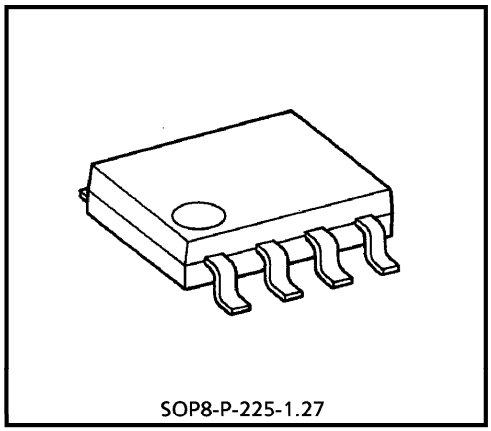
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8504F

HIGH SPEED COMPARATOR

FEATURES

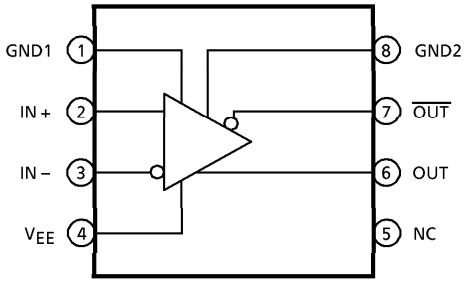
- Pulse delay : 1.6ns (Typ.)
- Differential ECL output
- 50Ω Line drive output
- 8pin mini flat package
- −5V single power supply



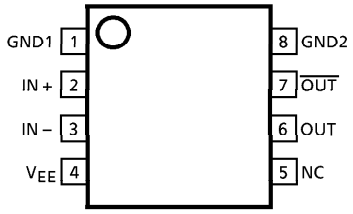
SOP8-P-225-1.27

Weight : 0.1g (Typ.)

BLOCK DIAGRAM



PIN CONNECTION (TOP VIEW)



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{EE}	0.3~−6.0	V
Differential Input Voltage	DV_{IN}	±3	V
Common Mode Input Voltage	CMV_{IN}	−0.3~V_{EE}	V
Power Dissipation	P_D	(*) 300	mW
Operating Temperature	T_{opr}	−20~85	°C
Storage Temperature	T_{stg}	−55~150	°C

Recommended Operating Voltage : V_{EE} = −5.5~−4.5V, Ta = −20~70°C

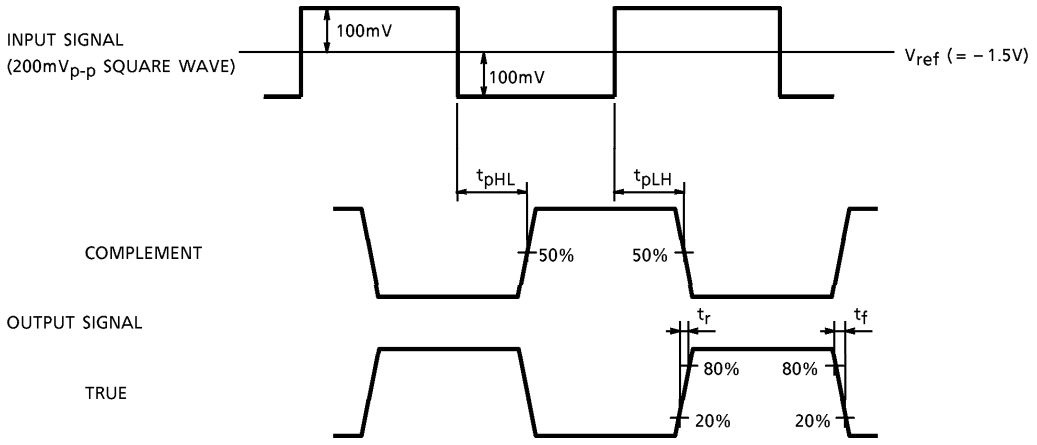
(Note *) Shown here is data for the single unit of IC only and when mounted on a substrate, power dissipation can be made larger than this. However, as it varies largely depending upon the state of mounted on a substrate, it shall be examined thoroughly.

(Note **) As this product is weak to surge voltage, please handle carefully.

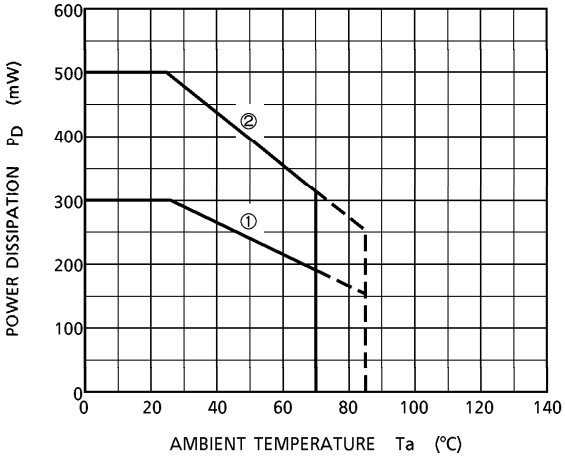
ELECTRICAL CHARACTERISTICS (V_{EE} = −5V, R_L = 50Ω, Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage		—	—	R_S < 500Ω	−10	—	10	mV
Input Bias Current		—	—	—	—	20	40	μA
Input Offset Current		—	—	—	—	—	10	μA
Supply Current		I_{EE}	—	V_{EE} = −5.5V	—	26	37	mA
Propagation Delay		t_{pLH}	—	(Note 1)	—	1.6	2.6	ns
		t_{pHL}	—	(Note 1)	—	1.6	2.6	
Rise Time	20~80%	t_r	—	(Note 1)	—	1.0	1.8	ns
Fall Time	20~80%	t_f		(Note 1)	—	0.7	1.6	
Common Mode Input Voltage Range		—	—	—	−2.5	—	−0.8	V
Output Voltage		V_{OH}	—	R_L = 50Ω is load per −2V.	−1.025	—	−0.88	V
		V_{OL}	—		−1.81	—	−1.62	
Input Capacitance		—	—	—	—	3.5	—	pF
Open Loop Gain		—	—	—	—	70	—	dB

(Note 1) Input / Output conditions are as illustrated below.

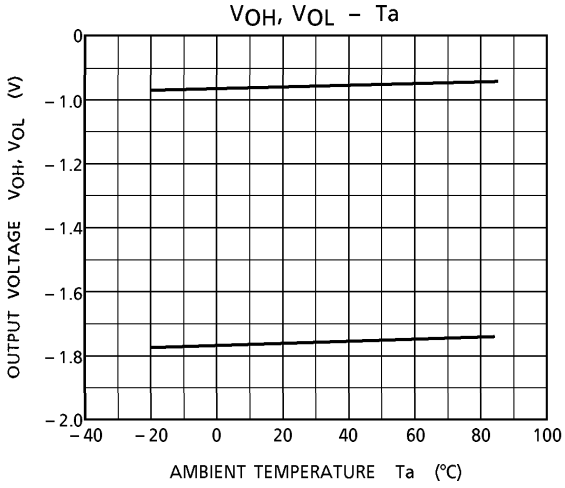


P_D – Ta



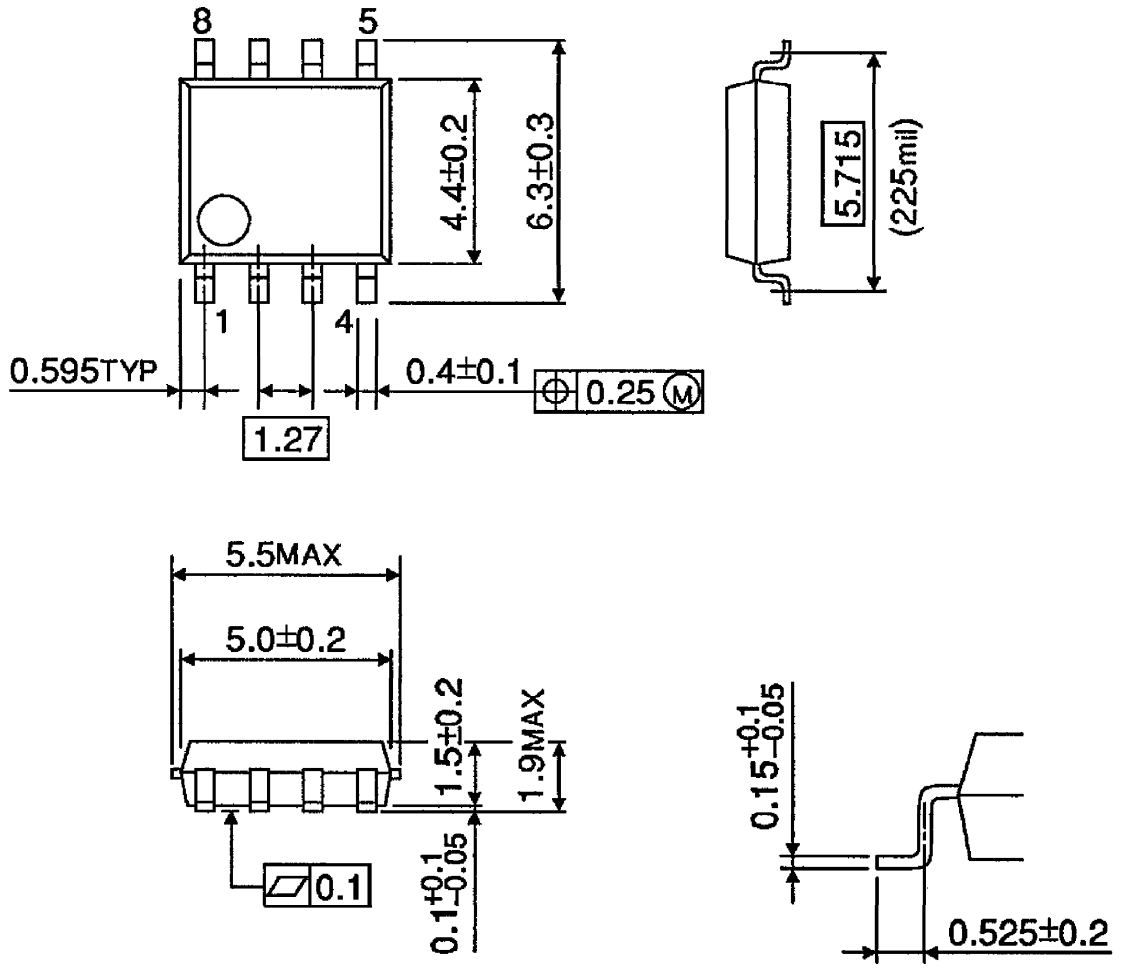
(Note 1) ① is data of a single unit of IC only.
(Note 2) ② is reference data when mounted on a glass epoxy resion substrate in $20 \times 20 \times 1.8mm^3$, and the copper laminted area is 60% of the substrate.

V_{OH}, V_{OL} – Ta



PACKAGE DIMENSIONS

SOP8-P-225-1.27 Unit : mm



Weight : 0.1g (Typ.)

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