



**THE DATASHEET OF
BD6023AGU-E2**

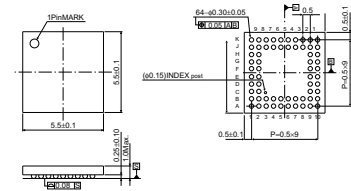
Power Supply IC for CCD Cameras

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)

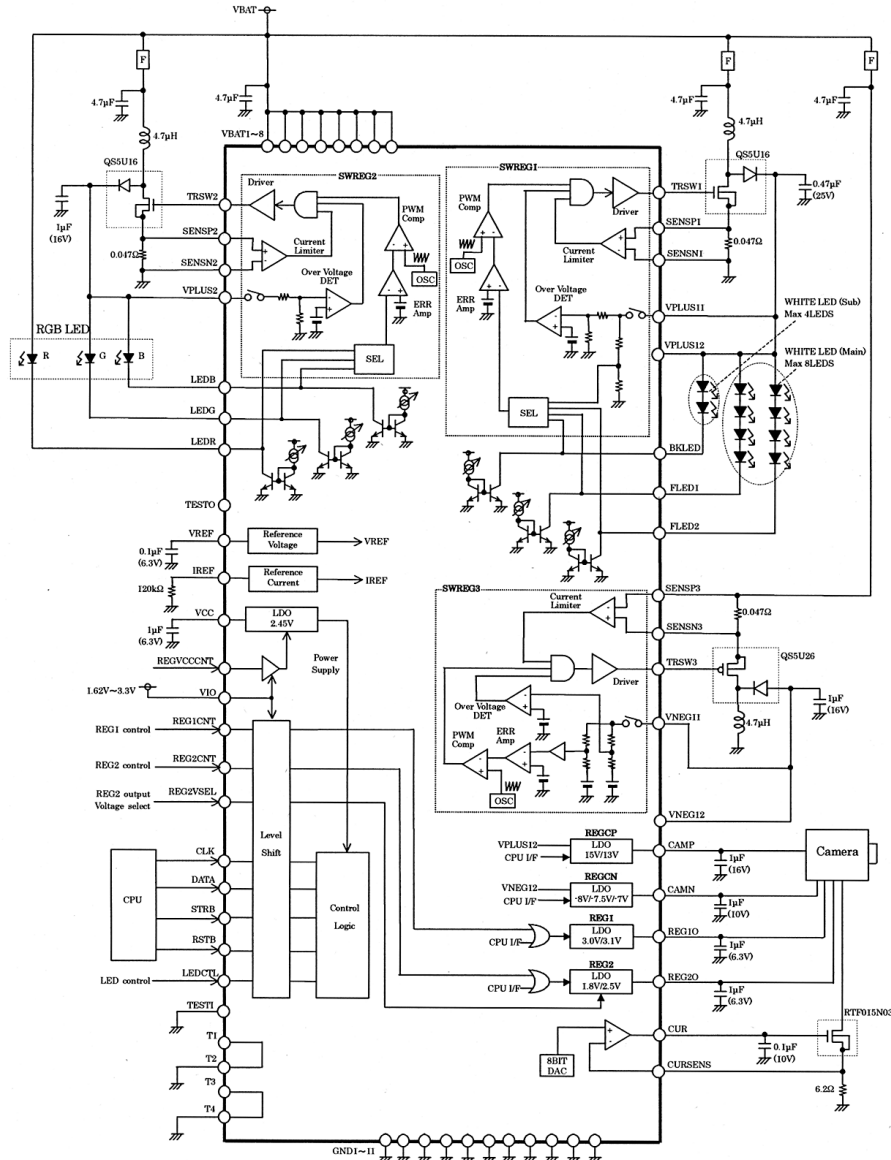
● Recommended Operating Conditions (Ta = -30 to +85°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Battery power supply voltage	V _{BAT}	2.7	-	4.5	V
VIO terminal voltage	V _{IO}	1.62	-	3.3	V

● Electrical Characteristics Characteristics (unless specified otherwise, these characteristics are based on the normal mode with Ta = 25°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
V _{BAT} circuit current	I _{Q1}	-	0.1	3.0	μA	RSTB=REGVCCCNT=0V
REGCP output voltage	V _{O151}	14.5	15.0	15.5	V	I _o =60mA, V _{PLUS12} =16.5V
REGCN output voltage	V _{O81}	-8.5	-8.0	-7.5	V	I _o =100mA, V _{NEG12} =-10V
REG1 output voltage	V _{O11}	2.94	3.0	3.06	V	I _o =150mA
REG 2 output voltage	V _{O21}	1.74	1.8	1.86	V	I _o =100mA
FLED1, FLED2, and BKLED drive currents	I _{LED13}	27.0	30.0	33.0	mA	At maximum settings
LEDR, LEDG, and LEDB drive currents (Standard brightness)	I _{LED12}	27.0	30.0	33.0	mA	At maximum settings
LEDR, LEDG, and LEDB drive currents (High brightness)	I _{LED22}	135	150	165	mA	At maximum settings
Constant current drive CURSENS control voltage	I _{CUR3}	0.57	0.60	0.63	V	At maximum settings

● Application Circuit Example



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