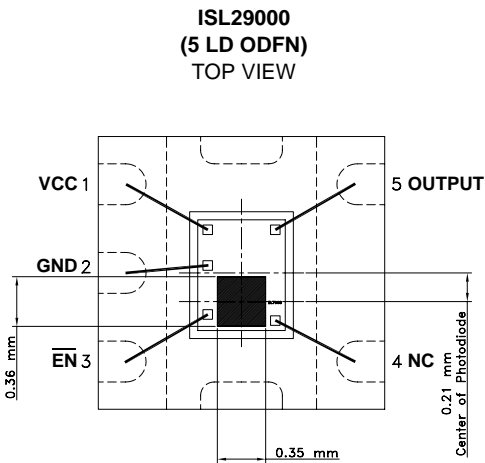


Ambient Light Photo Detect IC

The ISL29000 is a light-to-current optical sensor combining a photodiode and a current amplifier on a single monolithic IC. Output current is directly proportionate to the light intensity on the photodiode. Its sensitivity is superior to that of a phototransistor and exhibits little variation. Its spectral sensitivity matches closely to the luminous efficiency and linearity.

Housed in an ultra-compact surface mount clear plastic package, this device is excellent for power saving control function in cell phones, PDAs, and other handheld applications.

Pinout



Features

- Monolithic IC containing photodiode and amplifier
- Converts light intensity to current
- 2.5V to 5.5V supply range
- Low supply current - 1 μ A
- Excellent output linearity of luminance
- Ultra-compact and light surface mount package
- Pb-free package (RoHS compliant)

Applications

- Mobile phones
- Notebook PCs
- PDAs
- Video cameras
- Digital cameras

Ordering Information

PART NUMBER	TAPE & REEL	PACKAGE	PKG. DWG. #
ISL29000IROZ (See Note)	-	5 Ld ODFN (Pb-free)	MDP0052
ISL29000IROZ-T7 (See Note)	7"	5 Ld ODFN (Pb-free)	MDP0052

NOTE: Intersil Pb-free products employ special Pb-free material sets; molding compounds/die attach materials and 100% matte tin plate termination finish, which are RoHS compliant and compatible with both SnPb and Pb-free soldering operations. Intersil Pb-free products are MSL classified at Pb-free peak reflow temperatures that meet or exceed the Pb-free requirements of IPC/JEDEC J STD-020.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$)

Supply Voltage between V_{SD} and GND6V	Maximum Die Temperature	+125°C
Maximum Continuous Output Current	6mA	Storage Temperature	-65°C to +150°C
Operating Temperature	-40°C to +85°C		

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

IMPORTANT NOTE: All parameters having Min/Max specifications are guaranteed. Typical values are for information purposes only. Unless otherwise noted, all tests are at the specified temperature and are pulsed tests, therefore: $T_J = T_C = T_A$

Electrical Specifications $V_{CC} = 3V$, $T_A = 25^\circ\text{C}$, fluorescent light, unless otherwise specified.

PARAMETER	DESCRIPTION	CONDITION	MIN	TYP	MAX	UNIT
I_{CC}	Supply Current	$R_L = 1k\Omega$, EV = 1000lx		74		μA
		EV = 0		0.2		μA
I_{L1}	Light Current	EV = 1000lx	45	61	75	μA
I_{L2}	Light Current	EV = 100lx		6.5		μA
I_{LEAK}	Dark Current	EV = 0		0.06		μA
V_{O-MAX}	Maximum Output Compliance Voltage	At 95% of normal output current, EV = 1000lx		2.7		V
T_R	Rise Time (See Note)	$R_L = 5k\Omega$, EV = 1000lx		27	50	μs
T_F	Fall Time (See Note)	$R_L = 5k\Omega$, EV = 1000lx		78	110	μs
T_D	Delay Time for Rising Edge (See Note)	$R_L = 5k\Omega$, EV = 1000lx		80	110	μs
T_S	Delay Time for Falling Edge (See Note)	$R_L = 5k\Omega$, EV = 1000lx		35	50	μs
V_{LO}	Maximum Voltage at \overline{EN} Pin to Enable				0.6	V
V_{HI}	Minimum Voltage at \overline{EN} Pin to Disable		1.8			V

NOTE: Switching time measurement is based on Figures 1 and 2.

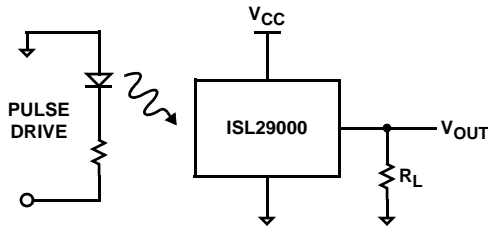


FIGURE 1. RISE/FALL TIME MEASUREMENT

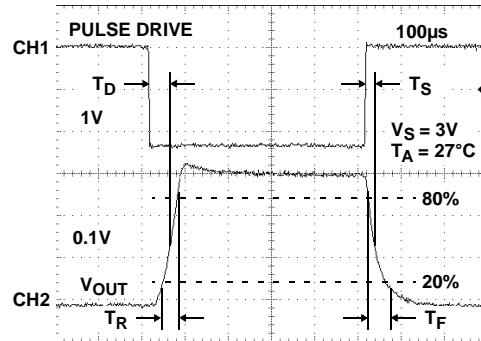


FIGURE 2.