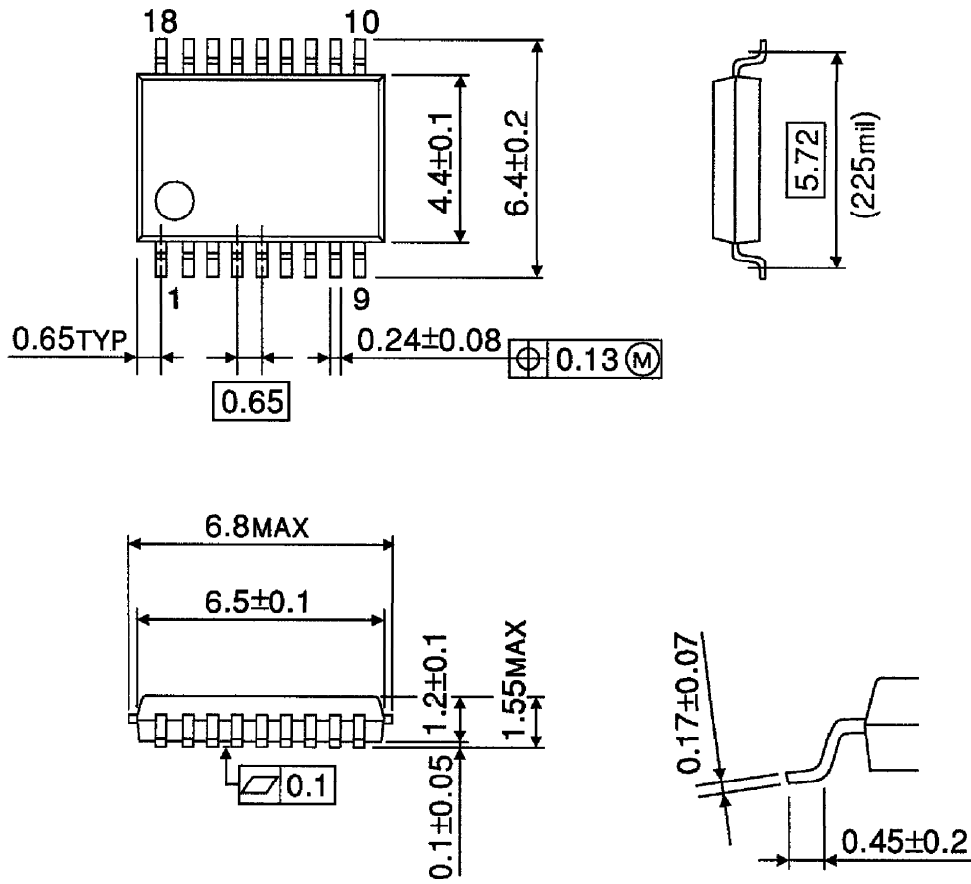


STATIC CHARACTERISTICS



OUTLINE DRAWING
SSOP18-P-225-0.65

Unit : mm



Weight : 0.09g (Typ.)