



## PIN FUNCTION

PIN No.	PIN NAME	FUNCTION	I/O
1	OBL	Bridge driver B output pin	O
2	EB1	PNP transistor emitter pin	—
3	OBH	PNP transistor base pin	—
4	O $\bar{B}$ L	Bridge driver B output pin	O
5	EB2	PNP transistor emitter pin	—
6	INA	Channel A excitation input pin	I
7	INB	Channel B excitation input pin	I
8	IN $\bar{A}$	Channel A excitation input pin	I
9	IN $\bar{B}$	Channel B excitation input pin	I
10	SB	Standby function input pin	I
11	MODE	Two-port input select mode pin	I
12	V $\bar{C}$ C1	5V supply pin	—
13	EA1	PNP transistor emitter pin	—
14	CA1	PNP transistor collector pin	—
15	OAH	PNP transistor base pin	—
16	OAL	Bridge driver A output pin	O
17	O $\bar{A}$ H	PNP transistor base pin	—
18	OAL	Bridge driver A output pin	O
19	V $\bar{C}$ C2	5V/12V supply pin	—
20	OBH	PNP transistor base pin	—
F	S.GND	Small signal ground pin	—
	P.GND	Power ground pin	

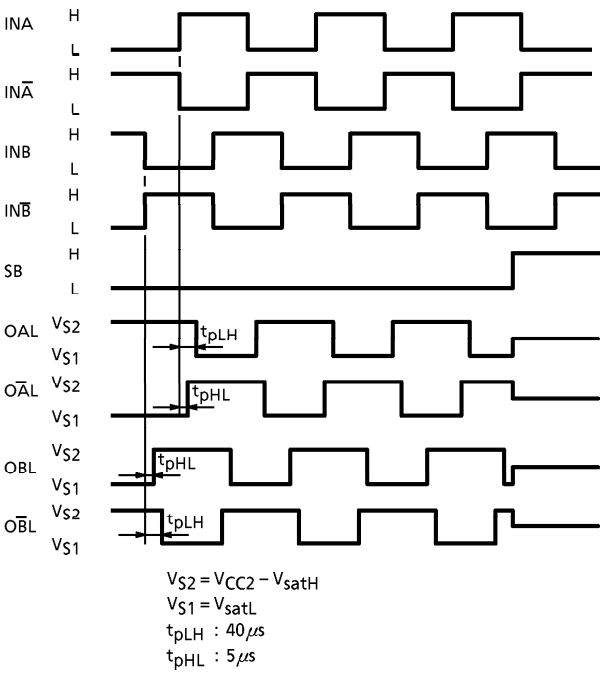
## LOGIC CHART

INPUT				OUTPUT		
SB	MODE	INA (B)	IN $\bar{A}$ (B)	OA (B) L	O $\bar{A}$ (B) L	
L	H	L	L	$\infty$	$\infty$	OPERATION
L	H	H	H	$\infty$	$\infty$	OPERATION
L	H	H	L	L	H	OPERATION
L	H	L	H	H	L	OPERATION
L	L	L	L	H	L	OPERATION
L	L	H	L	L	H	OPERATION
H	X	X	X	$\infty$	$\infty$	STAND-BY

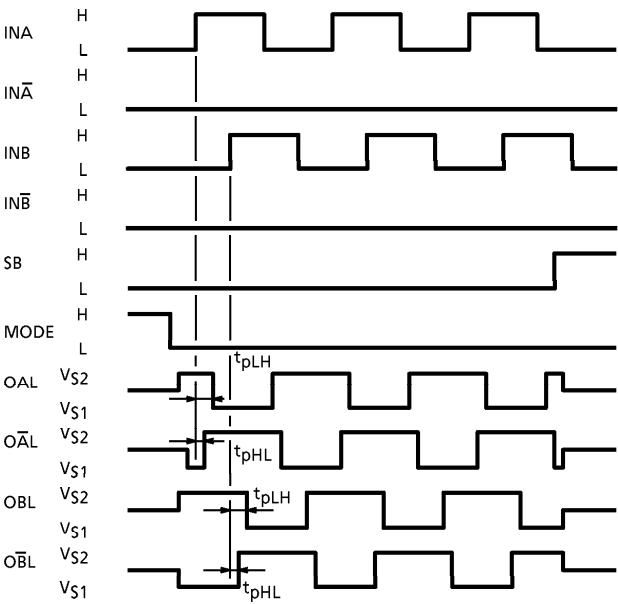
X : Don't Care

 $\infty$  : High impedance

TIMING CHART 1



TIMING CHART 2



MAXIMUM RATINGS (Ta = 25C°)

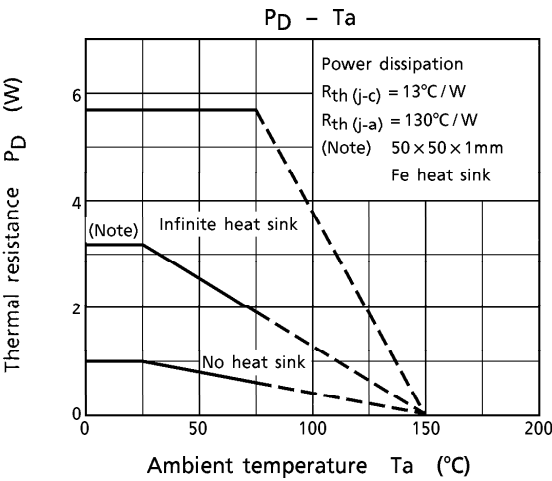
CHARACTERISTICS	SYMBOL	RATING	UNIT
Power supply voltage	VCC1	7.0	V
	VCC2	17.0	
Output current	IO (MAX)	± 500	mA
Input voltage	VIN	~VCC1	V
Power dissipation	PD	1.0	W
Operating temperature	Topr	(Note) - 30~75	°C
Storage temperature	Tstg	- 55~150	°C

(Note) Depending on the operating temperature, output current may be restricted. (See Pd-Ta characteristics graph.)

RECOMMENDED OPERATING CONDITION

CHARACTERISTICS	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Power supply voltage	VCC1	—	—	4.5	—	5.5	V
	VCC2	—	—	4.5	—	13.2	

Package PFP-20 characteristics

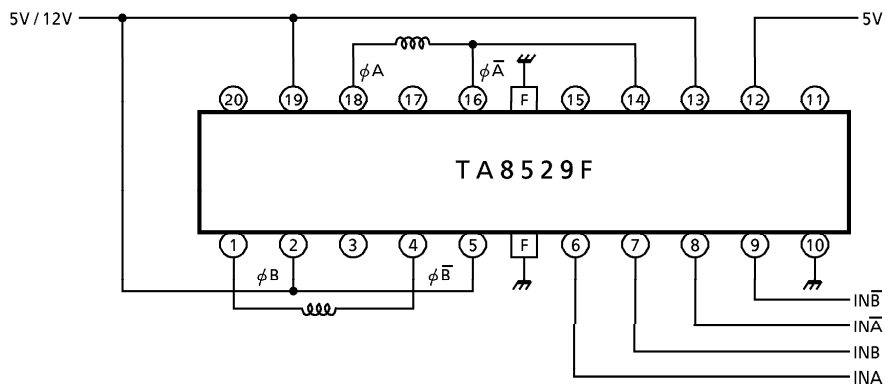


ELECTRICAL CHARACTERISTICS (Ta = 25°C, V<sub>CC1</sub> = 5V, V<sub>CC2</sub> = 12V)

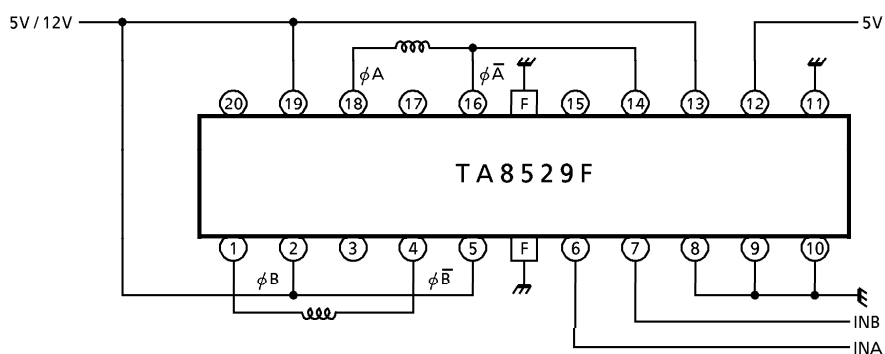
CHARACTERISTICS	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I <sub>CC1</sub>	—	V <sub>SB</sub> = 5V, output open	—	—	5	$\mu$ A
	I <sub>CC2</sub>			—	—	10	
	I <sub>CC1</sub>	—	V <sub>SB</sub> = 5V, output open 1 input = 5V, 3 inputs = 0V	—	—	5	$\mu$ A
	I <sub>CC2</sub>			—	—	10	
	I <sub>CC1</sub>	—	V <sub>SB</sub> = 5V, output open A : 1 input = 5V, B : 1 input = 5V A : 1 input = 0V, B : 1 input = 0V	—	—	5	$\mu$ A
	I <sub>CC2</sub>			—	—	10	
	I <sub>CC1</sub>	—	Output open, V <sub>SB</sub> = 0V 1 input = 5V, 3 inputs = 0V	—	25	30	mA
	I <sub>CC2</sub>			—	20	25	
	I <sub>CC1</sub>	—	Output open, V <sub>SB</sub> = 0V A : 1 input = 5V, B : 1 input = 5V A : 1 input = 0V, B : 1 input = 0V	—	35	44	mA
	I <sub>CC2</sub>			—	35	47	
	I <sub>CC1</sub>	—	Output open, V <sub>SB</sub> = 0V V <sub>MODE</sub> = 0V, input = 0V	—	35	44	mA
	I <sub>CC2</sub>			—	35	47	
Input Voltage	V <sub>INH</sub>	—	Pins 6, 7, 8, and 9	2.0	—	V <sub>CC1</sub>	V
	V <sub>INL</sub>			GND	—	0.8	
	V <sub>SBH</sub>	—	Pin 10	3.5	—	V <sub>CC1</sub>	V
	V <sub>SBL</sub>			GND	—	2.0	
	V <sub>MODEH</sub>	—	Pin 11	3.5	—	V <sub>CC1</sub>	V
	V <sub>MODEL</sub>			GND	—	2.0	
Input Current	I <sub>INH</sub>	—	V <sub>IN</sub> = 3.5V	Pins 6, 7, 8, and 9	—	−2	$\mu$ A
	I <sub>INL</sub>	—	V <sub>IN</sub> = 0.4V		—	−200	
	I <sub>SBH</sub>	—	V <sub>SB</sub> = 3.5V	Pin 10	—	−30	$\mu$ A
	I <sub>SBL</sub>	—	V <sub>SB</sub> = 0.4V		—	−150	
Saturation voltage (Note) V <sub>sat1</sub> = V <sub>satH1</sub> + V <sub>satL1</sub> V <sub>sat2</sub> = V <sub>satH2</sub> + V <sub>satL2</sub>	V <sub>satH1</sub>	—	I <sub>O</sub> = 100mA	—	0.1	—	V
	V <sub>satH2</sub>	—	I <sub>O</sub> = 400mA	—	0.15	—	
	V <sub>satL1</sub>	—	I <sub>O</sub> = 100mA	—	0.1	—	V
	V <sub>satL2</sub>	—	I <sub>O</sub> = 400mA	—	0.45	—	
	V <sub>sat1</sub>	—	I <sub>O</sub> = 100mA	—	0.2	0.4	V
	V <sub>sat2</sub>	—	I <sub>O</sub> = 400mA	—	0.6	0.95	
Diode Forward Voltage	V <sub>F</sub>	—	I <sub>F</sub> = 400mA	—	1.4	1.6	V
Delay time During	t <sub>pLH</sub>	—	IN- $\phi$	—	40	—	$\mu$ s
	t <sub>pHL</sub>			—	5	—	

## APPLICATION CIRCUIT

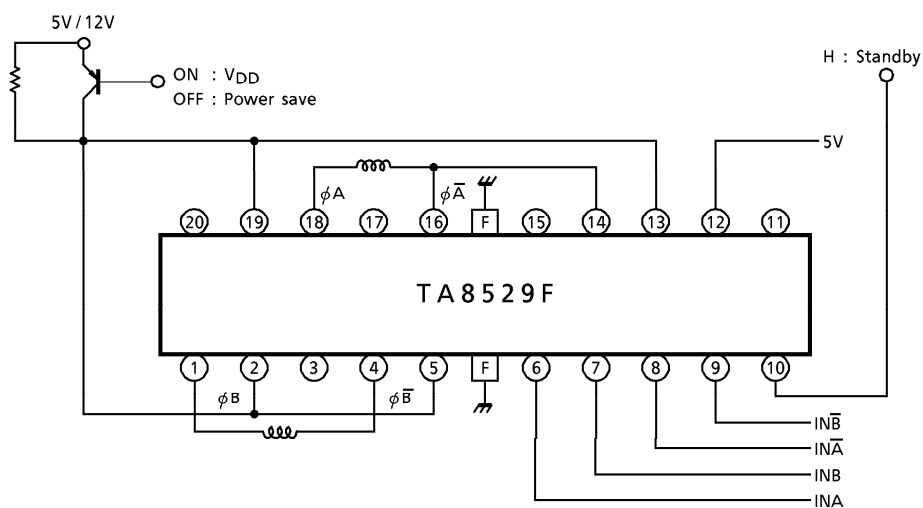
## 1. Four-input method



## 2. Two-input method

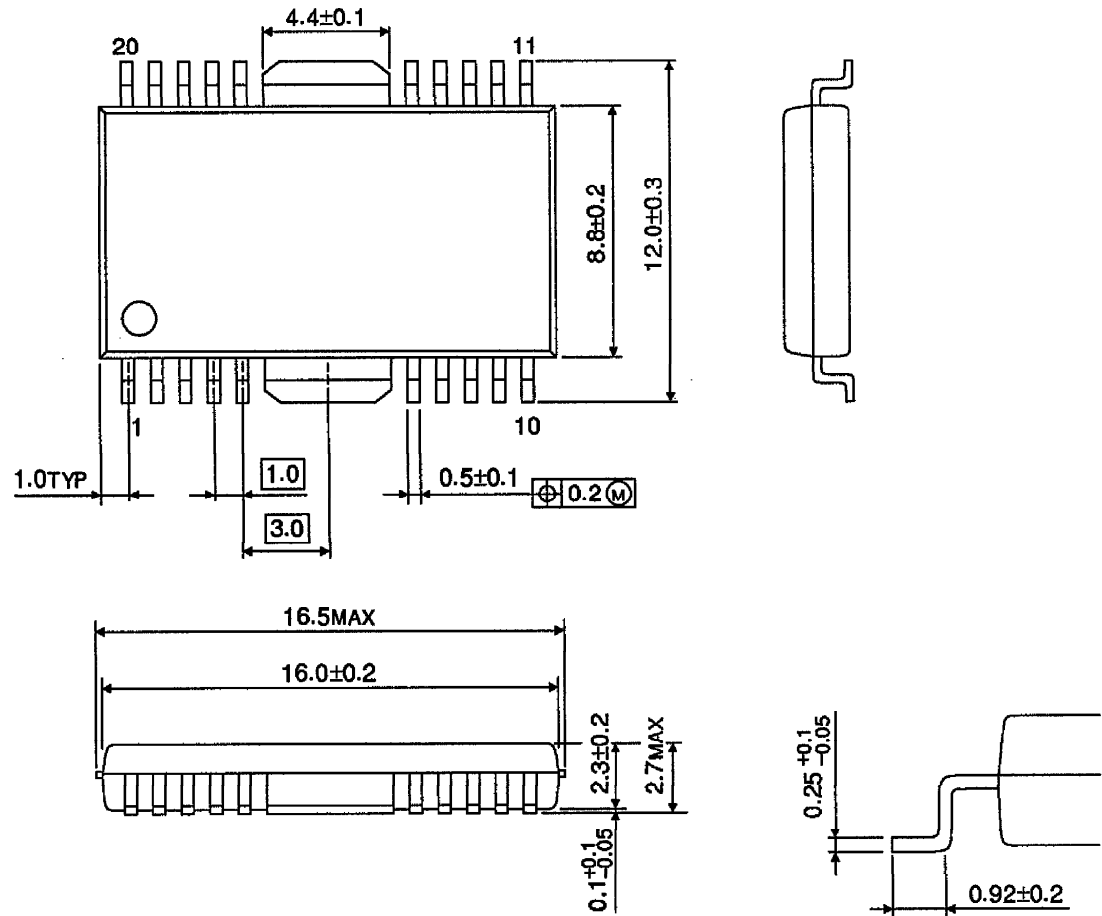


## 3. Power save application circuit



PACKAGE DRAWING  
HSOP20-P-450-1.00

Unit : mm



Weight : 0.79g (Typ.)