

STRUCTURE Silicon Monolithic Integrated Circuit

PRODUCT NAME System Reset IC

TYPE **BD47XXG Series**

FEATURES

- Detection voltage lineup : 1.9~4.6V
- High precision detection voltage :  $\pm 1.0\%$

○ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Parameter		Symbol	Limit	Unit
Supply Voltage	※1	VCC – GND	-0.3 ~ +10	V
Output Voltage	※1	VOUT	-0.3 ~ +10	V
Power Dissipation(SSOP5)	※2	Pd	540	mW
Operating Temperature Range	※1	Topr	-40 ~ +75	°C
Storage Temperature		Tstg	-55 ~ +125	°C
Junction Temperature		Tjmax	125	°C

※1 Do not exceed Pd.

※2 Mounted on 70mm × 70mm × 1.6mm Glass Epoxy PCB, Pd derated at 5.4mW/°C for temperature above Ta=25°C

NOTE : The product described in this specification is a strategic product (and/or service) subject to COCOM regulations. It should not be exported without authorization from the appropriate government.

NOTE : This product is not designed for protection against radioactive rays.

Status of this document

The Japanese version of this document is the formal specification.

A customer may use this translation version only for a reference to help reading the formal version.

If there are any differences in translation version of this document, formal version takes priority.

OELECTRICAL CHARACTERISTICS (Unless othewise specified, Ta=25°C)

Parameter	Symbol	Conditions	Limit			Unit
			Min	Typ	Max	
Detection Voltage	Vs	Vcc=H→L RL=4.7kΩ	Vs(T) × 0.99	Vs(T)	Vs(T) × 1.01	V
Temperature Coefficient Of Detection Voltage	Vs/ΔT	RL=4.7kΩ Ta=-20~+75°C Designed Guarantee	-	±0.01	-	%/°C
Detection Hysteresis Voltage	ΔVs	RL=4.7kΩ, Vcc=L→H→L	30	50	100	mV
Transfer Delay Time "H"	tPLH	CL=100pF, RL=4.7kΩ ※3	-	20	50	μsec
Transfer Delay Time "L"	tPHL	CL=100pF, RL=4.7kΩ ※4	-	60	120	μsec
Reset Output Voltage "L"	VOL	Vcc=Vs(min.)-0.05V, RL=4.7kΩ	-	0.1	0.4	V
Circuit Current ON	Icc1	Vcc=Vs(min.)-0.05V, RL=∞	-	1.5	3.0	μA
Circuit Current OFF	Icc2	Vcc=Vs(typ.)/0.85V, RL=∞	-	1.6	3.2	μA
Threshold Operating Voltage	VOPL	RL=4.7kΩ, VOL≥0.4V	-	0.65	0.85	V
Output Leak Current	IL	Vcc=VOUT=10V	-	-	0.1	μA
Reset Output Current "L"	IOL	Vo=0.4V, Vcc=Vs(min.)-0.05V	1.0	-	-	mA

Vs(T): Standard Detection Voltage (1.9V to 4.6V, 0.1V step)

RL: Pull-up resistor to be connected between VOUT and power supply.

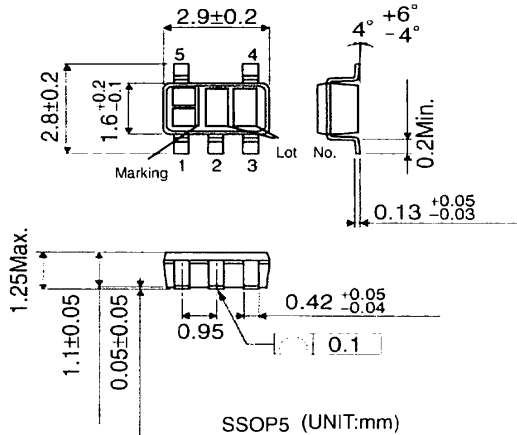
CL: Capacitor to be connected between VOUT and GND.

※3 tPLH: Vcc=(Vs(typ.)-0.4V)→(Vs(typ.)+0.4V)

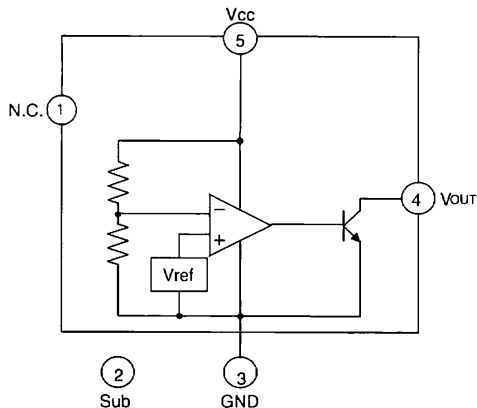
※4 tPHL: Vcc=(Vs(typ.)+0.4V)→(Vs(typ.)-0.4V)

Designed Guarantee.(Outgoing inspection is not done on all products.)

OPHYSICAL DIMENSIONS, MARKING



OBLOCK DIAGRAM



OPIN NO. , PIN NAME

Pin No.	Pin Name
1	N.C.
2	SUB
3	GND
4	VOUT
5	VCC

NOTE : Substrate Pin should be connected with GND

\* Please refer to Technical note concerning application circuit, and etc.

○STANDARD DETECTION VOLTAGE AND MARKING

Type	Standard Detection Voltage [V]	Marking	Type	Standard Detection Voltage [V]	Marking
BD4746G	4.600	B2	BD4732G	3.200	BN
BD4745G	4.500	B1	BD4731G	3.100	BM
BD4744G	4.400	BZ	BD4730G	3.000	BL
BD4743G	4.300	BY	BD4729G	2.900	BK
BD4742G	4.200	BX	BD4728G	2.800	BJ
BD4741G	4.100	BW	BD4727G	2.700	B3
BD4740G	4.000	BV	BD4726G	2.600	BH
BD4739G	3.900	BU	BD4725G	2.500	BG
BD4738G	3.800	BT	BD4724G	2.400	BF
BD4737G	3.700	BS	BD4723G	2.300	BE
BD4736G	3.600	BR	BD4722G	2.200	BD
BD4735G	3.500	BQ	BD4721G	2.100	BC
BD4734G	3.400	BP	BD4720G	2.000	BB
BD4733G	3.300	B4	BD4719G	1.900	BA

## ONOTES FOR USE

1. **Absolute maximum range**  
Absolute Maximum Ratings are those values beyond which the life of a device may be destroyed. We cannot be defined the failure mode, such as short mode or open mode. Therefore a physical security countermeasure, like fuse, is to be given when a specific mode to be beyond absolute maximum ratings is considered.
2. **GND potential**  
GND terminal should be a lowest voltage potential every state.  
Please make sure all pins which are over ground even if include transient feature.
3. **Mal-function may happen when the device is used in the strong electromagnetic field.**
4. **Bypass capacitor for noise rejection**  
Please put into capacitor to reject noise between VDD pin and GND.  
If extremely big capacitor is used, transient response might be late. Please confirm sufficiently for the point.
5. **Short Circuit between Terminals and Soldering**  
Don't short-circuit between Output pin and VDD pin, Output pin and GND pin, or VDD pin and GND pin. When soldering the IC on circuit board, please be unusually cautious about the orientation and the position of the IC. When the orientation is mistaken the IC may be destroyed.
6. **BD47XXG has extremely high impedance terminals. Small leak current due to the uncleanness of PCB surface might cause unexpected operations. Application values in these conditions should be selected carefully. If the leakage is assumed between the VOUT terminal and the GND terminal, the pull up resistor should be less than 1/10 of the assumed leak resistance**
7. **External parameters**  
The recommended parameter range for  $R_L$  is  $2k\Omega \sim 1M\Omega$ . When attempting to operate beyond these parameters, be sure to verify the actual operation before continuing use.
8. **Power on reset operation**  
Please note that the power on reset output varies with the Vcc rise up time.  
Please verify the actual operation.

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