Ordering number : ENA1855A

SANYO Semiconductors
DATA SHEET

An ON Semiconductor Company

Monolithic Linear IC

LV0101CF — For Ultra-small illumination Sensor Photo IC

Overview

The LV0101CF is a photo IC for ultra-small illumination sensor. It enables to be mounted on a very small limited space such as on the mobile phones which is becoming small and thinner and on other mobile applications.

Functions

- Logarithm current output
- Excellent luminous efficiency function
- Built-in sleep function
- Low current consumption

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		6	V
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100	°C

Recommended Operating Conditions and Operating Voltage Range at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Recommended supply voltage	V_{CC}		2.3	2.5	5.5	V
SW pin low voltage	Vl	Sleep mode	0		0.4	V
SW pin high voltage	Vh	Normal mode	1.5		V_{CC}	V

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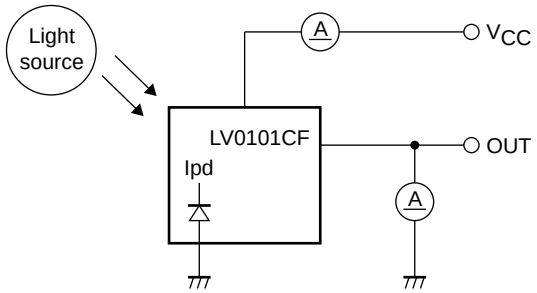
Electrical and optical characteristics at Ta = 25°C, V_{CC} = 2.5V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current dissipation *1, *3	I_{CC}	Ev = 1000 lx, R_L = 27kΩ	50	75	100	μA
Sleep current	Isl	Ev = 0 lx		0.01	0.1	μA
Output current (1) *1, *3	I_O1	Ev = 100 lx	18	21	24	μA
Output current (2) *1, *3	I_O2	Ev = 1000 lx	27	31	35	μA
Dark current	I_{leak}	Ev = 0 lx		0.35	0.5	μA
Temperature coefficient *2	Itc	Ev = 100 lx		0.1		%/°C
Rise time *4	Tr1	Ev = 1000 lx		40	100	μs
Fall time *4	Tf1	Ev = 1000 lx		2	5	ms
Peak sensitivity wave length *2	λp			550		nm

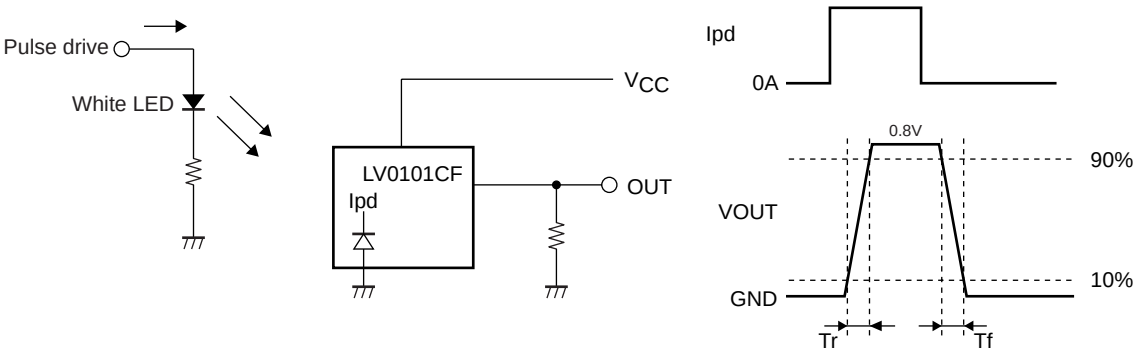
*1. Measured with the standard light source A. White LED is used instead in the mass production line.

*2. Design guaranteed item

*3. Test circuit for measuring current dissipation and output current



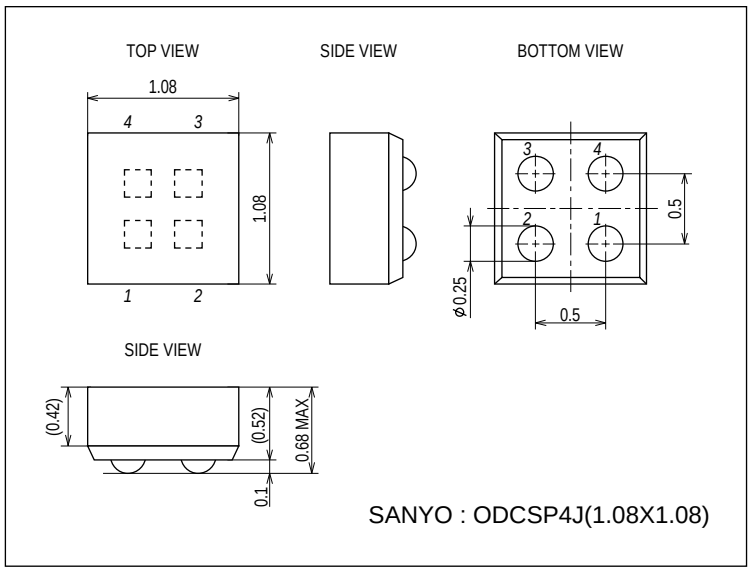
*4. Measuring method of rise time (Tr) and fall time (Tf)



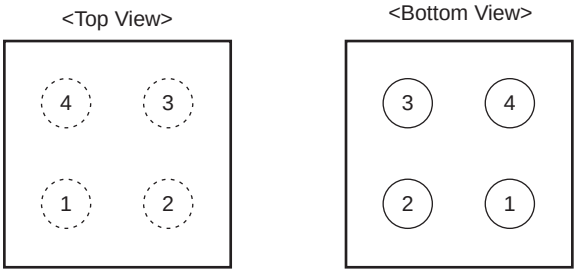
Package Dimensions

unit : mm (typ)

3410



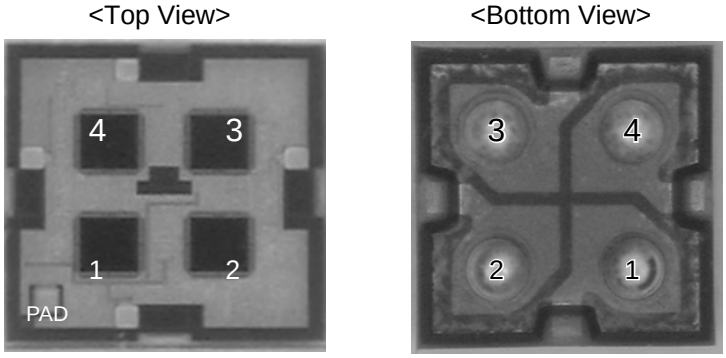
Pad Layout



Pin No.	Pin Name	Function
1	V_{CC}	Power supply
2	EN	Enable
3	GND	Ground
4	OUT	Output

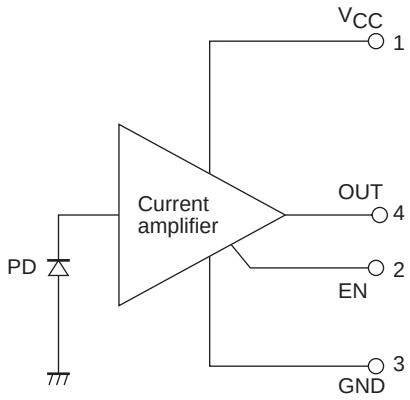
Ball pitch : 0.5mm, Ball size : 0.25mmϕ

Pad Layout (Photos)

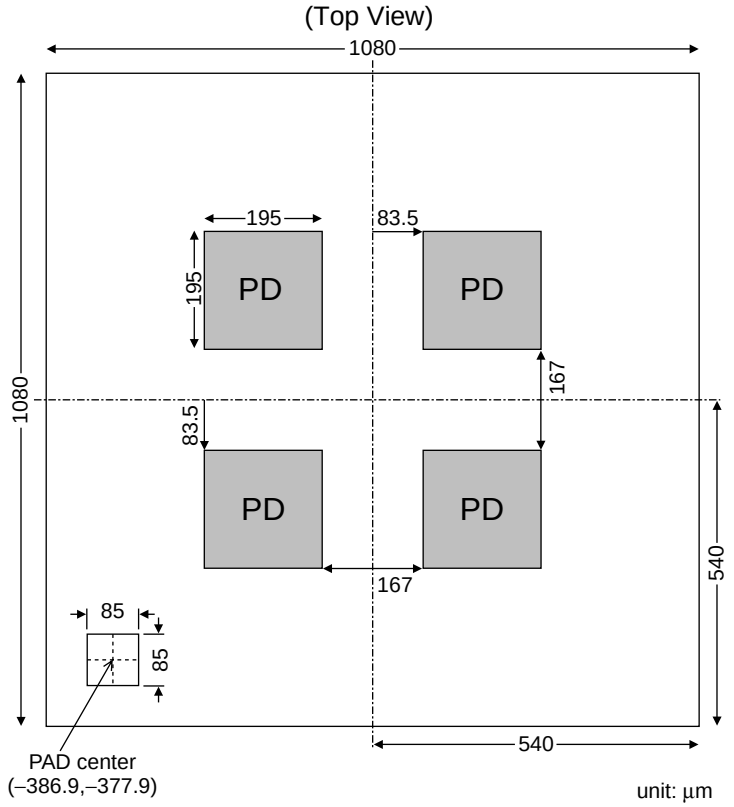


* The position with PAD becomes pin 1.

Internal Block Diagram

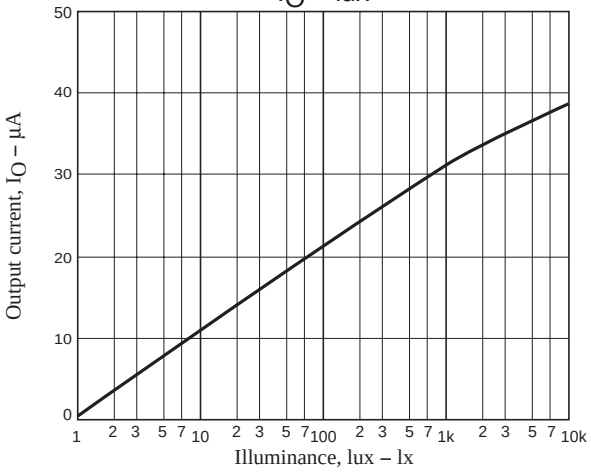


Chip Pattern Diagram

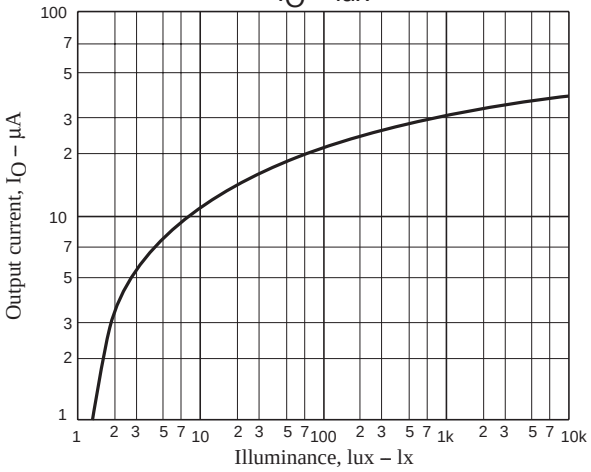


* The PAD becomes pin 1.

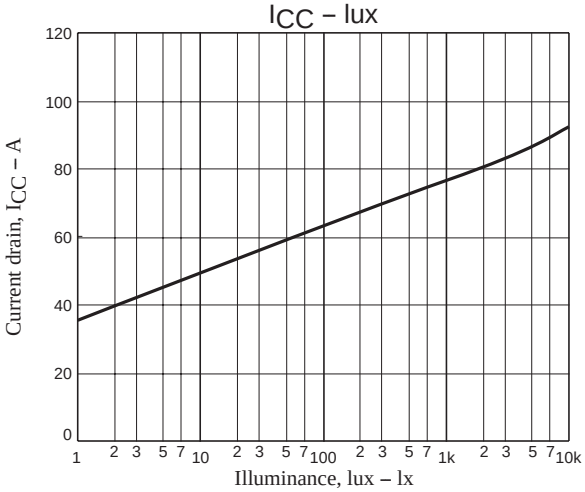
I_O – lux



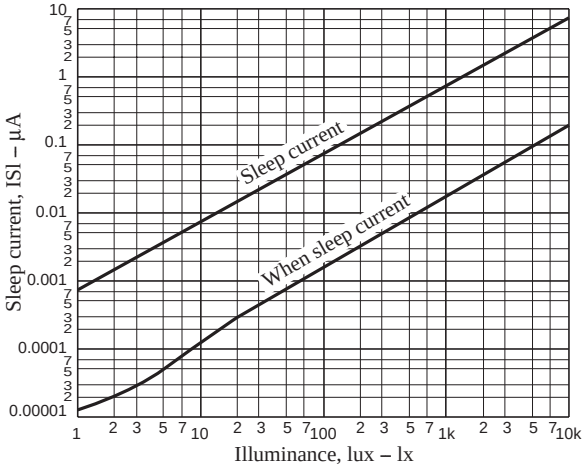
I_O – lux



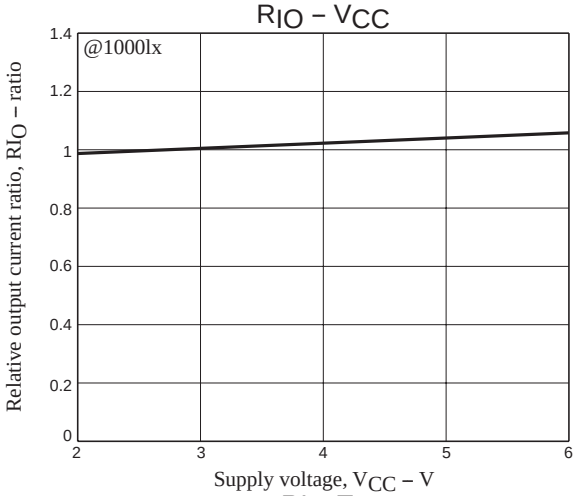
I_{CC} – lux



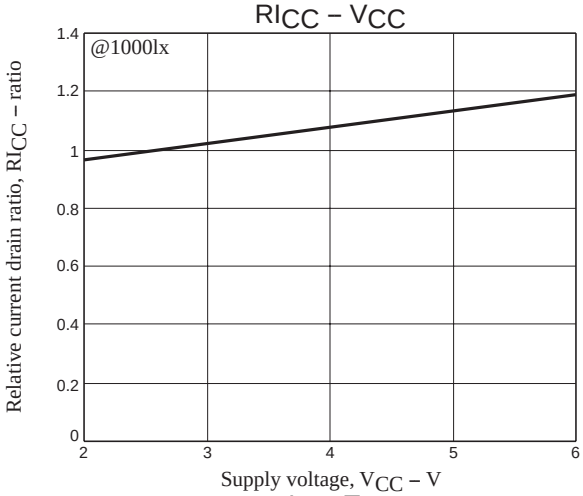
ISl – lux



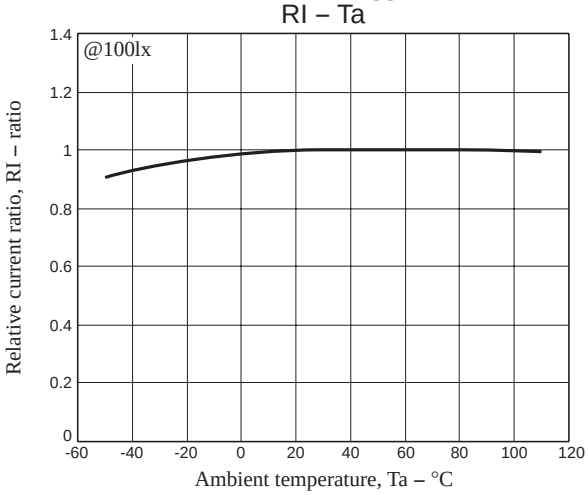
RI_O – V_{CC}



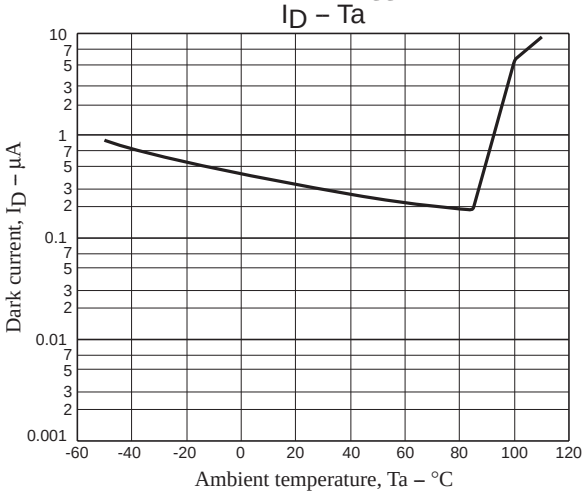
RI_{CC} – V_{CC}

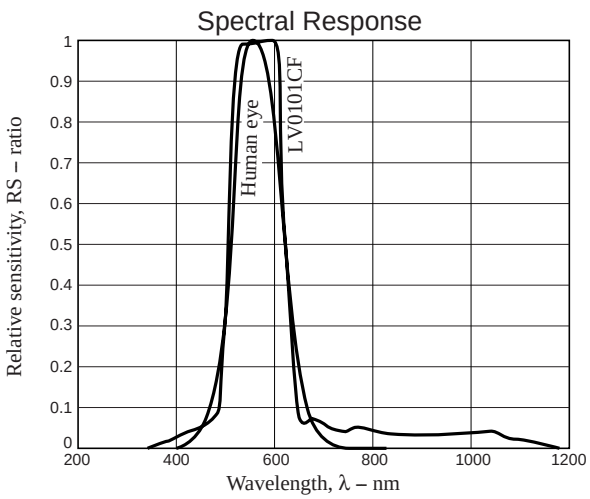


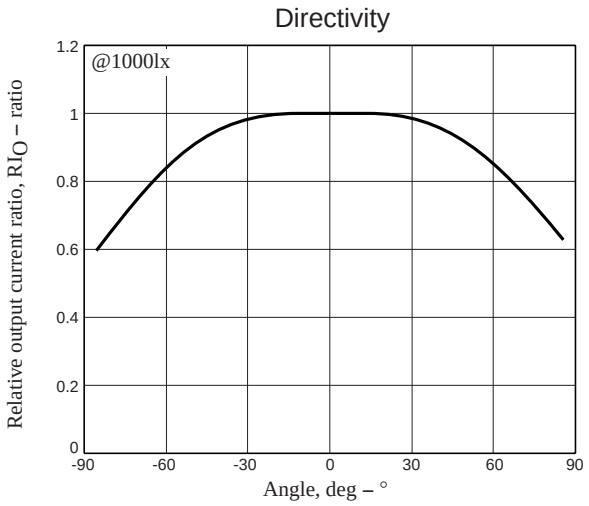
RI – Ta

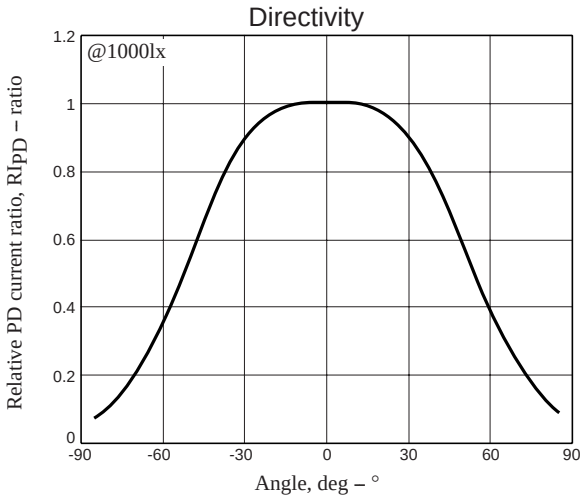


I_D – Ta









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