

TOSHIBA BIPOLAR DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TD62008AP, TD62008F, TD62008AF

7CH DARLINGTON SINK DRIVER

The TD62008AP /F /AF are high-voltage, high-current darlington drivers comprised of seven NPN darlington pairs.

All units feature integral clamp diodes for switching inductive loads and protective diodes against a negative input voltage.

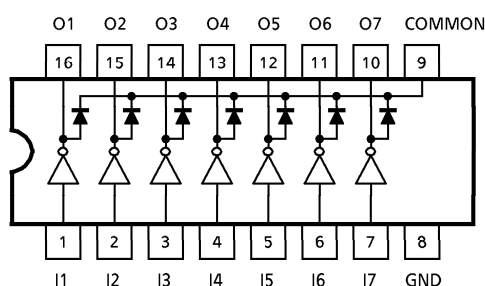
The TD62008AP/F/AF are suitable for interfaces from minus and plus dual supply voltage system to plus single supply voltage system.

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

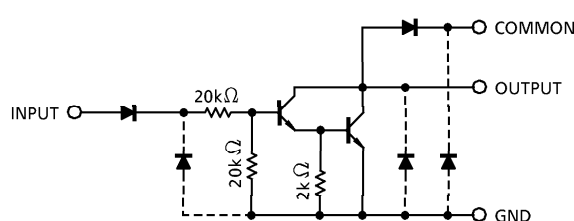
FEATURES

- Output current (single output) 400mA (Max.)
- High sustaining voltage output 50V (Min.)
- Output clamp diodes
- Protective diodes against a negative input voltage
- Inputs base resistor $R_{IN} = 20k\Omega$
- Inputs compatible with 9~15V PMOS, CMOS.
- Package type-AP : DIP-16pin
- Package type-F, AF : SOP-16pin

PIN CONNECTION (TOP VIEW)



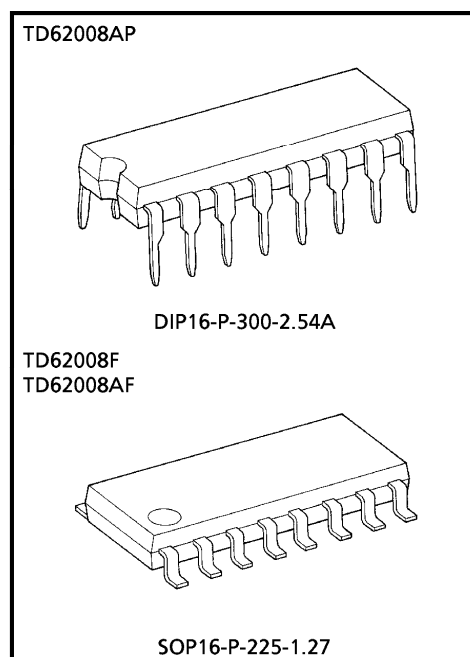
SCHEMATICS (EACH DRIVER)



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

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Weight
DIP16-P-300-2.54A : 1.11g (Typ.)
SOP16-P-225-1.27 : 0.16g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Sustaining Voltage	AP / AF	V _{CE} (SUS)	– 0.5 ~ 50	V
	F		– 0.5 ~ 35	
Output Current		I _{OUT}	400	mA/ch
Input Voltage		V _{IN}	– 40 ~ 40	V
Clamp Diode Reverse Voltage	AP / AF	V _R	50	V
	F		35	
Clamp Diode Forward Current		I _F	400	mA
Power Dissipation	AP	P _D	1.47	W
	F / AF		0.625 (Note)	
Operating Temperature		T _{opr}	– 40 ~ 85	°C
Storage Temperature		T _{sta}	– 55 ~ 150	°C

(Note) On Glass Epoxy PCB
(30 × 30 × 1.6mm Cu 50%)

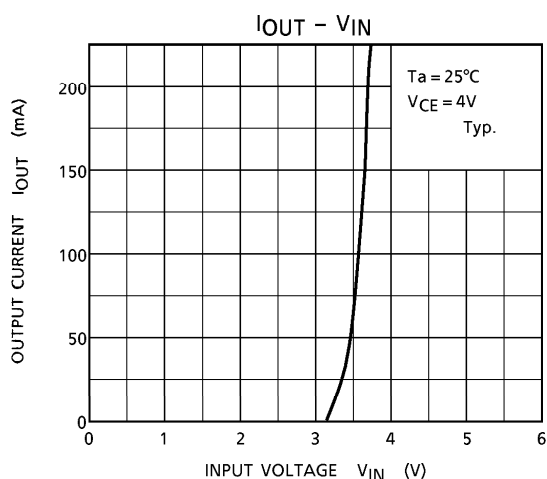
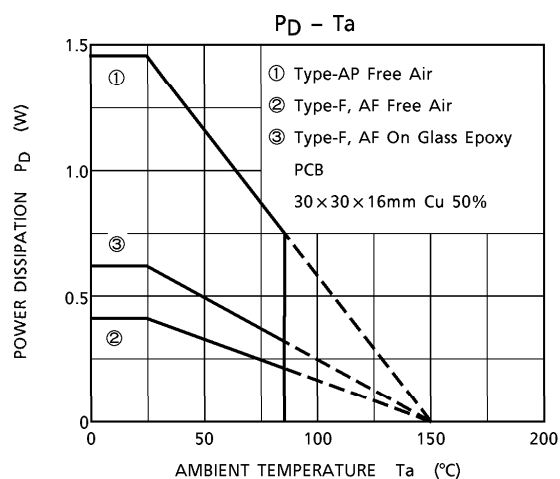
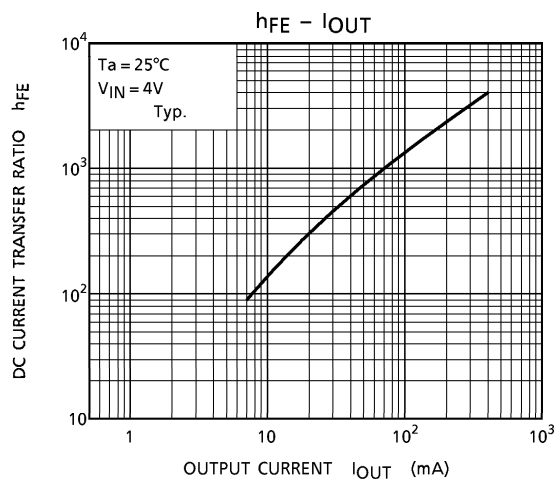
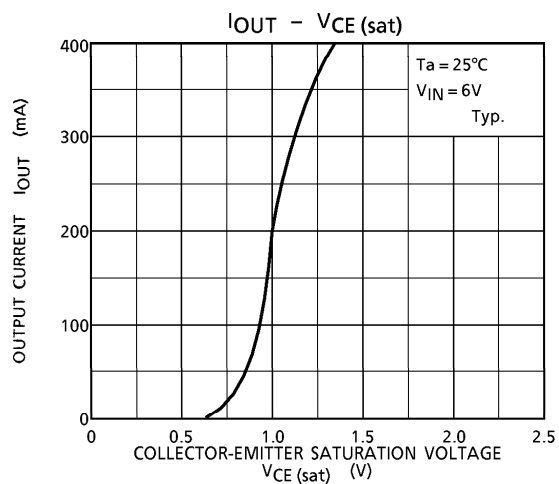
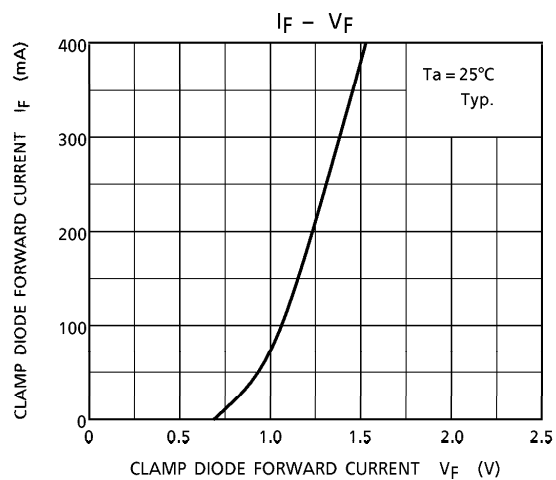
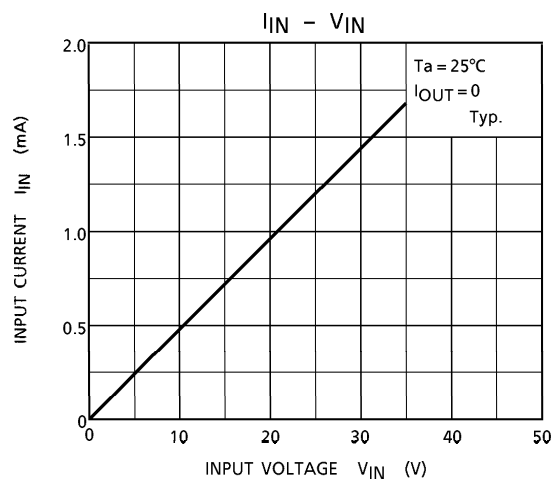
RECOMMENDED OPERATING CONDITIONS (Ta = – 40 ~ 85°C)

CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Output Sustaining Voltage	AP / AF F	V _{CE} (SUS)	0 0	— —	50 35	V
Output Current		I _{OUT}	DC 1 Circuit, T _{pw} = 25%, Duty = 40% T _{pw} = 25ms, Duty = 10%, 7 Circuits	0 0	400 200	mA
Input Voltage		V _{IN}	– 35	—	35	V
Clamp Diode Reverse Voltage	AP / AF F	V _R	— —	— —	50 35	V
Clamp Diode Forward Current		I _F	—	—	400	mA
Power Dissipation	AP F / AF	P _D	— (Note)	— —	0.52 0.325	W

(Note) On Glass Epoxy PCB (30 × 30 × 1.6mm Cu 50%)

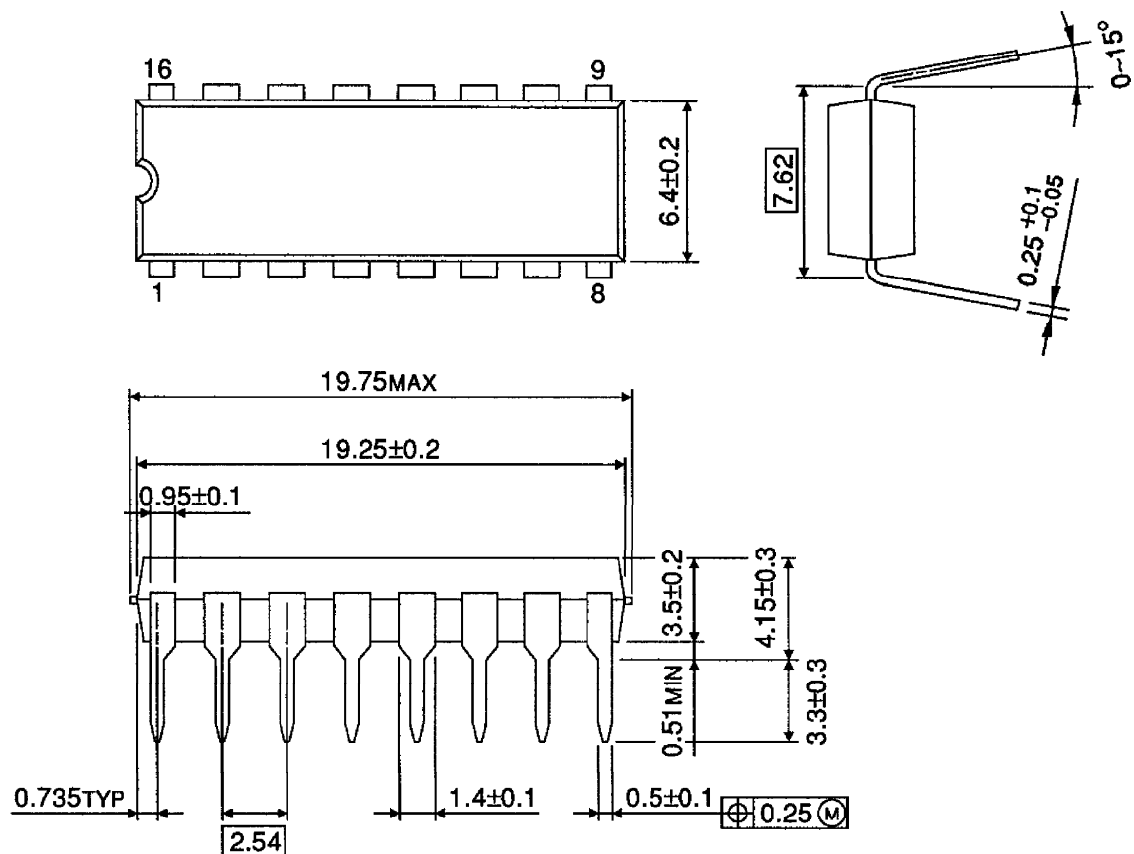
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Leakage Current	AP / AF F	I _{CEX}	1	V _{OUT} = 50V V _{OUT} = 35V	— —	100 100	μA
Collector-Emitter Saturation Voltage		V _{CE} (sat)	2	I _{OUT} = 400mA I _{OUT} = 200mA	— —	1.3 1.0	V
Input Current	"H" Level "L" Level	I _{IN} (ON) I _{IN} (OFF)	4 4	V _{IN} = 18V V _{IN} = 35V V _{IN} = – 35V	— — —	0.85 — – 20	mA μA
DC Current Transfer Ratio		h _{FE}	3	V _{CE} = 4V, I _{OUT} = 350mA	1000	3000	—
Clamp Diode Reverse Current		I _R	5	V _R = 50V, V _R = 35V (Type-F)	—	—	100 μA
Clamp Diode Forward Voltage		V _F	6	I _F = 400mA	—	1.5	2.4 V
Turn-On Delay	AP / AF F	t _{ON}	7	C _L = 15pF V _{OUT} = 50V, R _L = 156Ω V _{OUT} = 35V, R _L = 110Ω	— —	0.1 —	μs
Turn-Off Delay	AP / AF F	t _{OFF}		V _{OUT} = 50V, R _L = 156Ω V _{OUT} = 35V, R _L = 110Ω	— —	0.2 —	μs



OUTLINE DRAWING
DIP16-P-300-2.54A

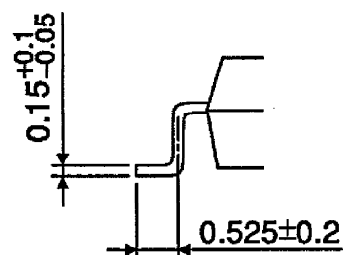
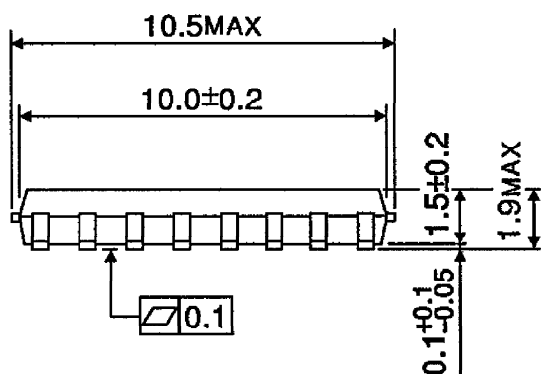
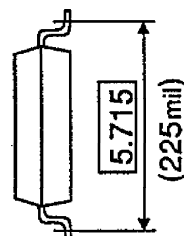
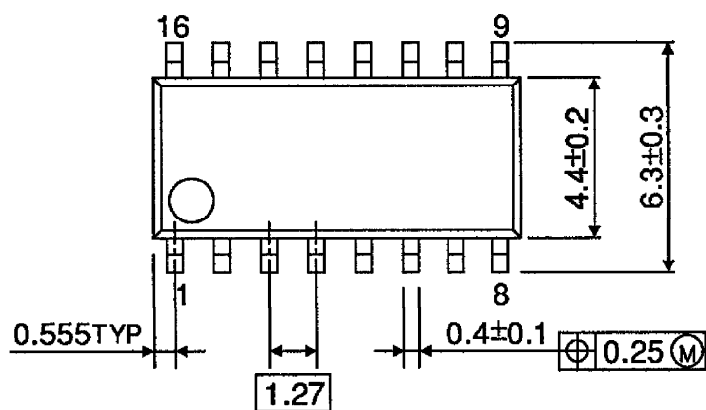
Unit : mm



Weight : 1.11g (Typ.)

OUTLINE DRAWING
SOP16-P-225-1.27

Unit : mm



Weight : 0.16g (Typ.)