

Block Diagram

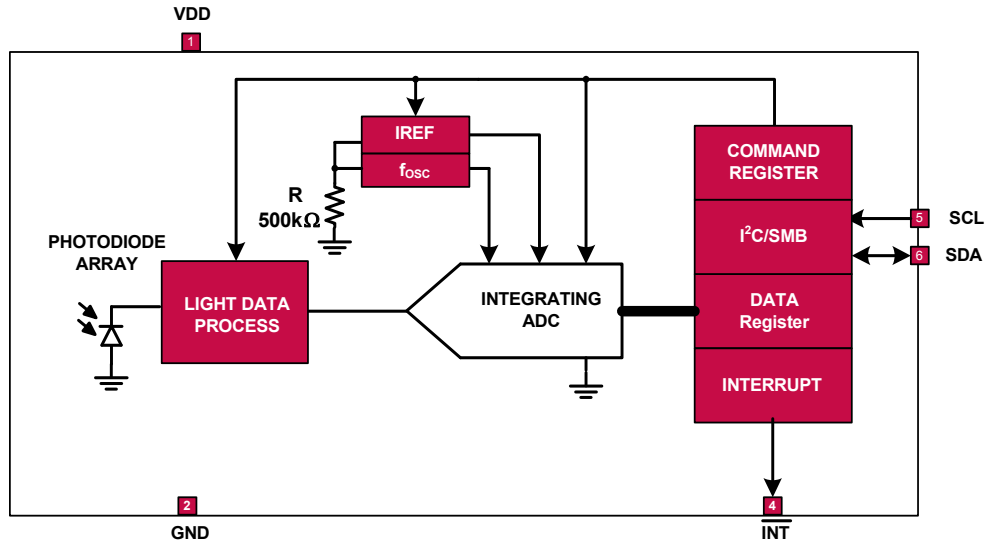
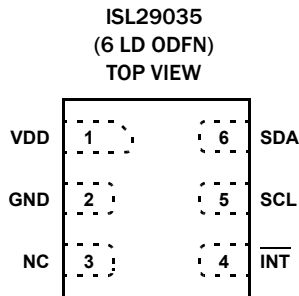


FIGURE 3. BLOCK DIAGRAM

Pin Configuration



Pin Descriptions

PIN NUMBER	PIN NAME	DESCRIPTION
1	VDD	Positive supply
2	GND	Ground pin
3	NC	No connect
4	$\overline{\text{INT}}$	Interrupt pin; LOW for interrupt alarming. $\overline{\text{INT}}$ pin is an open-drain. $\overline{\text{INT}}$ remains asserted until the interrupt status bit is reset.
5	SCL	I²C serial clock
6	SDA	I²C serial data

Ordering Information

PART NUMBER (Notes 1, 2, 3)	TEMP RANGE (°C)	TAPE AND REEL (UNITS)	PACKAGE (RoHS COMPLIANT)	PKG. DWG. #
ISL29035IROZ-T7	-40 to +85	3k units	6 Ld ODFN	L6.1.5x1.6
ISL29035IROZ-T7A	-40 to +85	250 units	6 Ld ODFN	L6.1.5x1.6
ISL29035EVAL1Z	Evaluation Board			

NOTES:

1. Please refer to [TB347](#) for details on reel specifications.
2. These Intersil Pb-free plastic packaged products employ special Pb-free material sets; molding compounds/die attach materials and NiPdAu-Ag plate - e4 termination finish, which is 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.
3. For Moisture Sensitivity Level (MSL), please see product information page for [ISL29035](#). For more information on MSL, please see tech brief [TB477](#).

Absolute Maximum Ratings

VDD to GND	+4.0V
I ² C Bus (SCL, SDA) and INT Pin Voltage	-0.2V to 4.0V
I ² C Bus (SCL, SDA) and INT Pin Current	<10mA
Input Voltage Slew Rate (Maximum)	0.1V/μs
ESD Ratings	
Human Body Model	3kV

Thermal Information

Thermal Resistance (Typical)	θ _{JA} (°C/W)
6 Ld ODFN Package (Note 4)	210
Maximum Junction Temperature (T _{JMAX})	+90°C
Storage Temperature Range	-40°C to +100°C
Operating Temperature	-40°C to +85°C
Pb-Free Reflow Profile	see TB477

CAUTION: Do not operate at or near the maximum ratings listed for extended periods of time. Exposure to such conditions may adversely impact product reliability and result in failures not covered by warranty.

NOTE:

- θ_{JA} is measured in free air with the component mounted on a high effective thermal conductivity test board with “direct attach” features. See Tech Brief [TB379](#).

Electrical Specifications

V_{DD} = 3.0V, T_A = +25°C, 16-bit ADC operation, unless otherwise specified.

DESCRIPTION	PARAMETER	TEST CONDITIONS	MIN (Note 7)	TYP	MAX (Note 7)	UNIT
Power Supply Range	V _{DD}		2.25		3.63	V
Supply Current	I _{DD}			57	85	μA
Supply Current when Powered Down	I _{DD1}	Software disabled or auto power-down		0.24	0.51	μA
Supply Voltage Range for I ² C Interface	V _{I2C}		1.7		3.63	V
ADC Integration/Conversion Time	t _{int}	16-bit ADC data		105		ms
I ² C Clock Rate Range	F _{I²C}			400		kHz
Count Output when Dark	DATA_0	E = 0 Lux, Range 0 (1k Lux)		1	5	Counts
Full Scale ADC Code	DATA_F				65535	Counts
Part-to-Part Variation (3σ Population)	%/Value	E = 300 Lux, cold white LED Range 0 (1k Lux)		±5		%
Light Count Output with LSB of 0.015 Lux/Count	ADC _{R0}	E = 300 Lux, cold white LED (Note 5), ALS Range 0 (1k Lux)		20473		Counts
Light Count Output with LSB of 0.06 Lux/Count	ADC _{R1}	E = 300 Lux, cold white LED (Note 5), ALS Range 1 (4k Lux)		5100		Counts
Light Count Output with LSB of 0.24 Lux/Count	ADC _{R2}	E = 300 Lux, cold white LED (Note 5), ALS Range 2 (16k Lux)		1400		Counts
Light Count Output with LSB of 0.96 Lux/Count	ADC _{R3}	E = 300 Lux, cold white LED (Note 5), ALS Range 3 (64k Lux)		366		Counts
Infrared Count Output (Note 6)	ADC_IR _{R0}	Range 0 (1k Lux)	1402	1997	2598	Counts
Infrared Count Output (Note 6)	ADC_IR _{R1}	Range 1 (4k Lux)		481		Counts
Infrared Count Output (Note 6)	ADC_IR _{R2}	Range 2 (16k Lux)		148		Counts
Infrared Count Output (Note 6)	ADC_IR _{R3}	Range 3 (64k Lux)		42		Counts
SDA Current Sinking Capability	I _{SDA}		4	5		mA
INT Current Sinking Capability	I _{INT}		4	5		mA

NOTES:

- 550nm green LED is used in production test. The 550nm LED irradiance is calibrated to produce the same DATA count against an illuminance level of 300 Lux Cold White LED.
- 850nm IR LED is used in production test. The 850nm LED irradiance is calibrated to produce the same DATA_IR count against an illuminance level of 210 lux sunlight at sea level.
- Compliance to datasheet limits is assured by one or more methods: production test, characterization and/or design.