Meet Future, LITEON your life

Optical Sensor

LITEON®
OPTOELECTRONICS

Optical Sensor

LITE-ON Technologies has evolved from just supplying traditional IR Discrete Emitter and Detector devices, to state of the art Infrared Data Association (IrDA) Transceivers and Sensor solutions.

ISD (Infrared Sensor Division) is part of LITE-ON OPTO group that offer products such as the IrDA solutions and optical sensor sensors.

IrDA transceivers are basically products which integrate both the IR emitter and detector into one package, to be used for fast wireless communications. For LITE-ON our main focus is to continue to be a leader in this field in offering state of the art SIR solutions with data rate of 115kbps.

Besides the IrDA SIR solutions, ISD main core focus is in the development of optical sensors, such as the Ambient and Proximity sensor solutions and next generation sensors such as the UV, Gesture and RGB sensors, etc. to enable us to be a key sensor supplier in the evolving medical and IOT segments.

Sensing solutions have evolved through the years from discrete components for the industrial market, to fully integrated solutions for use in the mobile and consumer electronics sector.

Maximizing performance, while minimizing battery power consumption is a key requirement and LITE-ON Technology Digital Light Photo Sensor solutions are designed to meet the requirement of our current and emerging applications in the consumer electronics, industrial and mobile markets.

The diversity of LITE-ON's infrared product offerings and Sensing solutions, allow them to be utilized in a varity of environments and gadgets, such as in office, home, financial, and entertainment based applications.

LITE-ON is transforming the Modern Lifestyle.

IrDA

Infrared (IR) is the most cost effective, proven technology to accomplish short-range and high speed wireless data transfer. LITE-ON offers state of the art SIR solutions in various form actor that help to ensure customers achieve maximum applications performance while realizing the benefits of faster time-to-market and reduced system cost.

Low Power SIR 115Kb/s Infrared Transceivers										
Part No.	Description	Package Dimension (H x W x D) (mm)	Link Distance (M)	Idle Current (mA)	Shutdown Current (nA)	Receiver Latency (uS)	Sypply Voltage (V)	Front	Top	Front (Shielded)
HSDL-3208	IrDA data compliant low power 115.2kbit/s infrared transceiver	1.60 x 7.00 x 2.80	0 to 0.3	0.1	1	70	2.7 to 3.6	#025	—	—
HSDL-3208	IrDA data compliant low power 115.2kbit/s infrared transceiver	1.80 x 7.40 x 2.90	0 to 0.3	0.1	1	70	2.7 to 3.6	—	—	#S25

SMD Bowl Type Infrared LED

This special package has an opaque base substrate to ensure zero emission from the sides and bottom which help to eliminate design problem relating to cross-talk. The SMD Reflective Bowl Type IR LED offers mobile phones designers the flexibility when pairing with Proximity Sensor given its narrow viewing angle without lens, high radient intensity, eliminate cross-talk and in minature package at a height of 0.9mm
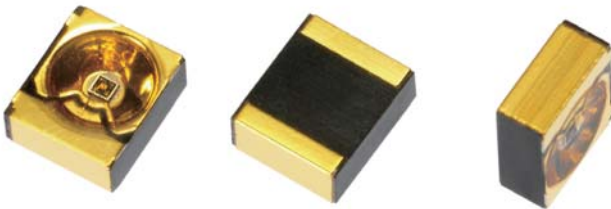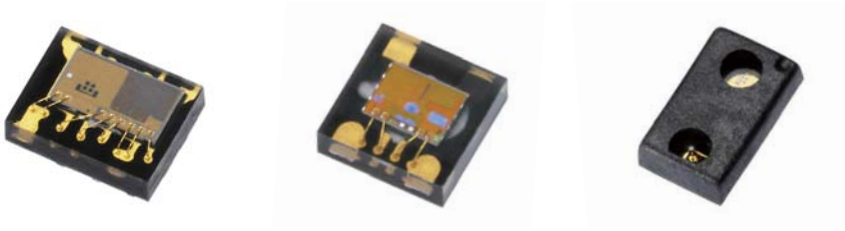
SMD Bowl Type Infrared LED								
Part No.	Description	Package Dimension (L x W x H) (mm)	Forward Voltage (V)	Viewing Angle	Radiant Intensity (mW/Sr)	Continuous Forward Current (max) mA	Wavelength (nm)	Device Type
LTE-C249	High Performance infrared emitter with low height	2.30 x 1.95 x 0.90	1.6V typ @ 100mA	30	20-114 @ 100mA	100	855	Bowl IR LED
LTE-C269	High Performance infrared emitter with low height	2.30 x 1.95 x 0.90	1.4V typ @ 100mA	30	35-114 @ 100mA	100	940	Bowl IR LED

Digital Ambient Light and Digital Proximity Sensor

Sensing solutions have evolved through the years from discrete components for the industrial market, to fully integrated solutions for use in the mobile and consumer electronics sector. Digital Ambient Light and Digital Proximity Sensor is designed to detect the bright & dim digital light conditions to control display and / or keypad backlighting. This will help to reduce eye strain for comfortable vision, increase lamp life and minimizing power consumption which are designing to meet the requirements of our current and emerging applications in the consumer electronics, industrial and mobile markets.

New Feature add-on to Optical Sensor

Optical Sensing solutions have continued to mature and innovate into integrating new features on top of traditional 3-in-1 sensor. Gesture sensor has enable smartphones users to experience a must personalize response by a waving of hand on the surface of the touch panel. RGB sensor is now able to sense more intelligently the environment light as well as color temperature. This information of color sensor has enable various applications that requires color compensation towards environment light. Besides that, UV sensors have emerged to be relatively useful for wearable applications. By determining the UVI of the environment, wearable devices can be "smarter" to inform and feedback necessary precautions towards the end user.

Digital Light Sensor										
Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range
LTR-329ALS	Digital Light Sensor	ChipLED 4 pins	2.00 x 2.00 x 0.70	VDD, GND, SDA, SCL	-30 to +70	2.4 to 3.6	I2C fast mode (400kbit/s)	No	16-bit ADC (linear)	0.01 lux to 64k lux
LTR-303ALS	Digital Light Sensor	ChipLED 6 pins	2.00 x 2.00 x 0.70	VDD, NC, GND, SCL, INT, SDA	-30 to +70	2.4 to 3.6	I2C fast mode (400kbit/s)	Yes	16-bit ADC (linear)	0.01 lux to 64k lux
LTR-308ALS	Very Low Power Consumption Digital Light Sensor	ChipLED 6 pins	2.00 x 2.00 x 0.70	VDD, NC, GND, SCL, INT, SDA	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux

RGB Color Sensor												
Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range	PS Full Scale ADC Count	Detection Range (mm)
LTR-380RGB	RGB Sensor + Digital Light Sensor	ChipLED 6 pins	2.00 x 2.00 x 0.70	VDD, NC, GND, SCL, INT, SDA	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	N.A.	N.A.

Integrated RGB Color Sensor												
Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range	PS Full Scale ADC Count	Detection Range (mm)
LTR-580RGB	RGB Sensor + Digital Light Sensor + Proximity Sensor + IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	8 to 11-bit ADC (linear)	0-100
LTR-588RGB	RGB Sensor + Digital Light Sensor + Proximity Sensor + IR LED (small window)	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	8 to 11-bit ADC (linear)	0-100

Digital Proximity Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	PS Full Scale ADC Count	Detection Range (mm)
LTR-659PS	Digital Proximity Sensor+ IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-30 to +70	2.4 to 3.6	I2C fast mode (400kbit/s)	Yes	11-bit ADC (linear)	0-100
LTR-676PS	Digital Proximity Sensor+ IR LED (Small Window)	ChipLED 8 pins	3.94 x 2.36 x 1.50	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 11-bit ADC (linear)	0-100
LTR-706PS	Digital Proximity Sensor+ VCSEL (Small Window)	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-30 to +70	2.7 to 3.6	I2C fast mode (400kbit/s)	Yes	11-bit ADC (linear)	0-100

UV Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS / UV Full Scale ADC Count	Light Range	UV Sensitivity (Count/ UVI)	PS Full Scale ADC Count	Detection Range (mm)
LTR-390UV	UV Sensor + Digital Light Sensor	ChipLED 6 pins	2.00 x 2.00 x 0.70	VDD, NC, GND, SCL, INT, SDA	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	1400	N.A.	N.A.

Integrated UV Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS / UV Full Scale ADC Count	Light Range	UV Sensitivity (Count/ UVI)	PS Full Scale ADC Count	Detection Range (mm)
LTR-590UV	UV Sensor + Digital Light Sensor + Proximity Sensor + IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	2300	Up to 11-bit ADC (linear)	0-100

Heart Rate Monitoring Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	No of Pins	Operating Temp (°C)	Supply Voltage (V)	Supply Current (mA), Typ @25Hz	Standby Current (uA), Typ	Interface	Emitter Sensitivity
LTR-800HR	AFE Integrated Optical HRM Sensor	FPC connector	18.50 x 15.00 x 2.90	12	-20 to +85	3.0 to 3.6	0.76	5	I2C fast mode (400kbit/s)	Green (525nm)
LTR-801SHR	AFE + Accelerometer Integrated Optical HRM Sensor (Slim Package)	FPC connector	17.40 x 12.70 x 2.90	12	-20 to +85	3.0 to 3.6	0.76	5	I2C fast mode (400kbit/s)	Green (525nm)
LTR-806HR	AFE Integrated Optical HRM Sensor	SMT	8.0 x 2.6 x 1.50	6	-20 to +85	3.0 to 3.6	0.95	5	I2C fast mode (400kbit/s)	Green (525nm)
LTR-810HR	Fully Integrated Analog Optical HRM Sensor with 4 Emitters	SMT	5.88 x 2.36 x 0.95	12	-20 to +85	1.5 to 5.5	N.A.	N.A.	Analog Output	Green (525nm)
LTR-811HR	Fully Integrated Analog Optical HRM Sensor with 2 Emitters	SMT	9.20 x 4.40 x 1.10	8	-20 to +85	1.5 to 5.5	N.A.	N.A.	Analog Output	Green (525nm)
LTR-820HR	Ultra Small Chipled Package Optical HRM Sensor	SMT	3.96 x 2.36 x 1.35	8	-40 to +85	1.7 to 3.6	N.A.	N.A.	I2C fast mode (400kbit/s)	IR (940nm)

2-in-1 Integrated Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range	PS Full Scale ADC Count	Detection Range (mm)
LTR-507ALS	(2-in-1) Digital Light Sensor + Long Distance Proximity Sensor + LED Driver	ChipLED 8 pins	2.65 x 2.00 x 1.30	VDD, AGND, LED GND, SEL, LDR, INT, SCL, SDA	-40 to +85	2.4 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 64k lux	11-bit ADC (linear)	0-500

3-in-1 Integrated Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range	PS Full Scale ADC Count	Detection Range (mm)
LTR-559ALS	(3-in-1) Digital Light Sensor +Proximity Sensor +IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-30 to +70	2.4 to 3.6	I2C fast mode (400kbit/s)	Yes	16-bit ADC (linear)	0.01 lux to 64k lux	11-bit ADC (linear)	0-100
LTR-578ALS	(3-in-1, Small Window, FOV = +/-40deg) Digital Light Sensor +Proximity Sensor +IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	Up to 11-bit ADC (linear)	0-100
LTR-579ALS	(3-in-1, Small Window, FOV = +/-24deg) Digital Light Sensor +Proximity Sensor +IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.50	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	Up to 11-bit ADC (linear)	0-100
LTR-778ALS	(3-in-1, Small Window, FOV = +/-36deg) Digital Light Sensor +Proximity Sensor +VCSEL	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, NC,En-B, LEDA,GND, SCL,VDD	-30 to +70	2.7 to 3.6	I2C fast mode (400kbit/s)	Yes	16-bit ADC (linear)	0.01 lux to 64k lux	11-bit ADC (linear)	0-100

4-in-1 Integrated Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range	PS Full Scale ADC Count	Detection Range (mm)
LTR-580RGB	RGB Sensor + Digital Light Sensor + Proximity Sensor + IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	Up to 11-bit ADC (linear)	0-100
LTR-588RGB	RGB Sensor + Digital Light Sensor + Proximity Sensor + IR LED (Small Window)	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	Up to 11-bit ADC (linear)	0-100
LTR-590UV	UV Sensor + Digital Light Sensor + Proximity Sensor + IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-40 to +85	1.7 to 3.6	I2C fast mode (400kbit/s)	Yes	Up to 20-bit ADC (linear)	0.01 lux to 157k lux	Up to 11-bit ADC (linear)	0-100

Gesture Integrated Sensor

Part No.	Description	Package Type	Package Dimension (L x W x H) (mm)	Pin-Out	Operating Temp (°C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range	PS & GS Full Scale ADC Count	Detection Range (mm)
LTR-91400	Gesture Sensor + Digital Light Sensor + Proximity Sensor + IR LED	ChipLED 8 pins	3.94 x 2.36 x 1.35	SDA,INT, LDR,LEDK, LEDA,GND, SCL,VDD	-30 to +70	2.4 to 3.6	I2C fast mode (400kbit/s)	Yes	16-bit ADC (linear)	0.01 lux to 64k lux	PS: 11-bit ADC(linear) GS: 8-bit ADC (linear)	50 (typ)