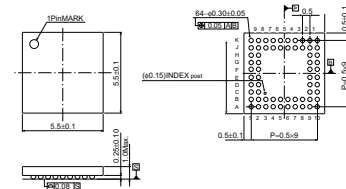


# Power Supply IC for CCD Cameras BD6023AGU

## Summary

BD6023AGU is an integrated IC with both positive and negative power supply voltages equipped with a built-in CCD camera, DSP power supply, backlight white LED driver, flash-compatible RGB LED driver and a constant current driver for focusing. The positive and negative power supply for driving the CCD camera has a maximum output of 100 mA and is optimal for CCDs with high pixel counts. The CCD camera is integrated onto a single chip, contributing to space conservation.

## External Dimensions Diagram (units: mm)



## VCSP85H5

## Features

- 1) Built-in CCD camera driving step-up and step-down DC/DC circuits with both a positive and negative LDO (15V / 13V switch, -8V / -7.5V / -7V switch)
- 2) Built-in 2-channel LDO for DSP (3.1V / 3.0V switch, 1.8V / 2.5V switch)
- 3) Built-in constant current driver for focusing (8-bit control)
- 4) Built-in backlight white LED driver (variable current type)
- 5) Built-in flash-compatible RGB LED driver (variable current type)
- 6) Thermal shutdown function (automatic reset type)

## Applications

CCD camera applications  
(Mobile telephones with cameras, digital still cameras, etc.)

## Absolute Maximum Ratings (Ta=25°C)

| Parameter                    | Symbol | Limits      | Unit |
|------------------------------|--------|-------------|------|
| Maximum applied voltage 1 *1 | VMAX1  | 20          | V    |
| Maximum applied voltage 2 *2 | VMAX2  | 16          | V    |
| Maximum applied voltage 3 *3 | VMAX3  | 15          | V    |
| Maximum applied voltage 4 *4 | VMAX4  | -13.5       | V    |
| Maximum applied voltage 5 *5 | VMAX5  | 6           | V    |
| Power Dissipation            | Pd     | 2500 *6     | mW   |
| Operating temperature range  | Topr   | -30 to +85  | °C   |
| Storage temperature range    | Tstg   | -55 to +150 | °C   |

\*1 VPLUS11, VPLUS12, and VPLUS2 terminals

\*2 CAMP terminal

\*3 LEDR, LEDG, LEDB, BKLED, FLED1, and FLED2 terminals

\*4 VNEG11, VNEG12, and CAMN terminals

\*5 Terminals other than those described above

\*6 When used at Ta = 25°C or greater, the power decreases by 20 mW per 1°C. (When mounted on a 50.0 mm x 58.0 mm x 1.75 mm glass epoxy board)

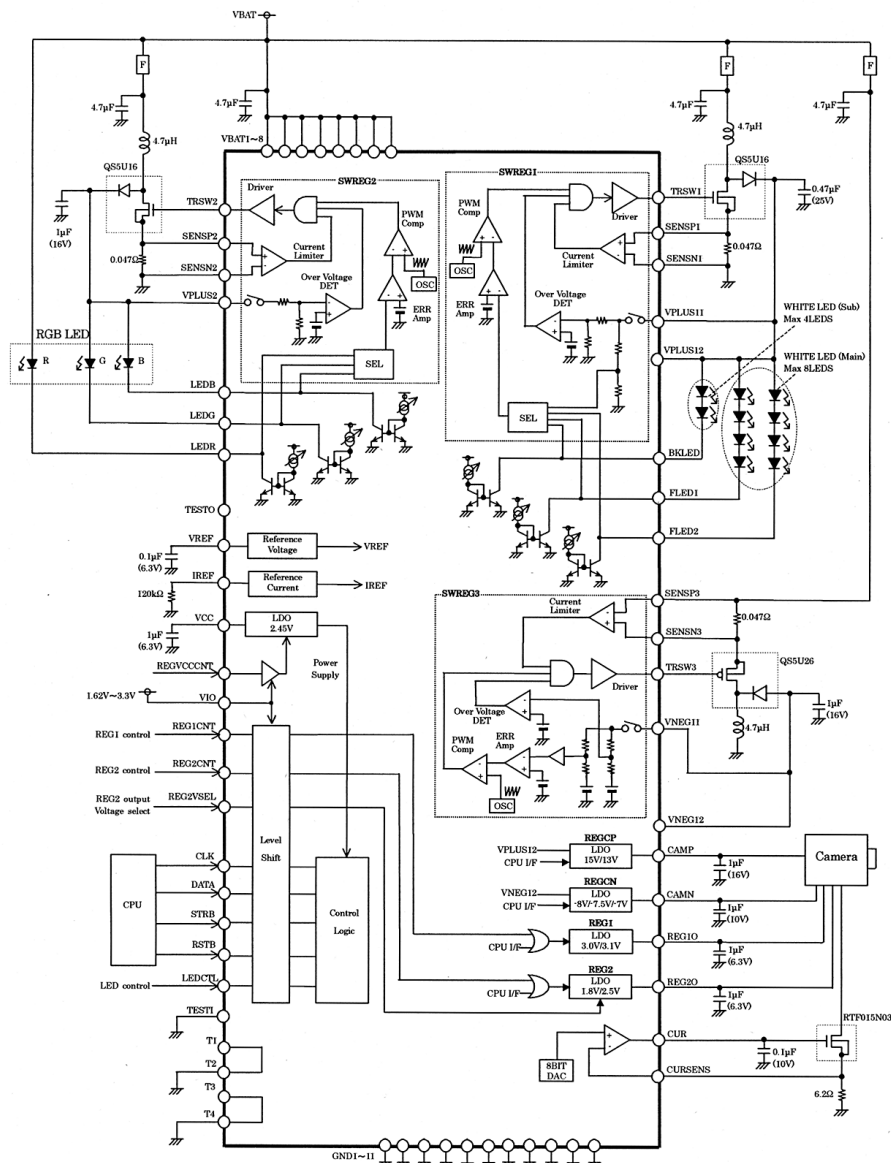
# ●Recommended Operating Conditions (Ta=−30 to +85°C)

| Parameter                    | Symbol | Min. | Typ. | Max. | Unit |
|------------------------------|--------|------|------|------|------|
| Battery power supply voltage | VBAT   | 2.7  | –    | 4.5  | V    |
| VIO terminal voltage         | VIO    | 1.62 | –    | 3.3  | V    |

# ●Electrical Characteristics Characteristics (unless specified otherwise, these characteristics are based on the normal mode with Ta = 25°C, VBAT = 3.6 V, VIO = 1.8 V/3.0 V, and Vcc = 2.45 V)

| Parameter                                                 | Symbol | Min. | Typ. | Max. | Unit | Conditions             |
|-----------------------------------------------------------|--------|------|------|------|------|------------------------|
| VBAT circuit current                                      | IQ1    | –    | 0.1  | 3.0  | μA   | RSTB=REGVCCCNT=0V      |
| REGCP output voltage                                      | Vo151  | 14.5 | 15.0 | 15.5 | V    | Io=60mA, VPLUS12=16.5V |
| REGCN output voltage                                      | Vo81   | −8.5 | −8.0 | −7.5 | V    | Io=100mA, VNEG12=−10V  |
| REG1 output voltage                                       | Vo11   | 2.94 | 3.0  | 3.06 | V    | Io=150mA               |
| REG 2 output voltage                                      | Vo21   | 1.74 | 1.8  | 1.86 | V    | Io=100mA               |
| FLED1, FLED2, and BKLED drive currents                    | ILED13 | 27.0 | 30.0 | 33.0 | mA   | At maximum settings    |
| LEDR, LEDG, and LEDB drive currents (Standard brightness) | ILED12 | 27.0 | 30.0 | 33.0 | mA   | At maximum settings    |
| LEDR, LEDG, and LEDB drive currents (High brightness)     | ILED22 | 135  | 150  | 165  | mA   | At maximum settings    |
| Constant current drive CURSENS control voltage            | ICUR3  | 0.57 | 0.60 | 0.63 | V    | At maximum settings    |

# ●Application Circuit Example



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