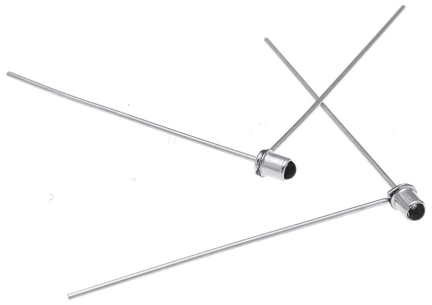
Honeywell

Infrared Sensors Line Guide



Solid, sensitive solutions. Optoelectronics integrates optical principles and semi-conductor electronics — the inter-conversion of electricity to light. In electronic systems where feedback and control systems are common, these infrared sensors are often critical.

Honeywell Sensing and Control (S&C) offers a broad selection of often reliable, cost-effective, off-the-shelf optoelectronic sensor solutions for many potential applications — including printers and copiers, metering and data storage systems, liquid-level sensing, motion control, scanning, automated transactions, barcode readers, drop sensors, and other medical equipment. We also provide a wide array of custom solutions ranging from special electrical selections, special markings, wiring, and connectors to completely unique housings or integrated circuits.

FEATURES

REFLECTIVE SENSORS

HOA1395.

Features: Side-looking plastic package • Phototransistor output • Infrared emitter and phototransistor detector in a single package • Low profile for design flexibility • Designed for short-distance detection • Enhanced sensitivity • Unfocused for sensing diffused surfaces

Benefits: Miniature infrared sensor designed to sense reflective objects at short distances. Infrared emitter and phototransistor are mounted side-by-side with an integral barrier to minimize cross-talk.

HOA0149.

Features: Phototransistor output • Focused for maximum response • Low-profile housing • Plastic ABS molded housing

Benefits: An infrared emitter and phototransistor encased side-by-side on converging optical axes. Phototransistor responds to radiation from an infrared transmitter only when a reflective object passes within its field of view.

HOA1180.

Features: Choice of phototransistor or photodarlington output • Enhanced sensitivity • Wide operating temperature -55 °C to 100 °C [-67 °F to 212 °F] • 305 mm [12 in] min. 28 AWG PVC insulated wire leads • Metal can packaged components

Benefits: Consists of an infrared emitter and phototransistor or photodarlington encased side-by-side on converging axes. Detector responds to radiation from an infrared emitter only when a reflective object passes within its field of view.

HOA1397.

Features: Choice of phototransistor or photodarlington output • Low profile for design sensitivity • Unfocused for sensing diffused surfaces • Plastic-molded components

Benefits: An infrared emitter and phototransistor or photodarlington encased side-by-side on parallel axes. Detector responds to radiation from infrared emitter only when a reflective object passes within its field of view. Potential applications include presence sensing, motion sensing, movement detection, and counting.

HOA1405.

Features: Phototransistor output • Focused for maximum response • Ambient light and dust protective filter • Plastic-molded components

Benefits: An infrared emitter and phototransistor encased side-by-side on converging optical axes. Phototransistor responds to radiation from an infrared emitter only when a reflective object passes within its field of view. Employs an IR transmissive filter to minimize the effects of visible ambient light and to provide a smooth optical face which prevents the accumulation of airborne

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

continued on page 10

Infrared Sensors Line Guide

Often reliable, cost-effective performance.
Often ideal for object presence, motion and limit sensing, position encoding, movement detection, and counting, the Honeywell S&C infrared sensor line consists of reflective and transmissive sensors, detectors, emitters, and encoders.

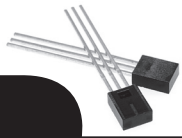
Reflective: An infrared emitter and phototransistors or photodarlingtons are encased side-by-side. Detector responds to radiation from the infrared emitter when a reflective object passes.

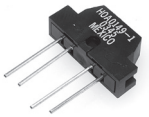
Transmissive: Through a field of view, an infrared emitter and a photosensor are mounted facing each other when an opaque object passes through the slot, interrupting the infrared path, it is detected. These metal or plastic products offer a variety of electro-optical characteristics and package styles.

Detectors: Available in a number of different plastic, metal, and ceramic packages, with a wide variety of electro-optical characteristics. Can sense light over broad spectrum from low visible through near infrared wavelengths. Analog detectors are available in photodiodes, phototransistors, and photodarlingtons. Digital Optoschmitt detectors are also available.

Emitters: Available in a variety of packages to compliment the Honeywell detector family. Available in transfer-molded plastic packages, as well as ceramic surface mount or metal packages in various styles. Two basic chip types are used: GaAs and AlGaAs.

Encoders: Sensing speed and direction or mechanical motion, these PC-mount, plastic products are typically used in conjunction with an encoder disk or linear encoder strip. As the interruptive pattern moves, the sensor provides data for processing.







Reflective Sensors	HLC1395	HOA0149	HOA1180
Package style	miniature	pc/chassis mount	chassis mount
Coupled current (Ic) minimum	0.6 mA	1 mA	0.16 mA
Forward current	10 mA	40 mA	30 mA
Optimum point of response	1,02 mm [0.04 in]	3,80 mm [0.15 in]	12,7 mm [0.5 in]
Mounting configuration	pcb mount	pcb or 0.085 in dia mounting hole	mounting tab
Termination style	0.020 in sq leads	0.020 in sq leads	28 AWG PVC insulated wire leads







Reflective Sensors	HOA1397	HOA1405	HOA2498
Package style	pc mount	pc/chassis mount	pc/chassis mount
Coupled current	0.7 mA	0.8 mA	0.16 mA
Forward current	20 mA	30 mA	30 mA
Optimum point of response	1,27 mm [0.05 in]	5,08 mm [0.2 in]	12,7 mm [0.5 in]
Mounting configuration	pcb mount	mounting tab	mounting tab
Termination style	0.020 in sq leads	0.020 in sq leads	0.018 dia leads

Low Light Rejection Phototransistors





	SDP8475-201	SDP8476-201
Package style	T-1	sidelooker
Angular response	20°	50°
Light current (min.)	4 mA	1 mA
Light current (max.)	14 mA	6 mA
Light current slope	4 mA/mW/cm² to 14 mA/mW/cm²	1 mA/mW/cm² to 6 mA/mW/cm²
Mounting configuration	through-hole	through-hole
Termination style	0.020 in sq leads	0.020 in sq leads

Transmissive Sensors









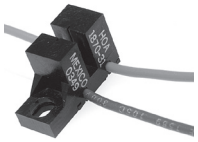
	HOA1877	HOA0825	HOA086X	HOA1879
Sensor aperture	1,52 mm [0.06 in] dia	1,52 mm [0.06 in] dia	1,52 mm x 1,27 mm [0.06 in x 0.05 in]	1,02 mm x 0,25 mm [0.04 in x 0.01 in]
Slot width	9,53 mm [0.375 in]	4,19 mm [0.165 in]	3,18 mm [0.125 in]	3,18 mm [0.125 in]
Rise/fall time (typ.)	15 ns	15 ns	15 ns	15 ns
Coupled current (Ic) min.	0.5 mA	0.5 mA	1 mA	0.5 mA
Collector-emitter breakdown voltage (min.)	30 V	30 V	30 V	30 V
Mounting configuration	mounting tabs	N, L, T, P mounting options	N, L, T, P mounting options	mounting tabs
Termination style	0.018 in diameter leads	0.020 sq leads	0.020 in sq leads	0.020 in sq leads

Infrared Sensors Line Guide

Transmissive Sensors







	HOA1882	HOA088X	HOA1870
Sensor aperture	1,52 mm [0.06 in] dia	1,52 mm x 0,25 mm [0.06 in x 0.01 in]	1,02 mm x 0,15 mm [0.04 in x 0.006 in]
Slot width	5,08 mm [0.20 in]	3,18 mm [1.25 in]	0,78 mm [0.07 in]
Rise/fall time (typ.)	15 ms	15 ns	15 ns
Coupled current (Ic) min.	1.8 mA	0.5 mA	0.3 mA
Collector-emitter breakdown voltage (min.)	30 V	30 V	30 V
Mounting configuration	pcb mount	N, L, T, P mounting options	mounting tab
Termination style	0.020 in sq leads	26 AWG UL 1429 wire leads	22 AWG UL 1007 wire leads

Optoschmitt Detectors











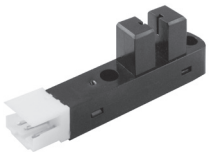


	SD5600	SD5610	SD5620	SD5630	SDP8600	SDP8610
Package style	TO-46 dome lensed	TO-46 dome lensed	TO-46 dome lensed	TO-46 dome lensed	Side-detecting	Side-detecting
Package components	metal	metal	metal	metal	plastic	plastic
Angular response	12°	12°	12°	12°	50°	50°
Turn-on threshold irradiance	2.5 mW/cm^2 max.	2.5 mW/cm^2 max.	0.25 mW/cm^2	0.25 mW/cm^2	2.5 mW/cm^2 max.	2.5 mW/cm^2 max.
Output logic	buffer	inverter	buffer	inverter	buffer	inverter
Supply voltage (range)	4.5 Vdc to 16 Vdc	4.5 Vdc to 16 Vdc	4.5 Vdc to 16 Vdc	4.5 Vdc to 16 Vdc	4.5 Vdc to 12 Vdc	4.5 Vdc to 12 Vdc
Mounting configuration	through-hole	through-hole	through-hole	through-hole	through-hole	through-hole
Termination style	0.018 in round leads	0.018 in round leads	0.018 in round leads	0.018 in round leads	0.020 in sq leads	0.020 in sq leads

Optoschmitt Sensors

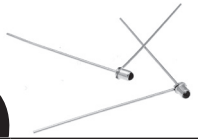




	HOA096X/HOA097X	HOA696X/HOA697X	HOA698X/HOA699X	HOA7720/HOA7730
Housing type (material)	transmissive/opaque	transmissive/opaque	transmissive/opaque	transmissive
Sensor aperture	1,52 mm x 0,25 mm [0.06 in x 0.01 in]; 1,52 mm x 1,27 mm [0.06 in x 0.05 in]	1,52 mm x 0,25 mm [0.06 in x 0.01 in]; 1,52 mm x 1,27 mm [0.06 in x 0.05 in]	1,52 mm x 0,25 mm [0.06 in x 0.01 in]; 1,52 mm x 1,27 mm [0.06 in x 0.05 in]	1,78 mm x 0,51 mm [0.07 in x 0.02 in]; 1,52 mm x 1,27 mm [0.06 in x 0.05 in]
Slot width	3,18 mm [0.125 in]	3,18 mm [0.125 in]	3,18 mm [0.125 in]	3 mm [0.118 in]
Output (type)	10 kOhm pull-up	open collector/totem-pole 10 kOhm pull-up	open collector/totem-pole 10 kOhm pull-up	totem-pole/open collector
Output logic	buffer/inverter	buffer/inverter	buffer/inverter	inverter
Supply voltage (range)	4.5 V to 10 V	4.5 V to 7 V	4.5 V to 12 V	4.5 V to 5.5 V
Rise/fall time	60 ns tr/15 ns tf	70 ns tr/70 ns tf	70 ns tr/70 ns tf	70 ns tr/70 ns tf
Propagation delay	5 µs	5 µs	5 µs	5 µs
Mounting configuration	N, L, T, P mounting options	N, L, T, P mounting options	N, L, T, P mounting options	mounting tabs
Termination style	0.020 in sq leads	0.020 in sq leads	26 AWG wire leads	integral 3-pin connector

Photodarlington Detectors





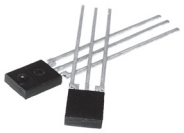



	SD1410(L)	SD2410	SD3410	SD5410	SDP8105	SDP8106
Package style	coaxial, leaded case	miniature pill	TO-46 flat window	TO-46 dome lensed	T1	side-detecting
Angular response	24°	48°	90°	12°	50°	50°
Light current minimum	0.6 mA	1 mA	0.6 mA	2 mA	0.5 mA	1 mA
Dark current	250 nA	250 nA	250 nA	250 nA	250 nA	250 nA
Rise/fall time	75 µs typ.	75 µs typ.	75 µs typ.	75 µs typ.	75 µs typ.	75 µs typ.
Mounting configuration	through-hole	through-hole	through-hole	through-hole	through-hole	through-hole
Termination style	0.018 in round leads	0.062 in hole	0.018 in round leads	0.018 in round leads	0.020 in sq leads	0.020 in sq leads

Infrared Sensors Line Guide

Photodiode Detectors







	SD2420	SD5421	SDP8276	SD1420(L)	SMD2420
Package style	miniature pill	TO-46, dome lensed	side-detecting	coaxial, leaded case	surface mount, glass lens
Angular response	48°	18°	50°	24°	28°
Light current minimum	7 μA	40 μA	4 μA	5 μA	6 μA
Reverse breakdown voltage	50 V	75 V	50 V	50 V	50 V
Rise/fall time	50 ns	15 ns	50 ns	50 ns	20 ns
Dark current	20 nA max.	20 nA max.	50 nA max.	5 nA max.	5 nA max.
Mounting configuration	through-hole	through-hole	through-hole	through-hole	SMT
Termination style	0.062 in hole	0.018 in round leads	0.020 sq leads	0.018 in round leads	SMT

Emitters - Metal Package






	SE1450(L)	SE1470(L)	SE2460	SE2470
Type	GaAs	AlGaAs	GaAs	AlGaAs
Package style	coaxial, lead case	coaxial, lead case	miniature pill	miniature pill
Beam angle	24°	24°	18°	18°
Power output	0.7 mW min.	1.1 mW/cm^2 to 4.5 mW/cm^2	1 mW min.	6 mW/sr min.
Output wavelength	935 nm	880 nm	935 nm	880 nm
Spectral bandwidth	50 nm	80 nm	50 nm	80 nm
Forward voltage	1.6 V	1.8 V	1.6 V	1.8 V
Mounting configuration	through-hole	through-hole	through-hole	through-hole
Termination style	0.018 in round leads	0.018 in round leads	0.062 in hole	0.062 in hole

Emitters - Metal Package






	SE3455	SE3470	SE5455	SE5470
Type	GaAs	AlGaAs	GaAs	AlGaAs
Package style	TO-46 flat window	TO-46 flat window	TO-46 dome lensed	TO-46 dome lensed
Beam angle	90°	90°	20°	20°
Power output	5.4 mW min.	10.5 mW min.	4.8 mW min.	2.6 mW/cm^2 min.
Output wavelength	935 nm	880 nm	935 nm	880 nm
Spectral bandwidth	50 nm	80 nm	50 nm	80 nm
Forward voltage	1.7 V	1.9 V	1.7 V	1.9 V
Mounting configuration	through-hole	through-hole	through-hole	through-hole
Termination style	0.018 in round leads	0.018 in round leads	0.018 in round leads	0.018 in round leads

Emitters - Plastic and Ceramic Package








	SEP8505	SEP8506	SEP8705	SEP8706	SEP8736	SME2470
Type	GaAs	GaAs	AlGaAs	AlGaAs	AlGaAs	AlGaAs
Package style	T1	side emitting	T1	side emitting	tight beam side looker	surface mount, glass lens
Beam angle	15°	50°	15°	50°	10°	24°
Power output	2 mW/cm^2 to 4 mW/cm^2	0.33 mW/cm^2 to 0.52 mW/cm^2	2.7 mW/cm^2 to 7.8 mW/cm^2	0.45 mW/cm^2 to 0.9 mW/cm^2	1.2 mW/cm^2 to 3 mW/cm^2	0.6 mW/cm^2 min.
Output wavelength	935 nm	935 nm	880 nm	880 nm	880 nm	880 nm
Spectral bandwidth	50 nm	50 nm	80 nm	80 nm	80 nm	80 nm
Forward voltage	1.5 V	1.5 V	1.7 V	1.7 V	1.7 V	1.5 V
Mounting configuration	through-hole	through-hole	through-hole	through-hole	through-hole	SMT
Termination style	0.018 in round leads	0.018 in round leads	0.020 in sq leads	0.020 in sq leads	0.020 in sq leads	SMT

Infrared Sensors Line Guide

Phototransistors - Metal Package







	SD1440(L)	SD2440	SD3443	SD5443	SD5491
Package style	coaxial, leaded case	miniature, pill	TO-46 flat window	TO-46 dome lensed	TO-18 dome lensed
Angular response	24°	48°	90°	18°	12°
Light current minimum	3 mA	7 mA	2 mA	8 mA	2 mA
Peak response	880 nm	880 nm	880 nm	880 nm	880 nm
Rise/fall time	15 μs typ.	15 μs typ.	15 μs typ.	15 μs typ.	2 μs typ.
Mounting configuration	through-hole	through-hole	through-hole	through-hole	through-hole
Termination style	0.018 in round leads	0.062 hole	0.018 in round leads	0.018 in round leads	0.018 in round leads

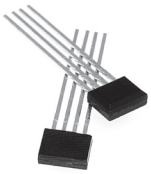
Phototransistors - Plastic and Ceramic Package

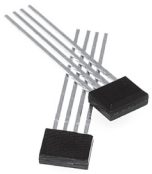





	SDP8405	SDP8406	SDP8436	SMD2440
Package style	T1	side detecting	tight beam sidelooker	ceramic surface mount, glass lens
Angular response	20°	50°	18°	28°
Light current minimum	12 mA	1.8 mA	7 mA	1.5 mA
Peak response	880 nm	880 nm	880 nm	880 nm
Rise/fall time	15 μs typ.	15 μs typ.	15 μs typ.	15 μs typ.
Mounting configuration	through-hole	through-hole	through-hole	SMT
Termination style	0.020 in sq leads	0.020 in sq leads	0.020 in sq leads	SMT

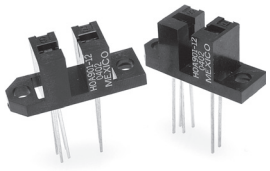
Encoder Detectors

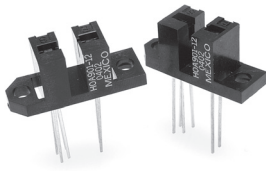




	HLC2701	HLC2705
Type	side-looking	side-looking
Output option	speed/direction (A-B output)	speed/direction (tach output)
Resolution	0,03 mm [0.009 in]	0,46 mm [0.018 in]
Package style (plastic)	pc mount	pc mount
Tach pulse width	–	3 μs to 20 μs
Tach pulse level, active	—	0.4 V
Output rise/fall time	100 ns	–
Supply voltage	4.5 V to 5.5 V	4.5 V to 5.5 V
Mounting configuration	through-hole	through-hole
Termination style	0.020 in sq leads	0.020 in sq leads

Transmissive Encoders





	HOA0901	HOA0902
Type	sensor	sensor
Output option	speed/direction (A-B output)	speed/direction (tach output)
Resolution	0,03 mm [0.009 in]	0,46 mm [0.018 in]
Package style (transmissive)	pc mount	pc mount
Tach pulse width	–	3 μs to 20 μs
Tach pulse level, active	–	0.4 V
Output rise/fall time	100 ns	–
Infrared emitter trigger current	<15 mA	<15 mA
Supply voltage	4.5 V to 5.5 V	4.5 V to 5.5 V
Mounting configuration	dual mounting tabs (-012 or no tab pcb mount) (-011)	dual mounting tabs (-012 or no tab pcb mount) (-011)
Termination style	0.020 in sq leads	0.020 in sq leads

contaminants in the optical path. Potential applications include presence and motion sensing, position encoding, limit sensing, movement detection, and counting.

HOA2498.

Features: Choice of phototransistor or photodarlington output • Focused for maximum response • Wide operating temperature -55 °C to 100 °C [-67 °F to 212 °F] • Metal-can packaged components

Benefits: An infrared emitter and phototransistor or photodarlington encased side-by-side on optical axes. Detector responds to radiation from infrared emitter only when a reflective object passes within its field of view. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

LOW LIGHT REJECTION PHOTOTRANSISTORS

SDP8475-201.

Features: T-1 plastic package • Low light level immunity • 20° (nominal) acceptance angle • Mechanically and spectrally matched to SEP8505 and SEP8705 infrared emitters

Benefits: Phototransistor with internal base-emitter shunt resistance. Transfer molding of this device provides enhanced optical centerline performance. Lead lengths are staggered to provide a simple method of polarity identification. Provides high contrast ratio in reflective applications where unwanted background reflection is a possibility. Potential applications include those which require ambient light rejection, or in transmissive applications where the interrupter media is semi-transparent to infrared energy.

SDP8476-201.

Features: Side-looking plastic package • Low light level immunity • 50° (nominal) acceptance angle • Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Benefits: Phototransistor with internal base-emitter shunt resistance. Transfer molding of this device provides enhanced optical centerline performance. Lead lengths are staggered to provide a simple method of polarity identification. Provides high contrast ratio in reflective applications where unwanted background reflection is a possibility. Potential applications include those which require ambient light rejection, or in transmissive applications where the interrupter media is semi-transparent to infrared energy.

TRANSMISSIVE SENSORS

HOA1877.

Features: Choice of phototransistor or photodarlington output • Wide operating temperature -55 °C to 100 °C [-67 °F to 212 °F] • 12,7 mm [0.5 in] high optical axis position • 9,52 mm [0.375 in] slot width • Metal can packaged components

Benefits: An infrared emitter facing a phototransistor or photodarlington. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector.

HOA0825.

Features: Phototransistor output • Four mounting configurations • 4,2 mm [0.165 in] slot • Plastic-molded components

Benefits: An infrared emitter facing a phototransistor or photodarlington. Slot in the housing between emitter and detector provides the means for mechanically interrupting the emitter beam. Phototransistor switching takes place when an opaque object passes through the slot between emitter and detector.

HOA086X.

Features: Phototransistor output • Often accurate position sensing • Four mounting configurations • 3,18 mm [0.125 in] slot width • Choice of opaque or IR transmissive housings • Options include mounting tab configurations, lead spacing, electro-optical characteristics, detector aperture size, and housing materials • Plastic-molded components

Benefits: An IR transmissive polysulfone housing features smooth optical faces without external aperture openings (desirable when aperture blockage from airborne contaminants is a possibility).

HOA1879.

Features: Phototransistor output • Often accurate position sensing • Choice of detector aperture • 3,18 mm [0.125 in] slot width • Dust protective housing • Plastic-molded components

Benefits: Infrared emitter facing a phototransistor. Switching takes place whenever an opaque object passes through the slot between emitter and detector. Employs an IR transmissive housing which features smooth optical faces without external aperture openings (desirable when aperture blockage from airborne contaminants is a possibility). Often ideal where maximum position resolution is desired.

HOA1882.

Features: Choice of phototransistor or photodarlington output • Compact package size • Dust protective housing • 5,08 mm [0.200 in] slot width • Plastic-molded components

Benefits: An infrared emitter facing a phototransistor or photodarlington. Detector switching takes place when an opaque object passes through the slot between emitter and detector. Employs an IR transmissive housing which features smooth optical faces without external aperture openings; desirable when aperture blockage from airborne contaminants is a possibility.

HOA088X.

Features: Phototransistor output • Four mounting configurations • Often accurate position sensing • 3,18 mm [0.125 in] slot width • 24 in [610 mm] min. 26 AWG UL 1429 leads • Opaque or IR transmissive housings • Options of mounting tab configurations, lead spacing, electro-optical characteristics, & detector aperture size

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

Benefits: An infrared emitter facing a phototransistor. Phototransistor switching takes place whenever an opaque object passes through the slot between emitter and detector. Employs a built-in strain relief for maximum wire attachment strength. Utilizes an IR transmissive polysulfone housing which features smooth optical faces without external aperture openings; desirable when aperture blockage from airborne contaminants is a possibility.

HOA1870.

Features: Choice of phototransistor or photodarlington output • Often accurate position sensing • 1,78 mm [0.07 in] slot width • 18 in [457 mm] min. 22 AWG UL 1007 wire leads • Plastic-molded components • Narrow dual 0.006 in wide apertures over emitter and detector provide sharp switch point/high resolution

Benefits: An infrared emitter facing a phototransistor or photodarlington. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. Lead wires provide alternate electrical connection when PC board mounting is not possible. Often ideal for use in potential applications in which maximum position resolution is desired.

OPTOSCHMITT DETECTORS

SD5600/SD5610.

Features: TO-46 metal-can package • 6° (nominal) acceptance angle • Enhanced noise immunity output • TTL/LSTTL/CMOS compatible • Buffer (SD5600) or inverting (SD5610) logic available • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Single chip Optoschmitt IC detectors mounted in a TO-46 metal-can package. Photodetector consists of a photodiode, amplifier, voltage regulator, Schmitt trigger, and an NPN output transistor with 10 kOhm (nominal) pull-up resistor. Output rise and fall times are independent of the rate of change of incident light. Detector sensitivity has been internally temperature compensated. Often suited for operating in hostile environments. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SD5620/SD5630.

Features: TO-46 metal-can package • 6° (nominal) acceptance angle • TTL/LSTTL/CMOS compatible • Enhanced noise immunity output • Buffer (SD5620) or inverting (SD5630) logic available • Two sensitivity ranges • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Single chip Optoschmitt IC detectors mounted in a TO-46 metal-can package. Photodetector consists of a photodiode, amplifier, voltage regulator, Schmitt trigger, and an NPN output transistor with 10 kOhm (nominal) pull-up resistor. Output rise and fall times are independent of the rate of change of incident light. Detector sensitivity has been internally temperature compensated. Often suited for operating in hostile environments. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SDP8600/SDP8610.

Features: Side-looking plastic package • 55° (nominal) acceptance angle • Wide sensitivity ranges • TTL/LSTTL/CMOS compatible • Buffer (SDP8600) or inverting (SDP8610) logic available • Three different lead spacing arrangements: inline, offset pin circle, and offset center lead • Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Benefits: Single chip Optoschmitt IC detectors molded in a side-looking black plastic package to minimize the effect of visible ambient light. Photodetector consists of a photodiode, amplifier, voltage regulator, Schmitt trigger, and an NPN output transistor with a 10 kOhm (nominal) pull-up resistor. Output rise and fall times are independent of the rate of change of incident light. Detector sensitivity has been internally temperature compensated. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

OPTOSCHMITT SENSORS (TRANSMISSIVE)

HOA096X/HOA097X.

Features: Direct TTL interface • Often accurate position sensing • Four mounting configurations • Buffer or inverting logic available • Choice of detector aperture, mounting tab configurations, and housing material • 0.125 in [3.18 mm] slot width • Plastic-molded components

Benefits: Infrared emitter facing an Optoschmitt detector. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. Photodetector consists of a photodiode, amplifier, voltage regulator, Schmitt trigger, and an NPN output transistor with 10 kOhm (nominal) pull-up resistor. HOA096X series utilizes an IR transmissive polysulfone housing which features smooth optical faces without external aperture openings; desirable when aperture blockage from airborne contaminants is a possibility. The HOA097X series employs an opaque polysulfone housing with aperture openings for use in potential applications where maximum rejection of ambient light is important and in situations in which maximum position resolution is desired. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

HOA696X/HOA697X.

Features: Direct TTL interface • Buffer or inverting logic available • Three device output options • Four mounting configurations • Choice of detector aperture, mounting tab configurations,

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

detector output configuration, and housing material • 0.125 in [3.18 mm] slot width • Plastic-molded components

Benefits: Infrared emitter facing an Optoschmitt detector. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. Photodetector consists of a photodiode, amplifier, voltage regulator, Schmitt trigger and various output configurations. HOA696X series utilizes an IR transmissive polysulfone housing which features smooth optical faces without external aperture openings; desirable when aperture blockage from airborne contaminants is a possibility. The HOA697X series employs an opaque polysulfone housing with aperture openings for use in potential applications where maximum rejection of ambient light is important and in situations in which maximum position resolution is desired. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

HOA698X/HOA699X.

Features: Direct TTL interface • Buffer or inverting logic available • Three device output options • Four mounting configurations • Choice of detector aperture, mounting tab configurations, detector output configuration, and housing material • 0.125 in [3.18 mm] slot width • 610 mm [24 in] min. 26 AWG UL 1429 wire leads • Plastic-molded components

Benefits: Infrared emitter facing an Optoschmitt detector. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. Photodetector consists of a photodiode, amplifier, voltage regulator, Schmitt trigger, and various output configurations. HOA698X series utilizes an IR transmissive polysulfone housing which features smooth optical faces without external aperture openings; desirable when aperture blockage from airborne contaminants is a possibility. The HOA699X series employs an opaque polysulfone housing with aperture openings for use in potential applications where maximum rejection of ambient light is important and in situations in which maximum position resolution is desired. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

HOA7720/7730.

Features: Direct TTL interface • Infrared emitter internally biased • No interface circuits required • Inverting logic • Two device output options: totem-pole or open collector • Enhanced resolution • 3,00 mm [0.118 in] slot width • Plastic-molded components

Benefits: Infrared emitter facing an Optoschmitt detector. Detector switching takes place whenever an opaque object passes through the slot between emitter and detector. Photodetector consists of a photodiode, amplifier, voltage regulator, and Schmitt trigger with two configurations. Totem-pole output is suited for potential applications which require fast transition times. Open collector allows the output of the sensor to interface with circuit elements driven by supply voltages other than the Vcc supply. Narrow aperture is often ideal for use in potential applications in which maximum rejection of ambient light is important, and maximim position resolution is desired. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

PHOTODARLINGTONS

SD1410(L)

Features: Compact metal-can coaxial package • 24° (nominal) acceptance angle • Higher typical output currents • Wide sensitivity ranges • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Mechanically and spectrally matched to SE1450 and SE1470 infrared emitters

Benefits: Photodarlington mounted in a glass-lensed metal-can coaxial package. May have a tab or second lead welded to the can as an optional feature. Both leads are flexible and may be formed to fit various mounting configurations. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SD2410.

Features: Miniature, hermetically sealed, pill style, metal-can package • 48° (nominal) acceptance angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for direct mounting to printed circuit boards • Wide sensitivity ranges • Mechanically and spectrally matched to SE2460 and SE2470 infrared emitters

Benefits: Photodarlington mounted in a hermetically sealed glass lensed metal-can package. Directly mounts in double-sided PC boards. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SD3410.

Features: TO-46 metal-can package • Flat window • 90° acceptance angle option • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Wide sensitivity ranges • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Photodarlington mounted in a TO-46 metal-can package. Flat window-can provides a wide acceptance angle. Often ideally suited for operation in hostile environments. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

SD5410.

Features: TO-46 metal-can package • Flat window • 12° acceptance angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Wide sensitivity ranges • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Photodarlington mounted in a TO-46 metal-can package. Glass-lensed can provides a narrow acceptance angle. Often ideally suited for operation in hostile environments. Applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SDP8105.

Features: T-1 plastic package • 20° (nominal) acceptance angle • Consistent optical properties • Mechanically and spectrally matched to SEP8505 and SEP8705 infrared emitters

Benefits: Photodarlington transfer molded in a T-1 package to minimize effect of visible ambient light. Transfer molding of this device provides enhanced optical centerline performance. Lead lengths are staggered to provide a simple method of polarity identification. Potential applications include presence and motion sensing, position encoding, limit sensing, movement detection, and counting.

SDP8106.

Features: Side-looking plastic package • 50° (nominal) acceptance angle • Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Benefits: Photodarlington molded in a side-looking black plastic package to minimize effect of visible ambient light. Chip is positioned to accept radiation through a plastic lens from the side of the package. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

PHOTODIODE DETECTORS

SD2420.

Features: Miniature, hermetically sealed, pill-style, metal-can package • 48° (nominal) acceptance angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for direct mounting to printed circuit boards • Mechanically and spectrally matched to SE2460 and SE2470 infrared emitters

Benefits: Photodiode mounted in a hermetically sealed, glass-lensed, metal-can package. Directly mounts in double-sided PC boards. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SD5421

Features: TO-46 metal-can package • Dome lensed package • 18° (nominal) acceptance angle option • Enhanced response time • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Photodiode mounted in a TO-46 metal-can package. Employs glass-lensed cans to provide a narrow acceptance angle. Often ideally suited for operation in hostile environments. Potential applications include presence and motion sensing, position encoding, limit sensing, movement detection, and counting.

SDP8276.

Features: Side-looking plastic package • Linear response • Enhanced response time • Internal visible light rejection filter • 50° (nominal) acceptance angle • Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Benefits: Photodiode, transfer molded in a side-looking black plastic package to minimize the effects of visible ambient light. Positioned to accept radiant energy through a lens on the side of the package. Often ideal for battery-powered systems or anywhere power is at a premium. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SD1420(L).

Features: Compact metal-can coaxial package • 24° (nominal) beam angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Mechanically and spectrally matched to SD1420 photodiode, SD1440 phototransistor, and SD1410 photodarlington

Benefits: May have a tab or second lead welded to the can as an optional feature. Leads are flexible to fit various mounting configurations. Potential applications include presence sensing, motion sensing, position encoding, limit sensing, movement detection, and counting.

SMD2420.

Features: Small ceramic packages • Glass-lensed optics for efficient optical coupling • Upright or inverted mounting capability • Low profile, small size for flexible layout of multiple channels and custom arrays • Compatible with automated solder processes • Choice of photodiode or phototransistor detectors • Infrared emitter features high power dissipation capability • Tape and reel packaging option (pick/place machine compatible)

Benefits: Lens minimizes cross-talk and often eliminates the need for apertures in non-critical applications. May be mounted on the printed circuit board, lens up or inverted, allowing flexibility in layouts for multiple channel and custom arrays. Often useful in potential applications requiring linear response or high switching speed. Potential applications include optical encoders for motion control, computer peripherals, vending and point-of-sale applications, smoke detectors, and medical equipment.

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

EMITTERS (METAL PACKAGE)

SE1450(L).

Features: Compact, metal-can coaxial package • 24° (nominal) beam angle • 935 nm wavelength • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Mechanically and spectrally matched to SD1420 photodiode, SD1440 phototransistor, and SD1410 photodarlington

Benefits: Infrared emitter mounted in a glass-lensed, metal-can coaxial package. May have a tab or second lead welded to the can as an optional feature. Leads are flexible and may be formed as required to fit various mounting configurations.

SE1470(L).

Features: Compact metal-can coaxial package • 24° (nominal) beam angle 880 nm wavelength • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Mechanically and spectrally matched to SD1420 photodiode, SD1440 phototransistor, and SD1410 photodarlington

Benefits: High intensity infrared emitter mounted in a glass-lensed metal-can coaxial package. May have a tab or second lead welded to the can as an optional feature. Leads are flexible to fit various mounting configurations. Exhibits 70 % greater power intensity than GaAs devices at the same forward current.

SE2460.

Features: Miniature, hermetically sealed, pill-style, metal-can package • 48° (nominal) acceptance angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for direct mounting to printed circuit boards • Mechanically and spectrally matched to SE2460 and SE2470 infrared emitters

Benefits: Photodiode mounted in a hermetically sealed, glass-lensed, metal-can package. Directly mounts in double-sided PC boards.

SE2470.

Features: Miniature, hermetically sealed, pill style, metal-can package • 18° (nominal) beam angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for direct mounting to printed circuit boards • 880 nm wavelength • Mechanically and spectrally matched to SD2420 photodiode, SD2440 phototransistor, and SD2410 photodarlington

Benefits: High intensity infrared emitter mounted in a hermetically sealed, glass-lensed, metal-can package. Directly mounts in double-sided PC boards. Exhibits 70 % greater power intensity than GaAs devices at the same forward current.

SE3455.

Features:TO-46 metal-can package • Flat window • 90° beam angle • 935 nm wavelength • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for high pulsed current applications • Mechanically and spectrally matched to SD3421/5421 photodiode, SD3443/5443/5491 phototransistor, SD3410/5410 photodarlington, and SD5600 series Schmitt trigger

Benefits: Infrared emitter mounted in a TO-46 metal-can package. Flat window-can provides a wide beam angle. Constructed with dual bond wires suitable for pulsed current applications. Offers high power dissipation capability. Often suited for operation in hostile environments.

SE3470.

Features:TO-46 metal-can package • Flat window • 90° beam angle option • 880 nm wavelength • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for high pulsed current applications • Mechanically and spectrally matched to SD3421/5421 photodiode, SD3443/5443/5491 phototransistor, SD3410/5410 photodarlington, and SD5600 series Schmitt trigger

Benefits: Infrared emitter mounted in a TO-46 metal-can package. Glass-lensed cans provide a narrow beam angle. Exhibits 70% greater power output than GaAs devices at the same forward current. Offers high power dissipation capability and are often ideally suited for operation in hostile environments.

SE5455.

Features: TO-46 metal-can package • Domed lens • 20° beam angle • 935 nm wavelength • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for high pulsed current applications • Mechanically and spectrally matched to SD3421/5421 photodiode, SD3443/5443/5491 phototransistor, SD3410/5410 photodarlington, and SD5600 series Schmitt trigger

Benefits: Infrared emitter mounted in a TO-46 metal-can package. Glass-lensed can provides a narrow beam angle. Constructed with dual bond wires suitable for pulsed current applications. Offers high power dissipation capability. Often suited for operation in hostile environments.

SE5470.

Features: TO-46 metal-can package • Domed lens • 20° beam angle • 880 nm wavelength • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for high pulsed current applications • Mechanically and spectrally matched to SD3421/5421 photodiode, SD3443/5443/5491 phototransistor, SD3410/5410 photodarlington, and SD5600 series Schmitt trigger

Benefits: Infrared emitter mounted in a TO-46 metal-can package. Glass-lensed can provides a narrow beam angle. Exhibits 70 % greater power output than GaAs devices at the same forward current. Offers high power dissipation capability and are often ideally suited for operation in hostile environments.

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

EMITTERS (PLASTIC AND CERAMIC PACKAGE)

SEP8505.

Features: T-1 package • 15° (nominal) beam angle • 935 nm wavelength • Consistent on-axis optical properties • Mechanically and spectrally matched to SDP8405 phototransistor and SDP8105 photodarlington

Benefits: Infrared emitter transfer molded in a T-1 red plastic package. Transfer molding of this device provides enhanced optical centerline performance compared to other molding processes. Lead lengths are staggered to provide a simple method of polarity identification.

SEP8506.

Features: Side-emitting plastic package • 50° (nominal) beam angle • 935 nm wavelength • Mechanically and spectrally matched to SDP8406 phototransistor, SDP8106 photodarlington, and SDP8000/8600 series Schmitt trigger

Benefits: Infrared emitter molded in a side-emitting red plastic package. Chip positioned to emit radiation through a plastic lens from the side of the package.

SEP8705.

Features: T-1 package • 15° (nominal) beam angle • 880 nm wavelength • Consistent optical properties • Mechanically and spectrally matched to SDP8405 phototransistor and SDP8105 photodarlington

Benefits: Infrared emitter transfer molded in a T-1 smoke gray plastic package. Transfer molding of this device assures superior optical centerline performance compared to other molding processes. Exhibit 70% greater power intensity compared to GaAs devices at the same forward current. Lead lengths are staggered to provide a simple method of polarity identification.

SEP8706.

Features: Side-looking plastic package • 50° (nominal) beam angle • 880 nm wavelength • Mechanically and spectrally matched to SDP8406 phototransistor, SDP8106 photodarlington, and SDP8000/8600 series Schmitt trigger

Benefits: Infrared emitter molded in a side-emitting, smoke-gray plastic package. Chip positioned to emit radiation through a plastic lens from the side of the package. Exhibits 70 % greater power intensity than GaAs devices at the same forward current.

SEP8736.

Features: Side-emitting, tight-beam sidelooker in a plastic package • 10° (nominal) beam angle • 880 nm wavelength • Enhanced coupling distance • Mechanically and spectrally matched to SDP8436 phototransistor

Benefits: Infrared emitter molded in a side-emitting smoke-gray plastic package. Body and integral lens design combines the mounting advantage of a side-emitting package with the narrow emission pattern of a T-1 style device. Designed for potential applications which require longer coupling distances than standard side-emitting devices can provide, such as touch screens. Infrared emitters are often well suited to potential applications in which adjacent channel crosstalk could be a problem.

SME2470.

Features: Small ceramic package • Glass-lensed optics for efficient optical coupling • Upright or inverted mounting capability • Low profile, small size for flexible layout of multiple channels and custom arrays • Compatible with automated solder processes • Choice of photodiode or phototransistor detectors • Infrared emitter features high power dissipation capability • Tape and reel packaging option (pick and place machine compatible)

Benefits: Lens minimizes cross-talk and often eliminates the need for apertures in non-critical applications. Low profile components may be mounted on the printed circuit board, lens up or inverted, allowing flexibility in layouts for multiple channel and custom arrays. High intensity infrared emitter can be used with either the SMD2440 phototransistor or the SMD2420 photodiode. Small size and high power dissipation properties of the infrared emitter promote PC board miniaturization and high density placement. Potential applications include optical encoders for motion control, computer peripherals, vending and point-of-sale applications, smoke detectors, and medical equipment.

PHOTOTRANSISTORS - METAL PACKAGE

SD1440(L).

Features: Compact, metal-can coaxial package • 24° (nominal) acceptance angle • Wide sensitivity ranges • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Mechanically and spectrally matched to SE1450 and SE1470 infrared emitters

Benefits: Phototransistor mounted in a glass-lensed, metal-can coaxial package. May have a tab or second lead welded to the can as an optional feature. Both leads are flexible and may be formed to fit various mounting configurations.

SD2440.

Features: Miniature, hermetically sealed, pill-style, metal-can package • 48° (nominal) acceptance angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Often ideal for direct mounting to double sided printed circuit boards • Wide sensitivity ranges • Mechanically and spectrally matched to SE2460 and SE2470 infrared emitters

Benefits: Phototransistor mounted in a hermetically sealed glass- lensed metal-can package.

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

SD3443.

Features:TO-46 metal-can package • Flat window • 90° acceptance angle option • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • External base connection for added control • Enhanced sensitivity • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Phototransistor. Flat window provides wide acceptance angle. Often ideally suited for operation in hostile environments.

SD5443.

Features: TO-46 metal-can package • Lensed package • 18° (nominal) acceptance angle option • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • External base connection for added control • Enhanced sensitivity • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Phototransistor. Glass-lensed can provides a narrow acceptance angle. Often ideally suited for operation in hostile environments.

SD5491.

Features: TO-18 metal-can package • 12° (nominal) acceptance angle • Wide operating temperature range -55 °C to 125 °C [-67 °F to 257 °F] • Enhanced response time • Wide sensitivity ranges • External base connection for added control • Mechanically and spectrally matched to SE3450/5450, SE3455/5455, and SE3470/5470 infrared emitters

Benefits: Phototransistor. Biconvex lens provides high optical sensitivity with a narrow acceptance angle to enable maximum radiation coupling. Often offers protection against harsh environments, as well as enhanced thermal characteristics.

PHOTOTRANSISTORS - PLASTIC AND CERAMIC PACKAGE

SDP8405.

Features: T-1 plastic package • 20° (nominal) acceptance angle • Consistent optical properties • Wide sensitivity ranges • Mechanically and spectrally matched to SEP8505 and SEP8705 infrared emitters

Benefits: Phototransistor. Transfer molding provides enhanced optical centerline performance compared to other molding processes. Lead lengths are staggered to provide a simple method of polarity identification.

SDP8406.

Features: Side-looking plastic package • 50° (nominal) acceptance angle • Wide sensitivity ranges • Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Benefits: Phototransistor molded in a side-looking clear plastic package. Chip positioned to accept radiation through a plastic lens from the side of the package.

SDP8436.

Features: Side-detecting, tight-beam sidelooker in a plastic package • 18° (nominal) acceptance angle • Enhanced coupling distance • Internal visible light rejection filter • Low profile for design flexibility • Wide sensitivity ranges • Mechanically matched to SEP8736 infrared emitters

Benefits: Phototransistor molded in a black plastic package which combines the mounting advantages of a side-looking package with the narrow acceptance angle and high optical gain of a T-1 package. Designed for potential applications with longer coupling distances than standard side-looking devices, such as touch screens. Often suited to potential applications in which adjacent channel cross-talk could be a problem. Package is highly transmissive to the IR source energy while effectively shielding against visible ambient light.

SMD2440.

Features: Small ceramic package size • Glass-lensed optics for efficient optical coupling • Upright or inverted mounting capability • Low profile, small size for flexible layout of multiple channels and custom arrays • Compatible with automated solder processes • Choice of photodiode or phototransistor detectors • Infrared emitter features high power dissipation capability • Tape and reel packaging option (pick and place machine compatible)

Benefits: Lens minimizes cross-talk and often eliminates the need for apertures in non-critical applications. Low profile components may be mounted on the printed circuit board, lens up or inverted, allowing flexibility in layouts for multiple channel and custom arrays. Phototransistor's gain characteristics often make it useful for potential applications requiring high responsivity. Potential applications include optical encoders for motion control, computer peripherals, vending and point-of-sale applications, smoke detectors, and medical equipment.

ENCODER DETECTORS

HLC2701.

Features: Side-looking plastic package • TTL/LSTTL/CMOS compatible • Senses speed and direction of mechanical motion • Inverting logic output • Linear or rotary encoder applications • Resolution to 0,229 mm [0.009 in] • Sensitivity versus temperature compensation • Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Benefits: Monolithic IC, consisting of two narrow adjacent photodiodes, amplifiers, and Schmitt trigger output stages. Outputs are NPN collectors with internal 10 kOhm (nominal) pull-up resistors to Vcc which can directly drive TTL loads. Circuitry compensates the sensitivity for the output power versus temperature characteristics of an infrared emitter. IC is encapsulated in a molded, unlensed black

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

plastic package which is transmissive to IR energy, yet provides shielding from visible light. Often suited for the encoding function in an optical mouse. Potential applications include rotary and linear encoders.

HLC2705.

Features: Side-looking plastic package • Senses speed and direction of mechanical motion • TTL/LSTTL/CMOS compatible • On-chip quadrature logic which provides tach and direction outputs • Linear or rotary encoder applications • Resolution to 0,457 mm [0.018 in] • Sensitivity versus temperature compensation • Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitters

Benefits: Monolithic IC, consisting of two narrow adjacent photodiodes, amplifier stages, and quadrature logic which provides two outputs: one fixed duration and a direction output. Sensitivity compensation circuity for the output power versus temperature characteristic of an infrared emitter. IC is encapsulated in a molded, unlensed black plastic package which is transmissive to IR energy, yet provides shielding from visible light. Direction output is a totem-pole configuration. Often suited for the encoding function in an optical mouse. Potential applications include rotary and linear encoders.

TRANSMISSIVE ENCODERS

HOA0901.

Features: Dual channel IC detector and infrared emitter encased in black thermoplastic housing • Direct TTL interface • Inverting logic output • Resolution to 0,229 mm [0.009 in] • Internal temperature compensation • 3,2 mm [0.126 in] slot width • Two mounting configurations and housing styles available

Benefits: Detector generates two output signals which can be processed to provide speed and direction information. Monolithic IC which consists of two narrow adjacent photodiodes, amplifiers, and Schmitt trigger output stages. Outputs are NPN collectors with internal 10 kOhm (nominal) pull-up resistors to Vcc which are capable of directly driving TTL loads. Incorporates circuitry to compensate the sensitivity for the output power vs. temperature characteristic of the infrared emitter. Used with an interrupter strip or disk (code wheel) to encode the rate and direction of mechanical motion. Potential applications include linear and rotary encoders; it is often suited for the encoding function in an optical mouse.

HOA0902.

Features: Dual channel IC and infrared emitter encased in black thermoplastic housing • Direct TTL interface • Resolution to 0.457 mm [0.018 in] • Internal temperature compensation • 3.2 mm [0.126 in] slot width • Two mounting configurations

Benefits: Monolithic IC which consists of two narrow adjacent photodiodes, amplifiers stages, and quadrature logic circuitry which provides two outputs: a fixed-duration and a direction output. Tachometer output is an NPN collector which is internally connected to Vcc through a 10 kOhm (nominal) resistor; the direction output is a totem-pole configuration. Incorporates circuitry to compensate the sensitivity for the output power vs. temperature characteristic of the infrared emitter. Used with an interrupter strip or disk (code wheel) to encode the rate and direction of mechanical motion. Potential applications include linear and rotary encoders; it is often suited for the encoding function in an optical mouse.

Unless otherwise noted, potential applications include printers and copiers, motion control systems, metering systems, liquid-level sensing, data storage systems, scanning, automated transaction, drop sensors, and other noninvasive medical equipment.

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