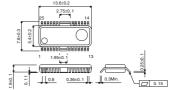
IC

# LED driver IC with built-in 16bit shift register BD7851FP

### Description

The BD7851FP is a constant-current output LED driver that incorporates a shift register and latch circuit, which drives 16 LED lamps. Output value of the constant-current can be set from 1mA to 50mA (Max.) by a single external resistor. In addition, this IC incorporates a thermal-shut-down circuit which detects the IC temperature rising and turns the constant-current output OFF.

# Dimension (Units : mm)



#### Features

- 1) Drive capability: constant-current output 50mA (Max.)
- 2) Can set the constant-current output value by one external resistor.
- 3) 3 wire serial (Data, Clock, Latch) control from micro computer
- 4) With ENABLE pin
- 5) Power ON reset function
- 6) Built-in thermal-shut-down circuit
- 7) Low power consumption
- 8) Cascade connection
- 9) Allows multiple LED displays due to the dynamic operation.
- 10) Small power package HSOP25

#### HSOP25

#### Applications

All sets having micro computers and LED displays

## ● Absolute Maximum Ratings (Ta=25°C)

Dovometer	Curahad	Primala al Limaita	
Parameter	Symbol	Limits	Unit
Power supply voltage	Vcc	0 ~ 7.0	V
Input voltage	Vı	-0.3 ∼ Vcc+0.3	V
Output voltage	Vo	0 ~ 10	V
Power dissipation	PD	* 1450	W
Storage temperature range	Tstg	<b>−</b> 55 ~ +150	°C
Operating temperature range	Topr	<b>−20 ~ +85</b>	°C

<sup>\*</sup>Derating: -11.6mW/°C for operation above Ta=25°C PCB (70mm×70mm×1.6mm glass epoxy board)

# Recommended Operating Conditions (Ta=25°C)

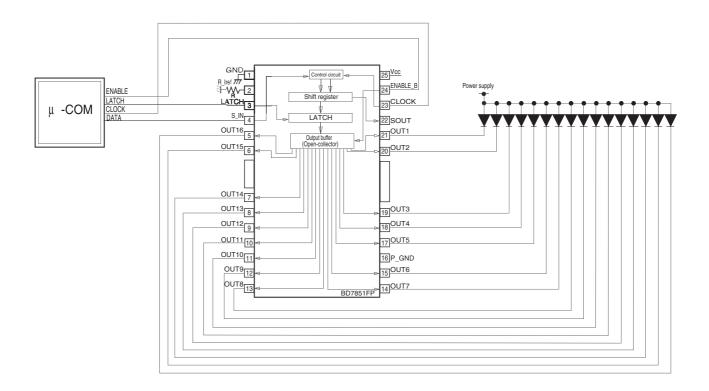
Parameter	Symbol	Min.	Тур.	Max.	Unit
Power supply voltage	Vcc	4.5	_	5.5	V
Input voltage "H" level	VIH	$0.8 \times Vcc$	_	Vcc	V
Input voltage "L" level	VIL	GND	_	0.2 × Vcc	V

<sup>\*</sup>This product is not designed for protection against radioactive rays.

## ● Electrical characteristics (Unless otherwise noted; Ta=25°C, Vcc=5.0V)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Output voltage "H"	Vон	Vcc-0.5	_	_	V	Iон=1mA
Output voltage "L"	Vol	_	_	0.5	V	Iон=-1mA
Consumption current	Icc	_	0.7	1.0	mA	R=13kΩ, OUT1~OUT16:OFF
		_	1.8	3.0	mA	R=1.3kΩ, OUT1~OUT16:OFF
		_	4.0	6.5	mA	R=13kΩ, OUT1~OUT16:ON
		_	30	40	mA	R=1.3kΩ, OUT1~OUT16:ON
Constant-current output current (Including error between bits)	IOLC1	48	55	62	mA	Vουτ=2.0V R=1.3kΩ
	lolc2	5.0	5.9	6.8	mA	Vουτ=2.0V R=13kΩ
Constant-current output current error between bits	ΔΙοις		±1	±6	%	Vouτ=2.0V R=1.3kΩ (1bit ON mode)
Output current regulation against output voltage	IΔVcc	_	±1	±6	%/V	Vouτ=2.0~3.0V R=1.3kΩ
Output leak current	Іон	_	0.01	0.8	mA	Vout=10V

# Application Circuit



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