

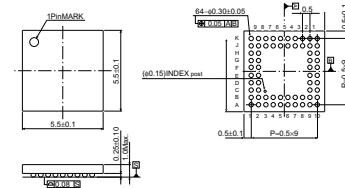
Power Supply IC for CCD Cameras

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)

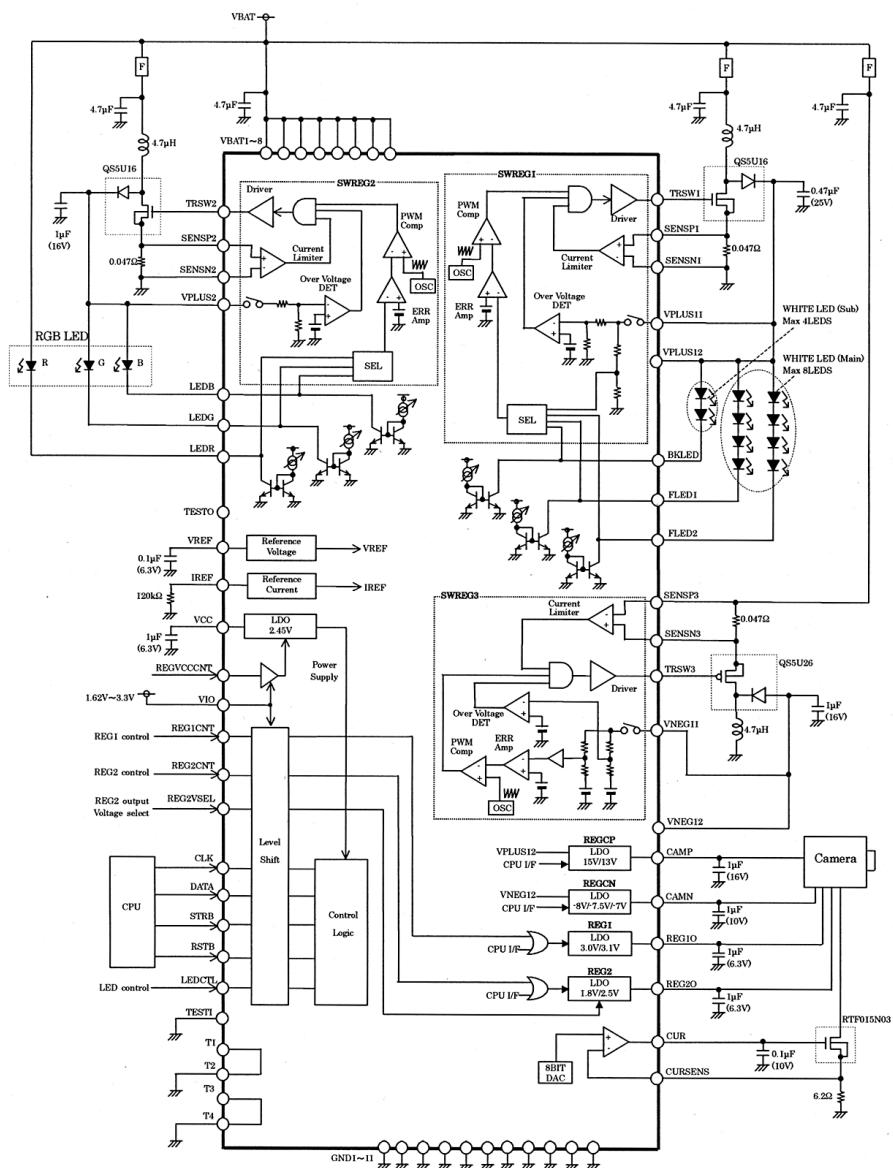
● Recommended Operating Conditions (Ta=-30 to +85°C)

| 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** (unless specified otherwise, these characteristics are based on the normal mode with $T_a = 25^\circ C$, $V_{BAT} = 3.6 V$, $V_{IO} = 1.8 V/3.0 V$, and $V_{CC} = 2.45 V$)

| 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



Appendix

Notes

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