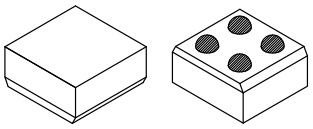
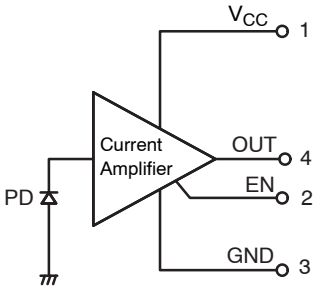
超小型ログ出力照度センサIC

LV0111CF



ODCSP4J
CASE 570AD

INTERNAL BLOCK DIAGRAM



ORDERING INFORMATION

Device	Package	Shipping†
LV0111CF−TLM−H	ODCSP4J (Pb−Free / Halogen Free)	5000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

概要

LV0111CFは、超小型ログ出力照度センサICである。小型、薄型化する携帯電話などの機器で、限られた小さなスペースに取り付けることが可能である。ハロゲンフリー対応品である。

特長

- 対数電流出力
- 優れた視感度特性
- スリープ機能内蔵
- 低消費電流

アプリケーション / 最終製品

- フューチャーホン、スマートフォン
- ディジタルテレビ(CRT、LCD、OLED)
- ラップトップPC、タブレットPC、PDA
- DSC、DVC、DSLR、ミラーレス

仕様

絶対最大定格 (at T_A = 25°C)

項目	記号	条件	定格値	Unit
最大電源電圧	V_{CC} max		6	V
動作周囲温度	Topr		−30 to +85	°C
保存周囲温度	Tstg		−40 to +100	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.
(参考訳)
最大定格を超えるストレスは、デバイスにダメージを与える危険性があります。これらの定格値を超えた場合は、デバイスの機能性を損ない、ダメージが生じ、信頼性に影響を及ぼす危険性があります。

推奨動作条件 (at T_A = 25°C)

項目	記号	条件	定格値			Unit
			Min	Typ	Max	
推奨電源電圧	VCC		2.3	2.5	5.5	V
SW端子ロー電圧	Vl	スリープモード	0	–	0.4	V
SW端子ハイ電圧	Vh	通常動作モード	1.5	–	V_{CC}	V

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.
(参考訳)
推奨動作範囲を超えるストレスでは推奨動作機能を得られません。推奨動作範囲を超えるストレスの印加は、デバイスの信頼性に影響を与える危険性があります。

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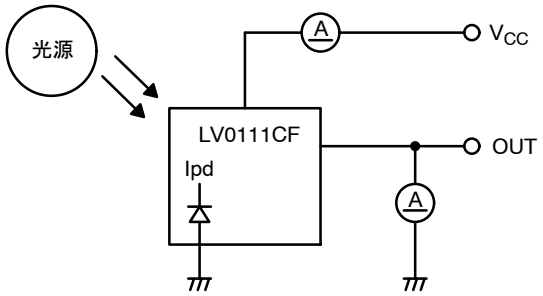
電気・光学的特性 (at T_A = 25°C, V_{CC} = 2.5 V)

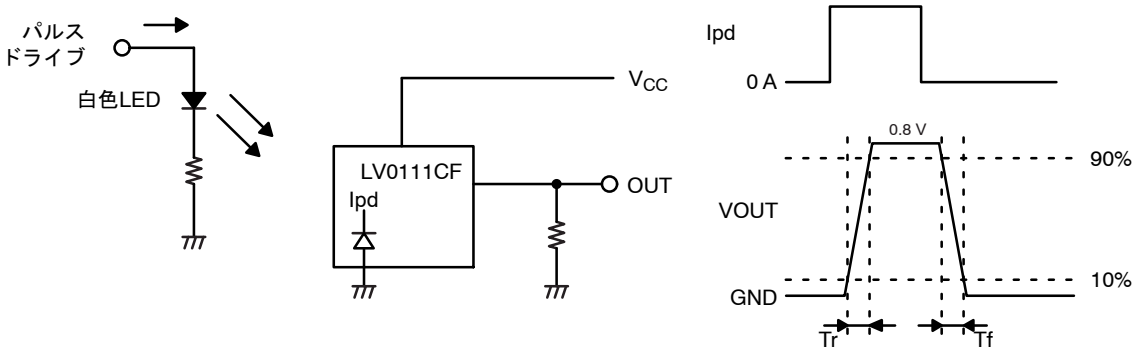
項目	記号	条件	定格値			Unit
			Min	Typ	Max	
消費電流 (注 1, 3)	I_{CC}	Ev = 1000 lx, R_L = 27 kΩ	50	75	100	μA
スリープ電流	I_{sl}	Ev = 0 lx	–	0.01	0.1	μA
出力電流 (1) (注 1, 3)	I_O1	Ev = 100 lx	18	21	24	μA
出力電流 (2) (注 1, 3)	I_O2	Ev = 1000 lx	27	31	35	μA
暗電流	I_{leak}	Ev = 0 lx	–	0.35	0.5	μA
温度係数 (注 2)	I_{tc}	Ev = 100 lx	–	0.1	–	%/°C
立ち上がり時間 (注 4)	Tr1	Ev = 1000 lx	–	40	100	μs
立ち下がり時間 (注 4)	Tf1	Ev = 1000 lx	–	2	5	ms
ピーク感度波長 (注 2)	λp		–	550	–	nm

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
(参考訳)
製品パラメータは、特別な記述が無い限り、記載されたテスト条件に対する電気的特性で示しています。異なる条件下で製品動作を行った時には、電気的特性で示している特性を得られない場合があります。

1. 標準 A 光源にて測定。ただし量産工程では白色 LED で代用。
2. 設計保証項目
3. 消費電流、出力電流測定回路

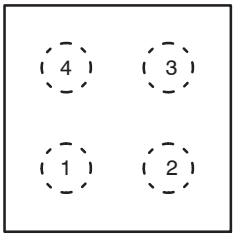


4. Tr、Tf 測定方法

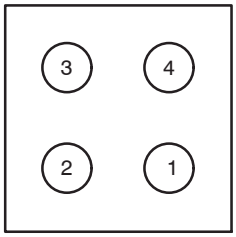


パッド配置図

(Top View)



(Bottom View)



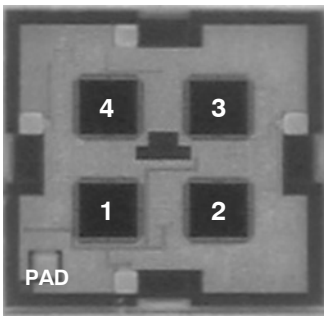
端子番号	端子名	機能
1	V_{CC}	電源端子
2	EN	イネーブル端子
3	GND	GND端子
4	OUT	出力端子

Ball Pitch: 0.5 mm, Ball Size: 0.25 mm ϕ

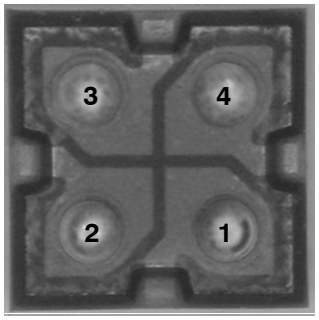
図 1. パッド配置図

パッド配置図(写真)

(Top View)



(Bottom View)



※PADがある位置が1ピンとなる。

図 2. パッド配置図(写真)

チップパターン図

代表的なパフォーマンス特性

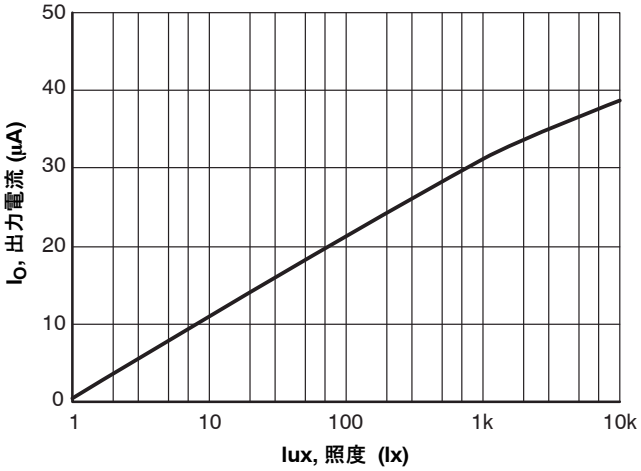


図 3. I_O − lux

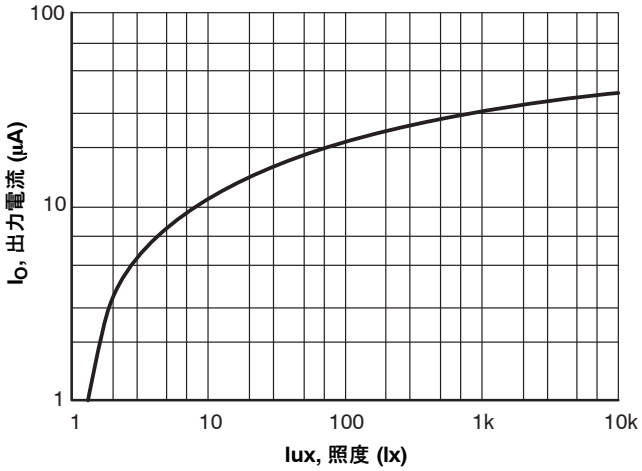


図 4. I_O − lux

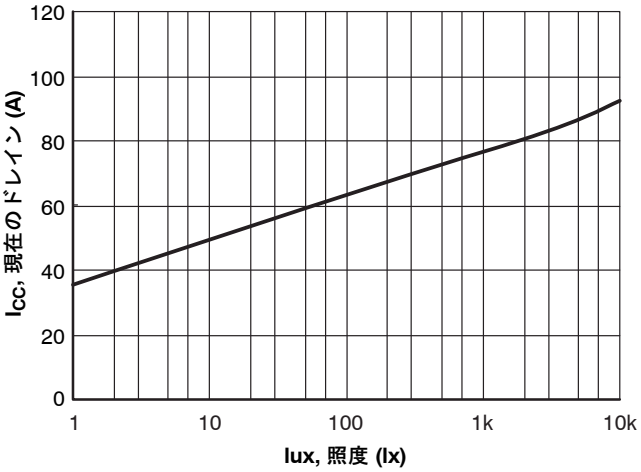


図 5. I_{CC} − lux

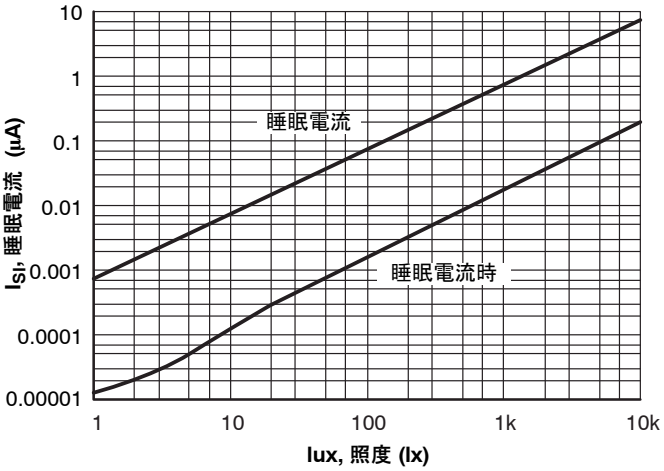


図 6. I_{SI} − lux

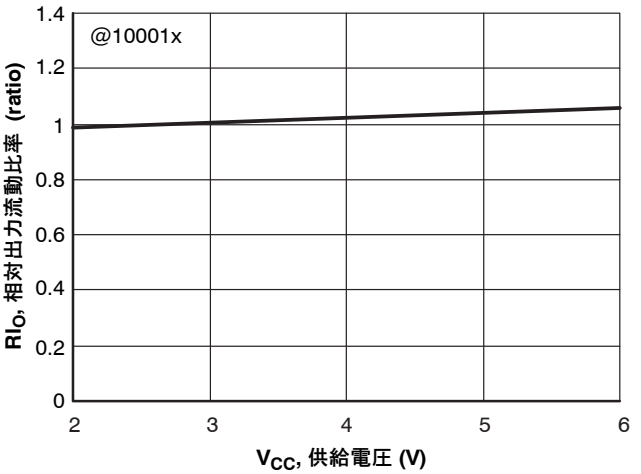


図 7. R_{IO} − V_{CC}

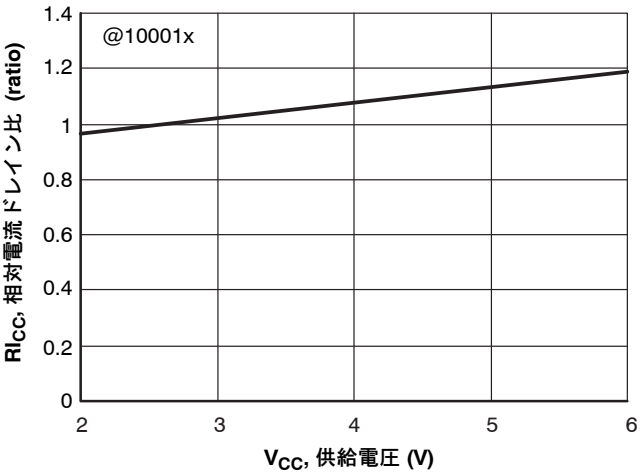


図 8. R_{ICC} − V_{CC}

代表的なパフォーマンス特性 (Continued)

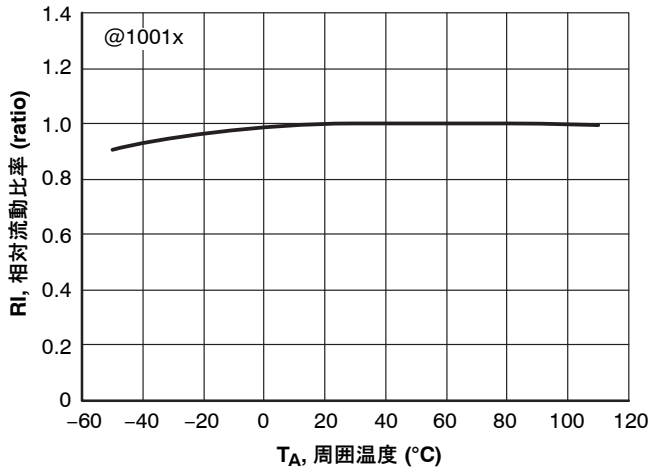


図 9. RI − T_A

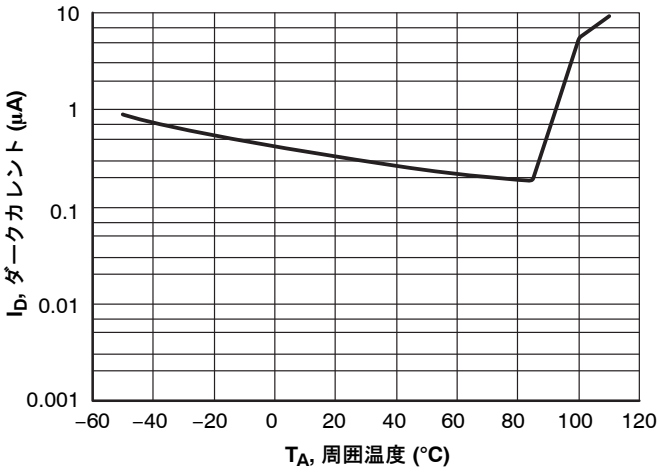


図 10. I_D − T_A

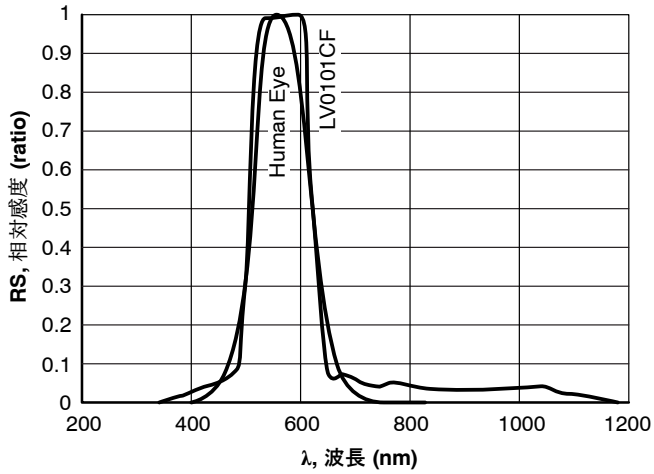


図 11. スペクトル応答

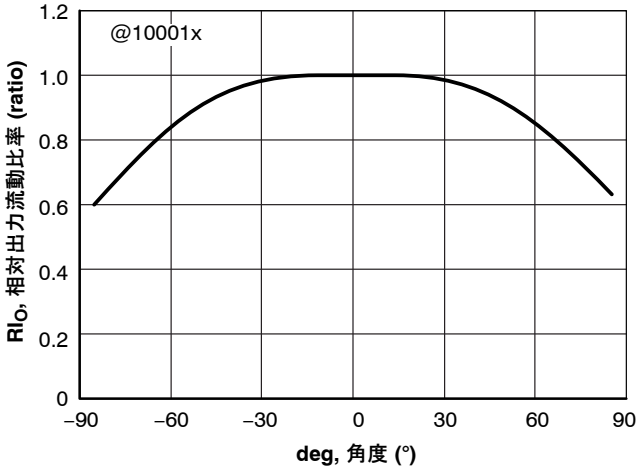


図 12. 指向性

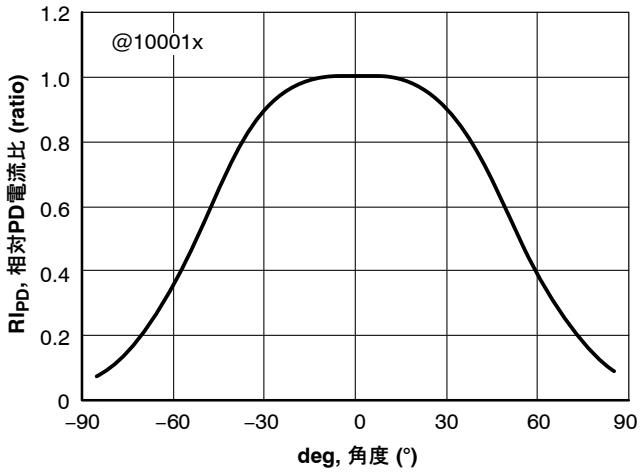
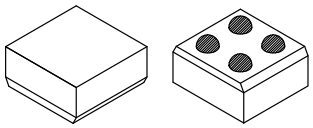
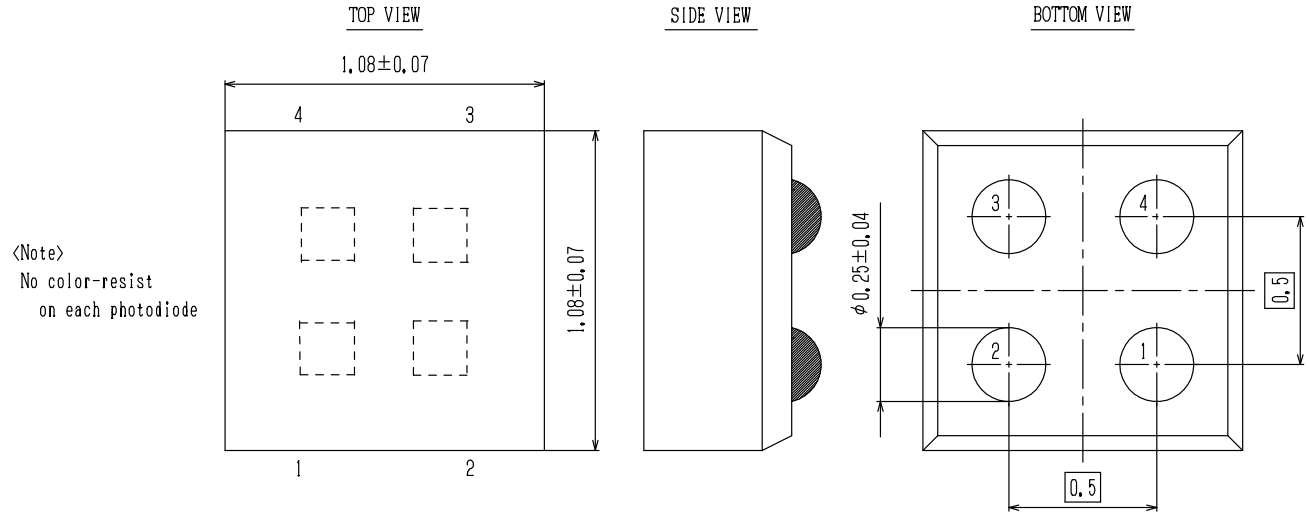


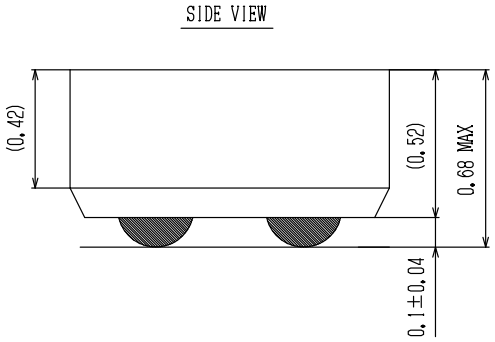
図 13. 指向性



ODCSP4J 1.08x1.08
CASE 570AD
ISSUE O

DATE 31 MAR 2012





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