STRUCTURE Silicon Monolithic Integrated Circuit

PRODUCT SERIES Low Voltage Detector IC

TYPE **BU49XXG Series**

FEATURES ・Detection voltage lineup :0.9V～4.8V

・High precision detection voltage :±1%

○ABSOLUTE MAXIMUM RATINGS (Ta=25℃)

Parameter		Symbol	Limit	Unit
Supply Voltage ※1		$V_{DD}-GND$	-0.3 to +7	V
Output Voltage ※1	CMOS Output	V_{OUT}	GND-0.3 to V_{DD}+0.3	V
Power Dissipation ※2		Pd	540	mW
Operating Temperature ※1		Topr	-40 to +125	℃
Storage Temperature Range		Tstg	-55 to +125	℃
Junction Temperature		Tjmax	125	℃

※1 Do not exceed Pd.

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

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.

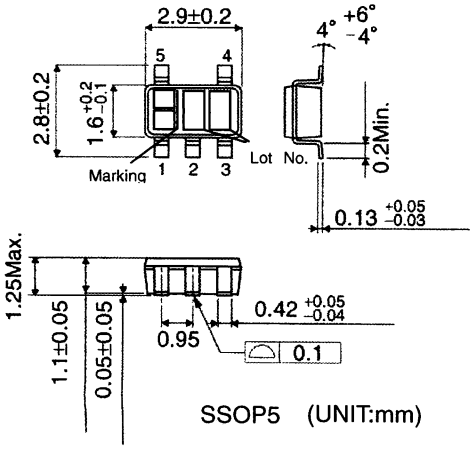
Status of this document
The Japanese version of this document is the formal specification.
A customer may use this translation version only for a reference to help reading the formal version.
If there are any differences in translation version of this document, formal version takes priority.

○ELECTRICAL CHARACTERISTICS（Unless Otherwise Specified Ta=-25 to 125℃）

Parameter	Symbol	Condition		Limit Min.	Limit Typ.	Limit Max.	Unit
Detection Voltage	VDET	VDD=H→L Ta=25℃		VDET(T) ×0.99	VDET(T)	VDET(T) ×1.01	V
Circuit Current when ON	IDD1	VDD=VDET−0.2V,	VDET=0.9-1.3V	-	0.15	0.88	μA
			VDET=1.4-2.1V	-	0.20	1.05	
			VDET=2.2-2.7V	-	0.25	1.23	
			VDET=2.8-3.3V	-	0.30	1.40	
			VDET=3.4-4.2V	-	0.35	1.58	
			VDET=4.3-4.8V	-	0.40	1.75	
Circuit Current when OFF	IDD2	VDD=VDET+2.0V,	VDET=0.9-1.3V	-	0.30	1.40	μA
			VDET=1.4-2.1V	-	0.35	1.58	
			VDET=2.2-2.7V	-	0.40	1.75	
			VDET=2.8-3.3V	-	0.45	1.93	
			VDET=3.4-4.2V	-	0.50	2.10	
			VDET=4.3-4.8V	-	0.55	2.28	
Operating Voltage Range	VOPL	VOL≦0.4V Ta=25℃～125℃		0.70	-	-	V
		VL≦0.4V Ta=-25℃～25℃		0.90	-	-	
'Low' Output Current (Nch)	IOL	VDS=0.05V, VDD=0.85V		20	100	-	μA
		VDS=0.5V, VDD=1.5V, VDET=1.7-4.8V		1.0	3.3	-	mA
		VDS=0.5V, VDD=2.4V, VDET=2.7-4.8V		3.6	6.5	-	
'High' Output Current (Pch)	IOH	VDS=0.5V, VDD=4.8V, VDET=0.9-3.9V		1.7	3.4	-	mA
		VDS=0.5V, VDD=6.0V, VDET=4.0-4.8V		2.0	4.0	-	
Detection Voltage Temperature Coefficient	VDET/ΔT	Ta=-40℃～125℃（Designed Guarantee）		-	±30	-	ppm/℃
Hysteresis Voltage	ΔVDET	VDD=L→H→L Ta=-40℃～125℃	VDET≦1.0V	VDET × 0.03	VDET × 0.05	VDET × 0.08	V
			VDET≧1.1V	VDET × 0.03	VDET × 0.05	VDET × 0.07	

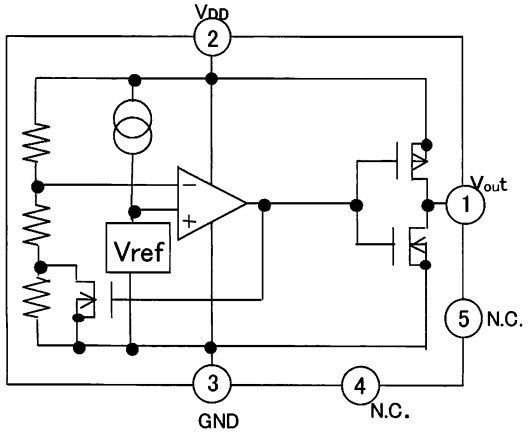
VDET(T) ：Standard Detection Voltage（0.9V to 4.8V、0.1V step）
Designed Guarantee.(Outgoing inspection is not done on all products.)

○PHYSICAL DIMENSIONS, MARKING



SSOP5 (UNIT:mm)

○BLOCK DIAGRAM



※ Please refer to technical note concerning application circuit, and etc.

○PIN NO. , PIN NAME

Pin Number	Pin Name
1	VOUT
2	VDD
3	GND
4	N.C.
5	N.C.

○STANDARD DETECTION VOLTAGE AND MARKING

Type	Standard Detection Voltage [V]	Marking	Type	Standard Detection Voltage [V]	Marking
BU4948	4.800	LH	BU4928	2.800	KM
BU4947	4.700	LG	BU4927	2.700	KL
BU4946	4.600	LF	BU4926	2.600	KK
BU4945	4.500	LE	BU4925	2.500	KJ
BU4944	4.400	LD	BU4924	2.400	KH
BU4943	4.300	LC	BU4923	2.300	KG
BU4942	4.200	LB	BU4922	2.200	KF
BU4941	4.100	LA	BU4921	2.100	KE
BU4940	4.000	KZ	BU4920	2.000	KD
BU4939	3.900	KY	BU4919	1.900	KC
BU4938	3.800	KX	BU4918	1.800	KB
BU4937	3.700	KW	BU4917	1.700	KA
BU4936	3.600	KV	BU4916	1.600	JZ
BU4935	3.500	KU	BU4915	1.500	JY
BU4934	3.400	KT	BU4914	1.400	JX
BU4933	3.300	KS	BU4913	1.300	JW
BU4932	3.200	KR	BU4912	1.200	JV
BU4931	3.100	KQ	BU4911	1.100	JU
BU4930	3.000	KP	BU4910	1.000	JT
BU4929	2.900	KN	BU4909	0.900	JS

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 . Electrical Characteristics

Be sure to check the electrical characteristics, that is one the tentative specification will be changed by temperature, supply voltage, and external circuit.

4 . Bypass Capacitor for Noise Rejection

Please put into the to reject noise between V_{DD} pin and GND. If extremely big capacitor is used, transient response might be late. Please confirm sufficiently for the point.

5 . Short Circuit between Terminal and Soldering

Don't short-circuit between Output pin and V_{DD} pin, Output pin and GND pin, or V_{DD} 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 . Electromagnetic Field

Mal-function may happen when the device is used in the strong electromagnetic field.

7 . The V_{DD} line inpedance might cause oscillation because of the detection current.

8 . A V_{DD} -GND capacitor (as close connection as possible) should be used in high V_{DD} line impedance condition.

9. BU49XXG 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. assumed leak resistance.

10. 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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As of 18th. April 2005