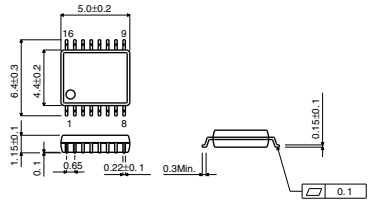
Intelligent three-color LED driver
BU8770FV

●Description

BU8770FV is a smart LED driver developed for cellular phones. This driver generates high-intensity LED driving voltage by stepping up V_{DD} in DC/DC converter with using the clock of the built-in oscillator. Each brightness of RGB color can be adjusted independently in 128 steps by PWM control.

●Dimension (Units : mm)



SSOP-B16

●Features

1) 128 steps PWM brightness control for each three color independently
2) DC/DC converter for LED driving
3) Low consumption stand-by circuit
4) Small SSOP-B16 package

●Applications

Cellular phones

●Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{DD}	6.0	V
Operating temperature range	Topr	–30 ~ +80	˚C
Storage temperature range	Tstg	–40 ~ +125	˚C

* Derating : 4.5mW/˚C for operation above Ta=25˚C

● Electrical characteristics (Unless otherwise noted; Ta=25˚C, V_{DD}=3.60V, V_{DD}3V=3.05V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Whole						
Power supply voltage	V_{DD}	3.15	3.60	4.80	V	
(Current consumption)	I_{DDS}	—	0.1	1	μA	Stand-by mode *1
Reference voltage	V_{DD}3V	2.80	3.05	3.20	V	3V reference voltage
(Current consumption)	I_{DD}3V0	—	0.1	1	μA	Stand-by mode
	I_{DD}3V1	—	30	60	μA	Normal operating mode
DC/DC converter						
Output voltage	V_{OUT}	1.574V_{DD}3V ± 5%			V	*2
Output current	I_{OUT}	—	—	40	mA	VOUT=4.8V
Capacitor capacitance	CAP1	0.22 ± 20%			μF	
	CAP_0	4.7 ± 20%			μF	

*1 : IDDS is current consumption at the time when NSTBY=L, DATA=L, CLK=L, and NRST=H.

*2 : V_{OUT}=1.574X3.05=4.8007V when the output voltage is V_{DD}3V=3.05
(V_{OUT}=4.4072V when the output voltage is V_{DD}3V=2.80V, V_{OUT}=5.0368V when the output voltage is V_{DD}3V=3.20V)

● Block Diagram