Pulse driver for LCD drive

BU9764FV

The BU9764FV is a level converter IC designed for LCD drive, which receives 5 V signals and converts them to 16 V signals. The compact SSOP-B16 package contains six internal level converters.

●Applications

Small- to medium-sized TFT liquid crystal panels for movie projectors, LCD projectors, and other similar devices

●Features

1) Six internal level converter channels.
2) TTL input.
3) Shifts levels to convert 5V signals into 16V signals.
4) Compact SSOP-B16 package.

●Absolute maximum ratings (Ta=25℃)

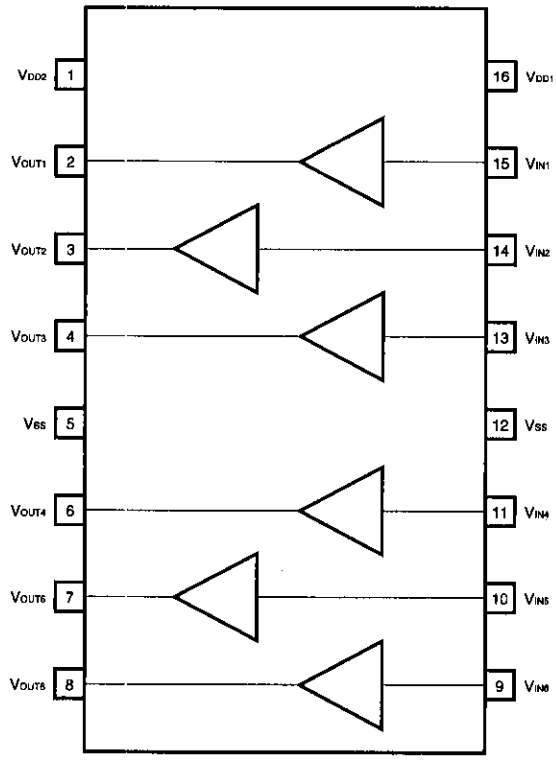
Parameter	Symbol	Limits	Unit	Conditions
Power supply voltage (1)	V_{DD1}	−0.5～V_{SS}+7.0	V	V_{DD1}
Power supply voltage (2) *1	V_{DD2}	−0.5～V_{SS}+20.0	V	V_{DD2}
Input voltage	V_{IN}	−0.5～V_{DD1}+0.5	V	V_{IN1}～V_{IN6}
Output voltage	V_{OUT}	−0.5～V_{DD2}+0.5	V	V_{OUT1}～V_{OUT6}
Output current	I_{OUT}	±10	mA	V_{OUT1}～V_{OUT6}
Operating temperature	Topr	−25～+85	℃	—
Storage temperature	Tstg	−65～+150	℃	—
Power dissipation *2	Pd	400	mW	—

*1 $V_{DD2} > V_{DD1}$
*2 When using at temperatures of Ta = 25°C or higher, reduce power by −4.0mW for each 1°C above 25°C.

●Recommended operating conditions (Ta=25℃)

Parameter	Symbol	Limits	Unit	Conditions
Power supply voltage (1)	V_{DD1}	5.0±0.5	V	V_{DD1}
Power supply voltage (2)	V_{DD2}	16±0.5	V	V_{DD2}
Ambient temperature	Ta	0～70	℃	—

●Block diagram



●Pin descriptions

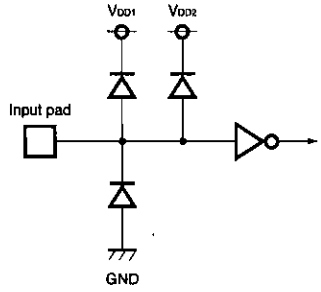
Pin No.	Pin Name	I/O	Function	Processing when not used
16	V_{DD1}	—	Power supply pin for input buffer	—
1	V_{DD2}	—	Power supply pin for output buffer	—
9,10,11 13,14,15	V_{IN1}~V_{IN6}	I	Pulse input pin	short Vss
2,3,4 6,7,8	V_{OUT1}~V_{OUT6}	O	Pulse output pin	Open
5,12	Vss	—	Ground pin *3	—

*3 When using the IC, ground both pins 5 and 12.

●Input/output circuits

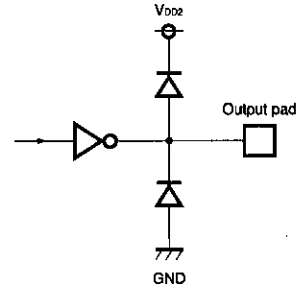
1) Input circuit

Pin nos. 9, 10, 11, 13, 14, 15



2) Output circuit

Pin nos. 2, 3, 4, 6, 7, 8



●Electrical characteristics (unless otherwise noted, Ta=25℃, V_{DD1}=5V, V_{DD2}=16V)

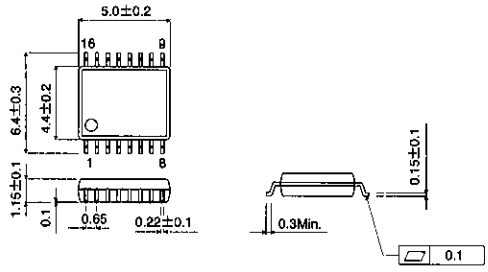
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage HIGH	V_{IH}	2.0	—	—	V	
Input voltage LOW	V_{IL}	—	—	0.8	V	
Input current	I_I	−1.0	—	1.0	μA	
Output voltage HIGH	V_{OH}	15.9	16.0	—	V	I_{OH}=−20 μA
Output voltage LOW	V_{OL}	—	0.0	0.1	V	I_{OH}=20 μA
Output current HIGH	I_{OH}	—	—	−1.0	mA	V_{OH}=15.5V
Output current LOW	I_{OL}	1.0	—	—	mA	V_{OL}=0.5V
Standby current	I_{DD}	—	—	20	μA	V_{IN}=0V, or V_{DD1}

●AC characteristics (unless otherwise noted, Ta=25℃, V_{DD1}=5V, V_{DD2}=16V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Output transition time*4	t_{TLH}	—	20	40	ns	Load: 5 PF
	t_{THL}	—	20	40	ns	
	t_{TLH}	—	30	60	ns	Load: 35 PF
	t_{THL}	—	30	60	ns	
Propagation delay time	t_{PLH}	—	20	40	ns	Load: 5 PF
	t_{PHL}	—	20	40	ns	
	t_{PLH}	—	30	60	ns	Load: 35 PF
	t_{PHL}	—	30	60	ns	
Propagation delay time differential between channels *4	ΔT	—	—	10	ns	Load: 5 PF
	ΔT	—	—	10	ns	Load: 35 PF

*4 NOT 100% TESTED

●External dimensions (Units: mm)



SSOP-B16

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