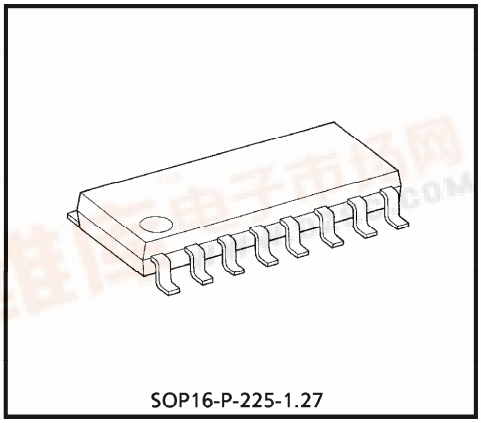
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8517F

HIGH SPEED DUAL COMPARATOR

FEATURES

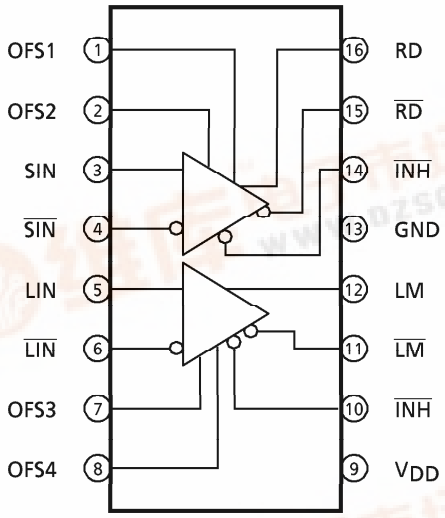
- Standard + 5V power supply
- TTL OUT
- FLP-16pin
- Inhibit function



SOP16-P-225-1.27

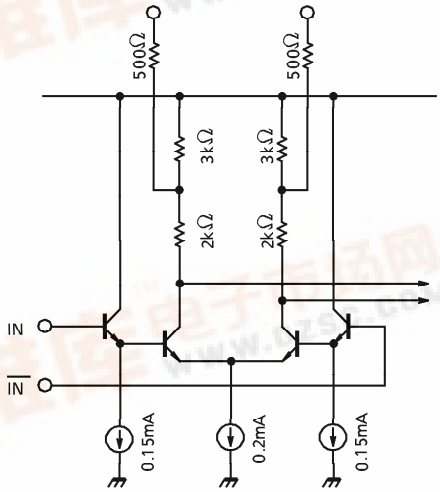
Weight : 0.2g (Typ.)

BLOCK DIAGRAM & PIN CONNECTION (TOP VIEW)



EQUIVALENT CIRCUIT

- Off set control terminal (OFS1, 2, 3, 4), Input terminal (SIN, $\overline{SIN}$, LIN, $\overline{LIN}$)



961001EBA2

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{DD}	7	V
Diffusion Input Voltage	DV_{IN}	±3	V
Common Mode Input Voltage	CV_{IN}	−0.3~V_{DD}+0.3	V
Power Dissipation	P_D	0.625	W
Operating Temperature	T_{opr}	−20~85	°C
Storage Temperature	T_{stg}	−55~150	°C
Inhibit Terminal	V_{ih}	−0.3~V_{DD}+0.3	V

Recommended Operating Range : V_{DD} = 5V ± 10%, Ta = −20~70°C
(*) On Glass Epoxy PCD (20 × 20 × 1.6mm)

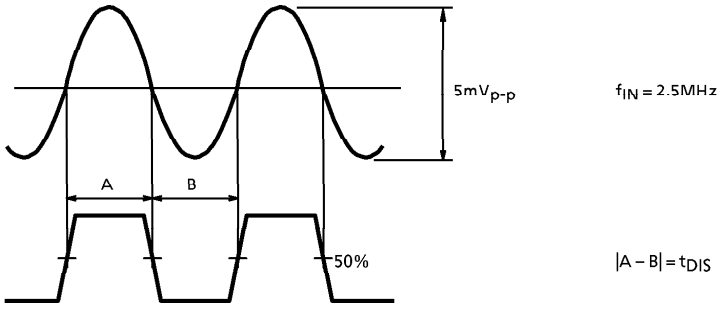
ELECTRICAL CHARACTERISTICS (V_{DD} = 5V, Ta = 25°C Unless otherwise noted)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Power Supply Current	I_{DD}	—	—	—	25	40	mA
Input Sensitivity	V_{MIN}	—		5	—	—	mV
Input Off Set Voltage	V_{IO}	—	OFS 1, 2, 3, 4 Terminal→OPEN	−10	—	+10	mV
Input Bias Current	I_{IB}	—	—	—	—	6	μA
Input Offset Current	I_{IO}	—	—	—	—	3	μA
Input Resistance	R_I	—	—	10	—	—	kΩ
Input Capacitance	C_I	—	—	—	—	3	pF
Common Mode Input Voltage Range	CV_{IN}	—	—	2.0	—	4.3	V
Open-Loop Gain	G_V	—	—	70	—	—	dB
Output Voltage	V_{OH}	—	V_{DD} = 4.5V, I_{OH} = 1mA	2.4	—	—	V
	V_{OL}	—	V_{DD} = 4.5V, I_{OL} = 10mA	—	—	0.5	
Inhibit Terminal Input Voltage	V_{IH}	—	—	2.0	—	—	V
	V_{IL}	—	—	—	—	0.8	
Inhibit Propagation Delay	t_{ih}	—	—	—	—	30	μs
Propagation Delay	t_{pLH}	—	(Note 2)	—	11	20	ns
	t_{pHL}	—	(Note 2)	—	10	22	
Rise Time	t_r	—	(Note 2)	—	4	—	ns
Fall Time	t_f	—	(Note 2)	—	2	—	ns
Time Distortion	t_{DIS}	—	(Note 1) V_{IN} = 5mV_{p-p}, f_{IN} = 2.5MHz	—	2	—	ns

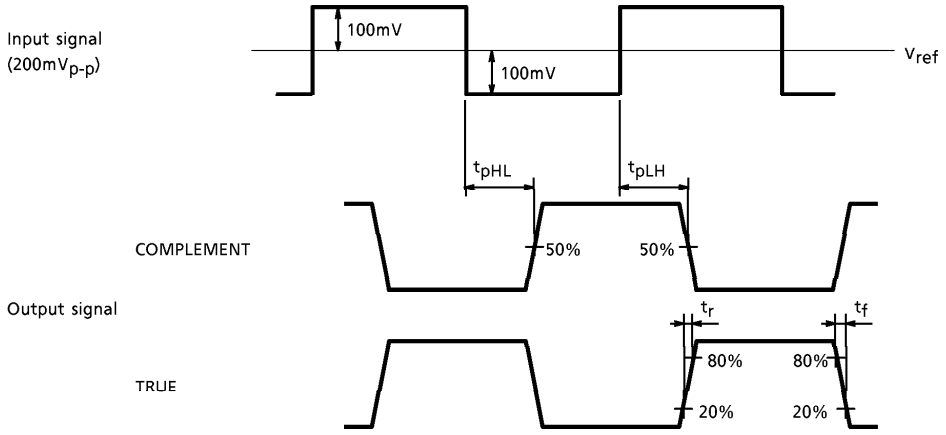
INHIBIT FUNCTION

OUTPUT TERMINAL / INH TERMINAL	OUTPUT FUNCTION	
	RD, LM	$\overline{RD}$, $\overline{LM}$
High	Active	Active
Low	High	High

(Note 1)

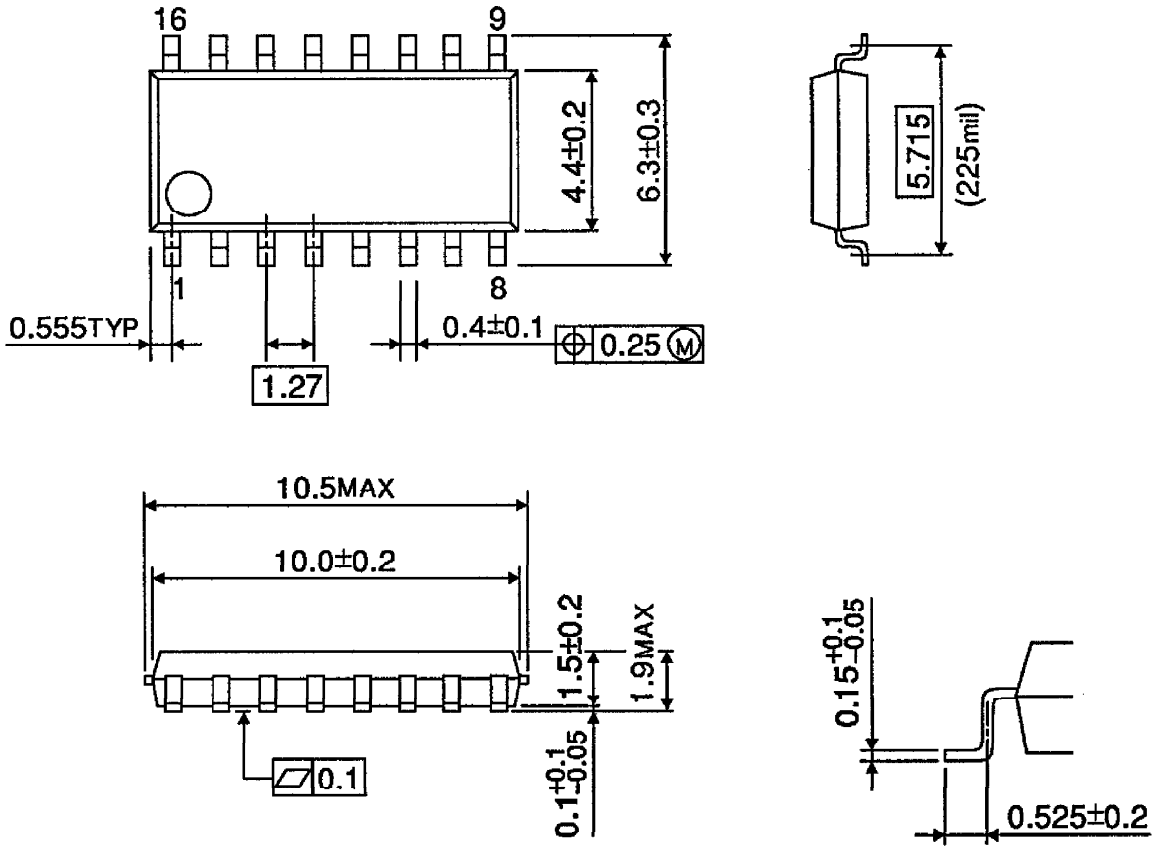

5mV$_{p-p}$
f_{IN} = 2.5MHz
A
B
50%
|A – B| = t_{DIS}

(Note 2)


Input signal
(200mV$_{p-p}$)
100mV
100mV
V_{ref}
t_{pHL}
t_{pLH}
COMPLEMENT
50%
50%
Output signal
t_r
t_f
TRUE
80%
80%
20%
20%

OUTLINE DRAWING

SOP16-P-225-1.27 Unit : mm



Weight : 0.2g (Typ.)