# 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)
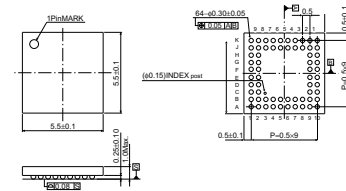
VCSP85H5

●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=25ûC)

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	ûC
Storage temperature range	Tstg	−55 to ＋150	ûC

*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
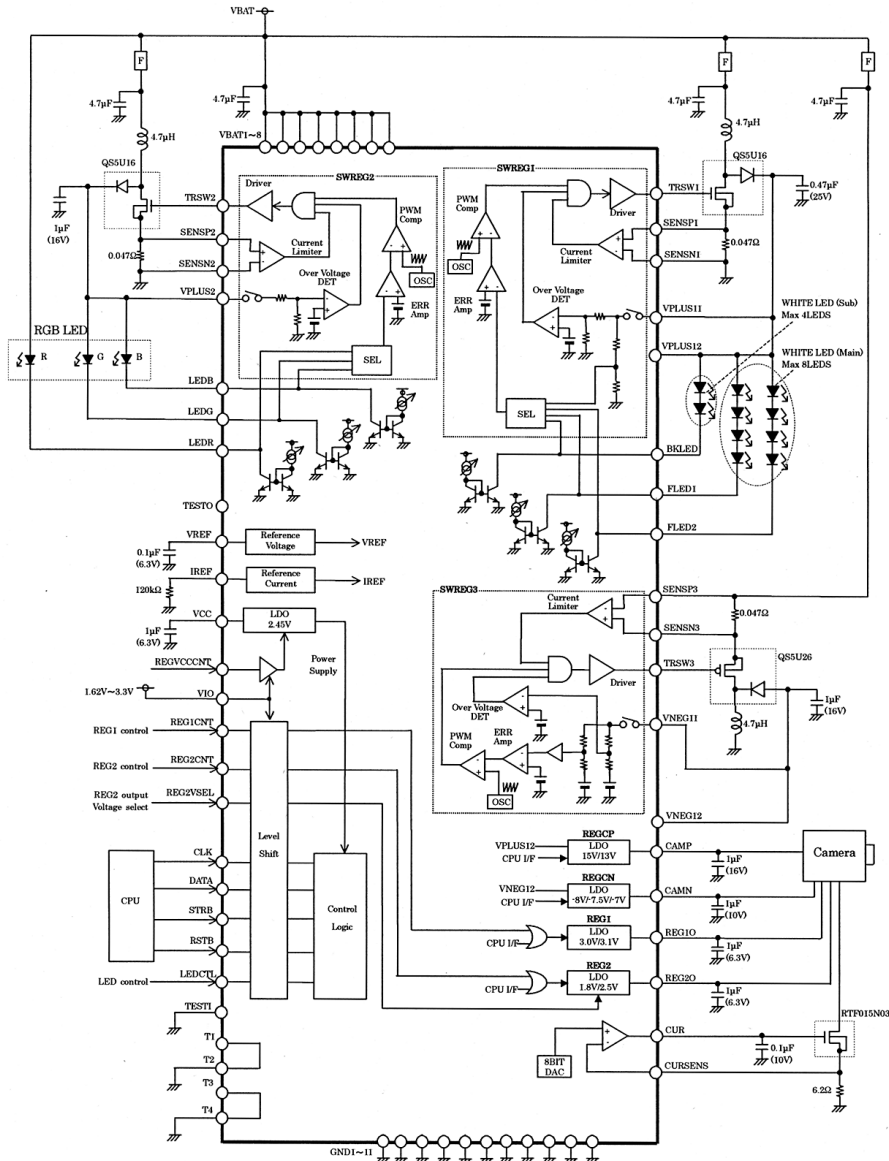
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