

Optoelektronik

Bauelemente

TT Electronics

OPTEK Technologies

TT electronics OPTEK Technologie ist ein innovativer Anbieter in der Optoelektronik und Sensorik Bauelemente.

Seit über 40 Jahren bietet OPTEK optoelektronische Produkte für unterschiedlichste Industrieanwendungen an. Die Partnerschaft zwischen Neumüller und OPTEK besteht seit weit über 30 Jahren. Bekannt ist OPTEK für hochentwickelte, anwendungsspezifische Sensorlösungen für verschiedenste Anwendungsbereiche. Das Produktportfolio umfasst neben standard- und spezifischen optoelektronischen Sensoren sowie transmissive und reflektive Lichtschranken, magnetische Sensoren (Hall-Effekt), LWL-Komponenten und VCSELs. OPTEK Produkte finden sich in vielfältigen Produktbranchen, ob Industrieanwendungen, Medizintechnik, Luft- und Raumfahrt, Avionik und Verteidigung.

OPTEK produziert auch Produkte nach den US-amerikanischen technischen Militärnormen MIL-PRF-19500, MIL-PRF-38535 und MIL-STD-750/883.

Zertifizierungen: ISO 9001:2008 und ISO/TS 16949:2009



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Anwendungsfelder



Raumfahrt



Medizintechnik



Automatisierung



Industrie



Messtechnik



Regenerative Energien



Luftfahrt



Positionierung



Bahntechnik



Marine-Anwendungen



Automotive



Sensorik

Neumüller Elektronik GmbH

Unverzichtbare Merkmale

Als traditionsreiches und inhabergeführtes Unternehmen handeln wir stets nach den Merkmalen Verlässlichkeit und Verbindlichkeit, Aufrichtigkeit und Transparenz sowie Flexibilität und Verschwiegenheit. Kundenzufriedenheit, Vertrauen und wirtschaftliche Mehrwerte sind für uns die Basis erfolgreicher Zusammenarbeit.

Verlässliche und starke Partnerschaften

Wir arbeiten ausschließlich mit renommierten und führenden Herstellern und Lieferanten zusammen. Mehr als 60 Jahre erfolgreich am Markt, schaffen Vertrauen und Beständigkeit. Ihren Anspruch an Produktqualität und Verfügbarkeit setzen wir um.

Gesicherte Prozesse und lückenlose Qualität

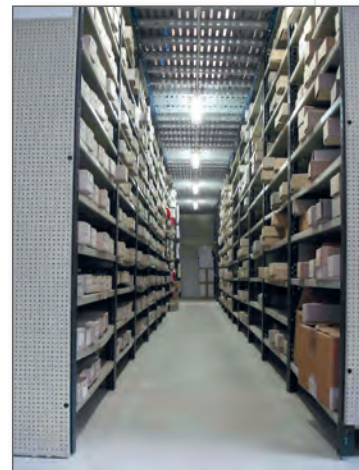
Die Zertifizierung gemäß DIN EN ISO 9001:2008 belegt die einheitliche Darstellung unserer Prozesse. Bei uns sind standort- und abteilungsübergreifend sämtliche Abläufe und Arbeitsschritte dokumentiert. Für Sie, als unseren Kunden, bedeutet das maximale Sicherheit und Transparenz in der gesamten Prozesskette.

Hohe Beratungs- und Lösungskompetenz

Das Vertrauen unserer Kunden bestätigen wir durch das Erfüllen und Übertreffen der an uns gestellten Erwartungen. Unsere Kompetenzen in der individuellen Beratung und die zielgerichteten Lösungen spiegeln sich in passgenauen Produkten wieder. Überzeugen Sie sich selbst.

Branchenwissen von A bis Z

Neben unserem spezialisierten Produktportfolio zeichnen uns auch tiefe Branchenkenntnisse aus. Dieses Know-how setzen wir zur optimalen Produktbetreuung ein. Von A wie Antriebstechnik bis Z wie zentralgesteuerte Gebäudebeleuchtung können Sie sich auf unser umfangreiches Fachwissen verlassen. Unsere Experten sehen über jeden Tellerrand und bieten Ihnen im Rahmen Ihrer Projektumsetzung auch alternative Lösungsansätze.



ESD-konforme Lagerung

SOLUTION
PARTNER



Zentrale in Weisendorf
bei Nürnberg



Niederlassung Nord in
Ahrensburg bei Hamburg

Hermetic IR LED TO-46 | PILL

Part No.	OP124	OP132	OP133W	OP224	OP232	OP232W	OP233	OP233W
Package	Pill	TO-46	TO-46	Pill	TO-46	TO-46	TO-46	TO-46
Lense shape	Dome Lens	Dome Lens	Flat Window	Dome Lens	Dome Lens	Flat Window	Dome Lens	Flat Window
Wavelength [nm]	935	935	935	890	890	890	890	890
Output power [mW/cm ²]	min. 1,00	min. 4,00	min. 5,00	min. 3,50	min. 2,00 max. 6,00	min. 3,50 max. 7,00	min. 3,00	min. 5,00
I _F [mA]	max. 100	max. 100	max. 100	max. 100	max. 100	max. 100	max. 100	max. 100
Viewing Angle [°]	24	18	50	24	18	50	18	50
Operating Temperature [°C]	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125

IR LED Plastic housing

Part No.	OP140A	OP166A	OP240A	OP240B	OP245A	OP265FAB	OP266W	OP291A
Package	Sidelooker	TO-1 3mm	Sidelooker	Sidelooker	Sidelooker	TO-1 3mm	TO-1 3mm	TO-1¾ 5mm
Lense shape	1,52 mm Socket	Dome Lense	1,52 mm Socket	1,52 mm Socket	2,54 mm Socket	Dome Lense	Flat Lense	Dome Lense
Wavelength [nm]	935	935	890	890	890	850	890	890
Output Power [mW/cm ²]	min. 0,40	min. 1,95	min. 0,60	min. 0,40 max. 1,20	min. 0,60	min. 7,50 max. 12,50	min. 1,00	min. 16,00
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 50 max. 100
Viewing Angle [°]	40	18	40	40	40	18	90	50
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100

SMD LED

Part No.	Package	Wavelength [nm]	Output Power	V _f max. [V]	I _f [mA]	Viewing Angle [°]	Operating Temperature [°C]
OP234W	TO-46	850	min. 5,00	min. 6,00	typ. 20 max. 50	10	min. -40 max. +85
OP235W	TO-46	850	min. 5,00	min. 6,00	typ. 20 max. 50	10	min. -40 max. +85
OP181	SMD	940	min. 0,26 mW/cm ²	1,65	typ. 20 max. 50	10	min. -40 max. +85
OPR2800T	SMD	880	min. 0,20 mW/cm ²	1,50	typ. 20 max. 50	100	min. -40 max. +100
OPR5200	1208 Flat Lens	890	min. 0,35 mW/cm ²	1,80	typ. 20 max. 50	90	min. -55 max. +125
OPR2800V	Flat Lens Window	850	min. 1,50 mW	-	typ. 7,0 max. 2,0	24	min. 0 max. +85

VCSEL

Sensing | Fiber Optic

Part No.	Package	Wavelength [nm]	Output Power [mW]	V _f max. [V]	I _f [mA]	Viewing Angle [°]	t _r t _r typ. [ps]	Laser class	Operating Temperature [°C]
OP295A	TO-1 ³ / ₄ 5mm	890	min. 44,00	2,20	typ. 7,0 max. 12,0	24	110 110	1M	min. -40 max. +100
OP298A	TO-18	875	min. 3,00	2,20	typ. 7,0 max. 12,0	24	110 110	1M	min. -40 max. +100
OPV310Y	TO-46 Flat Window	850	min. 1,50	2,20	typ. 7,0 max. 12,0	24	110 110	1M	min. 0 max. +70
OPV314	TO-46 Bead Lens	850	min. 1,40	2,20	typ. 7,0 max. 12,0	-	110 110	1M	min. 0 max. +70
OPV322	Dome Lens Pill Package	850	min. 1,50	2,20	typ. 7,0 max. 12,0	6	110 110	3B	min. 0 max. +85
OPV332	T-1 Dome Lense	850	min. 1,50	2,20	typ. 7,0 max. 12,0	4	110 110	3B	min. 0 max. +85
OPV380	Flat Lens Lateral Package	850	min. 1,50	2,20	typ. 7,0 max. 12,0	20	110 110	1M	min. 0 max. +85
OPV382	Dome Lens Lateral Package	850	min. 1,50	2,20	typ. 7,0 max. 12,0	6	110 110	3B	min. 0 max. +85

NPN Silicon Phototransistors
Plastic housing

Part No.	OP505A	OP506A	OP506B	OP550A	OP593A	OP598A
Package	TO-18 3mm	TO-18 3mm	TO-18 3mm	Sidelooker	TO-18 Plastic	TO-18 Plastic
$I_{C(ON)}$ [mA]	min. 4,30 @Ee=5mW/cm ²	min. 4,30 @Ee=5mW/cm ²	min. 2,15 max. 5,95 @Ee=5mW/cm ²	min. 2,55 @Ee=1,0mW/cm ²	min. 3,00 max. 4,00 @Ee=1,7mW/cm ²	min. 7,50 max. 10,00 @Ee=1,7mW/cm ²
V_{CE} max. [V]	30	30	30	30	30	30
Viewing Angle [°]	25	25	25	60	130	25
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100

Hermetische NPN Silicon Phototransistors
TO18 | TO46

Part No.	OP800A	OP802WSL	OP803SL	OP805SL
Package	TO-18 Dome Lens	TO-46 Flat Window	TO-18 Dome Lens	TO-18 Dome Lens
$I_{C(ON)}$ [mA]	min. 3,60 @Ee=5mW/cm ²	min. 2,50 max. 3,00 @Ee=5mW/cm ²	min. 4,00 max. 8,00 @Ee=5mW/cm ²	min. 15,00 @Ee=5mW/cm ²
V_{CE} max. [V]	30	30	30	30
Viewing Angle [°]	25	75	25	25
Operating Temperature [°C]	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125

SMD NPN Silicon Phototransistors

Part No.	OP580DA	OPR5500
Package	PLCC-2	1208 Flat Lens
$I_{C(ON)}$ [mA]	min. 10,00 @Ee=0,15mW/cm ²	min. 0,036 @Ee=0,15mW/cm ²
V_{CE} max. [V]	35	30
Viewing Angle [°]	100	120
Active Area [mm ²]	0,73	0,73
Operating Temperature [°C]	min. -25 max. +85	min. -25 max. +125

NPN Silicon Photodarlington

Part No.	OP535A	OP535B	OP535C	OP830SL	OP830WSL
Package	TO-18 3mm	TO-18 3mm	TO-18 3mm	TO-18 Dome Lens	TO-46 Flat Window
$I_{C(ON)}$	min. 10,50 max. 32,00 @Ee=0,13mW/cm ²	min. 3,50 max. 32,00 @Ee=0,13mW/cm ²	min. 1,50 max. 32,00 @Ee=0,13mW/cm ²	min. 15,00 @Ee=0,5mW/cm ²	min. 4,00 @Ee=0,5mW/cm ²
V_{CE} max. [V]	30	30	30	15	15
Viewing Angle [°]	25	25	25	25	75
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -65 max. +125	min. -65 max. +125

R_{BE} Photodetector

Part No.	OP705A	OP705B	OP705C	OP705D
Package	TO-1 3mm	TO-1 3mm	TO-1 3mm	TO-1 3mm
I _{C(ON)}	min. 3,95 max. 12,00 @Ee=5mW/cm ²	min. 2,65 max. 7,25 @Ee=5mW/cm ²	min. 1,50 max. 4,85 @Ee=5mW/cm ²	min. 1,50 max. 12,00 @Ee=5mW/cm ²
V _{CE} max. [V]	30	30	30	30
Viewing Angle [°]	25	25	25	25
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100

Photologic® Detector

Part No.	OPL530	OPL550	OPL550A	OPL550-OC	OPL550-OCA
Package	Sidelooker 1,52mm Base	Sidelooker 1,52mm Base	Sidelooker 1,52mm Base	Sidelooker 1,52mm Base	Sidelooker 1,52mm Base
Photologic	10K Pull up	Totem-Pole	Totem-Pole	Open Collector	Open Collector
E _e [mW/cm ²]	min. 0,12 max. 0,38	min. 0,25 max. 2,40	min. 0,25 max. 2,40	min. 0,25 max. 2,40	min. 0,25 max. 2,40
V _{CC} [V]	min. 4,5 max. 16,0	min. 4,5 max. 5,5	min. 4,5 max. 5,5	min. 4,5 max. 5,5	min. 4,5 max. 5,5
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85

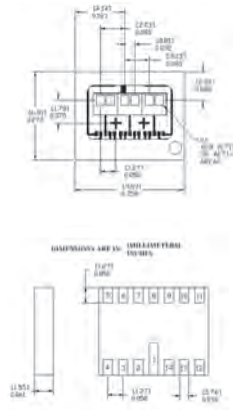
Photodiode Sensor

Part No.	OP905	OP906	OP913SL	OP913WSL	OP950	OP980
Package	TO-1 3mm	TO-1 3mm	TO-5	TO-5	Sidelooker 1,52mm	PLCC-2
I _{C(ON)} [µA]	min. 14,0 max. 32,0 @Ee=0,5mW/cm ²	min. 16,0 max. 35,0 @Ee=0,5mW/cm ²	min. 120 @Ee=5mW/cm ²	min. 40,0 @Ee=5mW/cm ²	min. 8,0 max. 18,0 @Ee=1,0mW/cm ²	min. 0,5 @Ee=1,0mW/cm ²
V _R max. [V]	60	60	32	32	60	60
Viewing Angle [°]	95	95	20	80	95	100
Dark Current [nA]	typ. 1 max. 60	typ. 1 max. 60	max. 25	max. 25	typ. 1 max. 60	max. 60
Rise Time (t _r) Fall Time (t _f)	typ. 5ns typ. 5ns	typ. 5ns typ. 5ns	typ. 5ns typ. 5ns	typ. 5ns typ. 5ns	typ. 5ns typ. 5ns	typ. 50ns typ. 50ns
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -65 max. +125	min. -40 max. +100	min. -25 max. +85

Optical Comparators Array

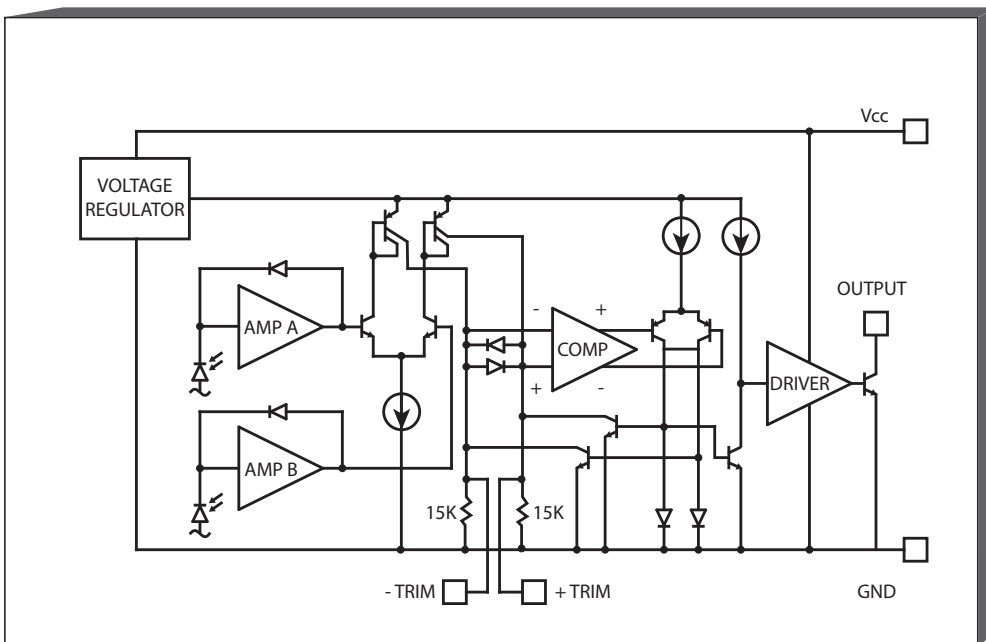
Differential Optical Comparator

Part No.	OPR5011	OPR5011T
Package	SMD	SMD
Receiver type	Differential Optical Comparators	Differential Optical Comparators
Anzahl Elemente	3	3
I _{cc} [mA]	typ. 9 max. 20	typ. 9 max. 20
Optical hysteresis typ. [%]	40	40
Optical offset [%]	min. -40 max. +40	min. -40 max. +40
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100
Features	Standard	Tape & Reel



Block Diagram

OPR5011




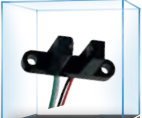




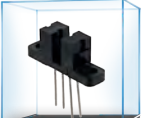
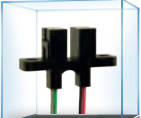

Slotted Optical Switch Phototransistor | Analoger Ausgang



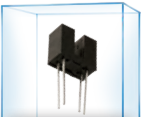
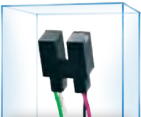
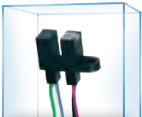
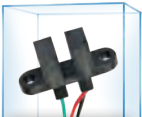


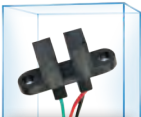
Part No.	OPB200	OPB365T55	OPB380P55Z	OPB380T51Z	OPB390L11Z	OPB390P11Z	OPB390T51Z	OPB390T55Z
Package	Slotted L	Slotted T	Slotted P	Slotted T	Slotted L	Slotted P	Slotted T	Slotted T
Wavelength typ. [nm]	890	890	890	890	890	890	890	890
Slot [mm]	Width: 5,08 Depth: 8,13	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76
Aperture [mm]	Emitter: 1,52* Sensor: 1,52*	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 0,25 Sensor: 0,25	Emitter: 0,25 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
I _{C(ON)} [mA]	min. 1,0 max. 6,0	min. 3,5 max. 14,0	min. 1,0 max. 5,0	min. 2,5 max. 10,0	min. 1,0 max. 5,0	min. 1,0 max. 5,0	min. 2,5 max. 10,0	min. 3,5 max. 14,0
V _{CE max.} [V]	30	30	30	30	30	30	30	30
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85

*Linse

Slotted Optical Switch Phototransistor | Analoger Ausgang

Part No.	OPB830W11Z	OPB830W55Z	OPB831W55Z	OPB832W55Z	OPB840L11	OPB840W11Z	OPB840W51Z	OPB840W55Z
Package	Side Mount	Side Mount	Side Mount	Side Mount	Side Mount	Side Mount	Side Mount	Side Mount
Wavelength typ. [nm]	880	880	890	880	890	880	880	880
Slot [mm]	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00
Aperture [mm]	Emitter: 0,25 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 0,25 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
I _{C(ON)} [mA]	min. 0,625	min. 0,625	min. 1,25	min. 2,25	min. 0,625	min. 0,625	min. 0,625	min. 0,625
V _{CE max.} [V]	30	30	30	30	30	30	30	30
Operating Temperature [°C]	min. -40 max. +80	min. -40 max. +80	min. -40 max. +80	min. -40 max. +80	min. -40 max. +85	min. -40 max. +80	min. -40 max. +80	min. -40 max. +80

								
OPB804	OPB816Z	OPB818	OPB820S10	OPB821S5Z	OPB825	OPB828D	OPB829CZ	OPB829DZ
Slotted N	Slotted T	Slotted N	Slotted P	Slotted P	Slotted N	Slotted T	Slotted T	Slotted T
935	890	890	890	890	890	890	890	890
Width: 3,81 Depth: 8,38	Width: 5,08 Depth: 16,13	Width: 5,08 Depth: 6,35	Width: 3,18 Depth: 8,76	Width: 2,03 Depth: 6,48	Width: 4,06 Depth: 7,24	Depth: 8,00	Depth: 8,00	Depth: 8,00
Emitter: 1,78 Sensor: 1,78	Emitter: 1,27 Sensor: 0,25	Emitter: 1,52 Sensor: 1,52	Emitter: 1,02 Sensor: 0,25	Emitter: 1,02 Sensor: 0,13	Emitter: 1,52 Sensor: 1,52	Emitter: 1,27 Sensor: 0,25	Emitter: 1,52 Sensor: 1,52	Emitter: 1,27 Sensor: 0,25
typ. 20 max. 30	typ. 20 max. 50	typ. 20 max. 30	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 30	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
typ. 5,00	min. 1,00 max. 10,00	min. 0,1	min. 0,5	min. 0,30	min. 1,00 max. 45,0 0	min. 1,8	min. 1,8	min. 1,8
30	30	30	30	30	30	30	30	30
min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +80	min. -40 max. +80

								
OPB842W51Z	OPB857Z	OPB870N11	OPB871N51	OPB880P51Z	OPB880T51Z	OPB885Z	OPB890P51Z	OPB891T51Z
Side Mount	Side Mount	Slotted N	Slotted N	Slotted P	Slotted T	Slotted P	Slotted P	Slotted T
880	890	890	890	890	890	890	890	890
Width: 3,18 Depth: 8,00	Width: 3,81 Depth: 9,02	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,00	Width: 9,53 Depth: 15,11	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,00
Emitter: 1,27 Sensor: 0,25	Emitter: 0,44 Sensor: -	Emitter: 0,25 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27
typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
min. 2,25	min. 1,50 max. 17,00	min. 0,50	min. 1,00	min. 0,50	min. 0,50	min. 1,30 max. 8,00	min. 0,50	min. 1,00
30	30	30	30	30	30	30	30	50
min. -40 max. +80	min. -40 max. +80	min. -40 max. +100	min. -40 max. +100	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85

Wide Gap - Slotted Optical Switch Fototransistor analog Ausgang

Part No.	OPB800L55	OPB800W51Z	OPB810L51	OPB810W51Z	OPB811L55	OPB811W55Z
Package	Slotted T	Slotted T	Slotted T	Slotted T	Slotted T	Slotted T
Wavelength typ. [nm]	890	890	890	890	890	890
Slot [mm]	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89
Aperture [mm]	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
I _{C(ON)} min. [mA]	0,625	0,625	0,625	0,625	1,25	1,25
V _{CE} min./max. [V]	30	30	30	30	30	30
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +80	min. -40 max. +85	min. -40 max. +80	min. -40 max. +85	min. -40 max. +80

Dual Channel Encoder Fototransistor analog Ausgang

Part No.	OPB822S	OPB822SD	OP826S	OPB826SD
Package	Slotted T	Slotted T	Slotted N	Slotted N
Wavelength [nm]	935	935	890	890
Slot [mm]	Width: 2,29 Depth: 7,62	Width: 2,29 Depth: 7,62	Width: 2,54 Depth: 10,67	Width: 2,54 Depth: 10,67
Aperture [mm]	Emitter: - Sensor: 1,02	Emitter: 1,02 Sensor: 1,02	Emitter: 1,02 Sensor: 1,02	Emitter: 1,02 Sensor: 1,02
I _{C(ON)} min. [mA]	0,25	0,1	0,25	0,1
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
V _{CE} max. [V]	30	30	30	30
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85

Deep Gap - Slotted Optical Switch Fototransistor analog Ausgang

Part No.	OPB815L	OPB815WZ
Package	Slotted T	Slotted T
Wavelength typ. [nm]	890	890
Slot [mm]	Width: 9,53 Depth: 10,92	Width: 9,53 Depth: 10,92
Aperture [mm]	Emitter: 1,52* Sensor: 1,52*	Emitter: 1,52 Sensor: 1,52*
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50
I _{C(ON)} [mA]	min. 3,5 max. 16,0	min. 3,5 max. 16,0
V _{CE} min./max. [V]	30	30
Operating Temperature [°C]	min. -40 max. +80	min. -40 max. +80

*Linse

Wide Gap - Slotted Optical Switch

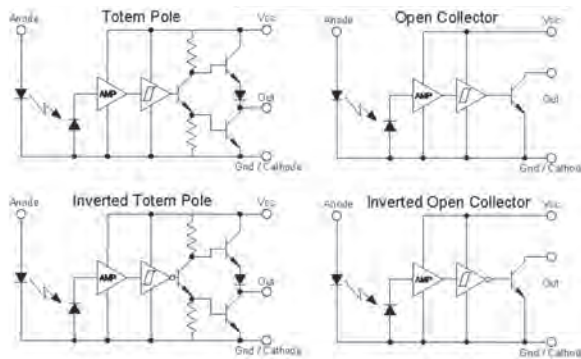
Photologic

Part No.	OPB900W55Z	OPB901W55Z	OPB903W55Z	OPB910W55Z	OPB911W55Z	OPB912W55Z	OPB913W55Z
Package	Slotted T	Slotted T	Slotted T	Slotted T	Slotted T	Slotted T	Slotted T
Wavelength typ. [nm]	890	890	890	890	890	890	890
Slot [mm]	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89	Width: 9,53 Depth: 8,89
Aperture [mm]	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27
I _F [mA]	typ. 20 max.50	typ. 20 max.50	typ. 20 max.50	typ. 20 max.50	typ. 20 max.50	typ. 20 max.50	typ. 20 max.50
I _{CLL} I _{CHH}	min. 15mA max. 15mA	min. 15mA max. 15mA	min. 15mA max. 15mA	min. 15mA max. 15mA	min. 15mA max. 15mA	min. 15mA max. 15mA	min. 15mA max. 15mA
V _{CC} [V]	min. 4,5 max. 5,25	min. 4,5 max. 5,25	min. 4,5 max. 5,25	min. 4,5 max. 5,25	min. 4,5 max. 5,25	min. 4,5 max. 5,25	min. 4,5 max. 5,25
Operating Temperature [°C]	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70

Slotted Optical Switch "Right Angle Package" Photologic®

Part No.	OPB920_Z
Package	90° Switch
Sensortyp	Totem-Pole
Wavelength typ. [nm]	890
I _F [mA]	typ. 20 max.50
I _{CLL} I _{CHH} max. [mA]	min. 15 max. 15
V _{CC} [V]	min. 4,5 max. 16,0
Operating Temperature [°C]	min. -40 max. +70

Part Number Guide — OPB920xZ Series	
OPB920 _ Z	
A = Totem Pole	
B = Open Collector	
C = Inverted Totem Pole	
D = Inverted Open Collector	
All versions with 26 AWG wire termination (24" [61cm] long)	








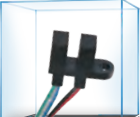





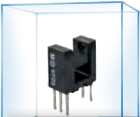






Slotted Optical Switch Photologic Digital Output

Part No.	OPB930W51Z	OPB930W55Z	OPB933W51Z	OPB940W51Z	OPB941W51Z	OPB943W51Z	OPB961N51	OPB961T51
Package	Side Mount	Side Mount	Side Mount	Side Mount	Side Mount	Side Mount	Slotted N	Slotted T
Sensortyp	Totem-Pole	Totem-Pole	Inv-Open-Collector	Totem-Pole	Open-Collector	Inv-Open-Collector	Open-Collector	Open-Collector
Wavelength typ. [nm]	880	880	880	880	880	880	890	890
Slot [mm]	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76
Aperture [mm]	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
I _{CC1} I _{CC2}	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	min. 15 max. 15	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA
V _{CC} [V]	min. 4,75 max. 5,25	min. 4,75 max. 5,25	min. 4,75 max. 5,25	min. 4,75 max. 5,25	min. 4,75 max. 5,25	min. 4,75 max. 5,25	min. 4,5 max. 16,0	min. 4,5 max. 16,0
Operating Temperature [°C]	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70

Slotted Optical Switch Photologic Digital Output

Part No.	OPB983T51Z	OPB990L51Z	OPB990P51Z	OPB990T51Z	OPB990T55Z	OPB991L51Z	OPB992T51Z	OPB993L11Z
Package	Slotted T	Slotted L	Slotted P	Slotted T	Slotted T	Slotted L	Slotted T	Slotted L
Sensortyp	Inv-Open-Collector	Totem-Pole	Totem-Pole	Totem-Pole	Totem-Pole	Open-Collector	Inv-Totem-Collector	Inv-Open-Collector
Wavelength typ. [nm]	890	890	890	890	890	890	890	890
Slot [mm]	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,00	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76
Aperture [mm]	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
I _{CC1} I _{CC2}	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA
V _{CC} [V]	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0
Operating Temperature [°C]	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70

								
OPB970N11	OPB970N51	OPB971N51	OPB973N51	OPB980L51Z	OPB980L55Z	OPB980T55Z	OPB982P51Z	OPB983P51Z
Slotted N	Slotted N	Slotted N	Slotted N	Slotted L	Slotted L	Slotted T	Slotted P	Slotted P
Totem-Pole	Totem-Pole	Open-Collector	Inv-Open-Collector	Totem-Pole	Totem-Pole	Totem-Pole	Inv-Totem-Collector	Inv-Open-Collector
890	890	890	890	890	890	890	890	890
Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	3,18 8,76	3,18 8,76	3,18 8,76
Emitter: 0,25 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25
typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA	max. 15mA max. 15mA
min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0
min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70	min. -40 max. +70

								
OPB460N11	OPB615	OPB616	OPB625	OPB627	OPB665N	OPB665T	OPB666N	OPB666T
Slotted N	Slotted N	Slotted N	Slotted N	Slotted N	Slotted N	Slotted T	Slotted N	Slotted T
10k Pull-up	10k Pull up	Open Collector	10k Pull up	Inv. 10k	10k Pull up	10k Pull up	Open Collector	Open Collector
890	890	890	890	890	890	890	890	890
Width: 3,18 Depth: 8,76	Width: 3,81 Depth: 6,10	Width: 3,81 Depth: 6,10	Width: 4,83 Depth: 7,24	Width: 4,83 Depth: 7,24	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76	Width: 3,18 Depth: 8,76
Emitter: 1,27 Sensor: 0,25	-	-	-	-	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 0,25
typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
max. 7,5mA max. 7,5mA	min. 12mA max. 12mA	min. 12mA max. 12mA	min. 12mA max. 12mA	min. 12mA max. 12mA	min. 12mA max. 12mA	min. 12mA max. 12mA	min. 12mA max. 12mA	min. 12mA max. 12mA
min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0	min. 4,5 max. 16,0
min. -40 max. +70	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100

Reflexkoppler
Phototransistor Analog Output

Part No.	OPB606A	OPB608A	OPB608B	OPB608V	OPB710F	OPB730	OPB730F
Package	Mini-Cube	Mini-Cube	Mini-Cube	Mini-Cube	TO-46	TO-46	TO-46
Wavelength typ. [nm]	935	890	890	850	935	935	935
Sensortyp	Transistor	Rbe Transistor	Rbe Transistor	Rbe Transistor	Transistor	Darlington	Darlington
Reflection distance [mm]	typ. 1,27	typ. 1,27	typ. 1,27	typ. 1,27	typ. 6,35	typ. 6,35	typ. 6,35
$I_{C(ON)}$ min. [mA]	0,50	2,00	1,00	5,00	0,15	1,00	1,00
I_F [mA]	typ. 20 max.50	typ. 20 max.50	typ. 20 max.50	typ. 7 max.12	typ. 20 max.50	typ. 20 max.50	typ. 20 max.50
V_{CE} typ. max. [V]	30	30	30	30	30	15	15
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +70	min. 0 max. +70	min. 0 max. +70	min. 0 max. +70
Special Features	-	-	-	-	Filter	-	Filter

Reflexkoppler
Phototransistor Analog Output

Part No.	OPB745	OPB700ALZ	OPB701ALZ	OPB704	OPB704WZ	OPB706A	OPB711	OPB755TZ
Package	Reflective Switch	Reflective Switch	Reflective Switch	Reflective Switch	Reflective Switch	Cube Reflective	Flat Reflective	Reflective Switch
Sensortyp	Darlington	Transistor	Darlington	Transistor	Transistor	Transistor	Transistor	Transistor & Rbe
Wavelength [nm]	890	890	890	890	890	935	890	890
Reflection distance [mm]	typ. 3,81	typ. 5,08	typ. 5,08	typ. 3,81	typ. 3,81	typ. 1,27	typ. 2,03	min. 2,03 typ. 3,81 max. 5,59
$I_{C(ON)}$ min. [mA]	0,10	0,10	2,50	0,20	0,20	0,50	0,35	0,50 3,75 0,250
I_F [mA]	typ. 40 max.40	typ. 40 max.100	typ. 40 max.50	typ. 40 max.40	typ. 40 max.40	typ. 20 max.50	typ. 20 max.50	typ. 30 max. 50
V_{CE} max. [V]	15	24	15	30	30	24	24	30
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +100	min. -40 max. +100	min. -40 max. +80	min. -40 max. +80	min. -40 max. +85	min. -40 max. +85	min. -40 max. +80

Reflexkoppler with Photologic® Digital Output

Part No.	OPB716Z	OPB718Z	OPB760	OPB770TZ
Package	Object Reflective	Object Reflective	Object Reflective	Object Reflective
Sensortyp	Open-Collector	Inv-Open-Collector	Totem-Pole	Totem-Pole
Wavelength [nm]	890	890	890	890
Reflection distance [mm]	typ. 12,70	typ. 12,70	min. 2,03 max. 5,59	min. 2,03 max. 5,59
V _{CC} [V]	min. 4,75 max. 5,25	min. 4,75 max. 5,25	min. 4,75 max. 5,25	min. 4,75 max. 5,25
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85

Miniature SMD Reflexkoppler

Part No.	OPR5005	OPB733TR
Package	SMD Reflective Object	SMD Reflective Object
Sensortyp	Transistor	Transistor
Wavelength [nm]	890	890
Reflection distance [mm]	min. 1,27 max. 5,08	min. 10,16 max. 25,40
I _F [mA]	typ. 20 max. 50	typ. 20 max. 50
Operating Temperature [°C]	min. -55 max. +125	min. -40 max. +85

Long Distance Reflective Switch Photologic

Part No.	OPB720B-12Z	OPB720B-30VZ	OPB720A-12Z	OPB720A-30VZ
Package	Object Reflective	Object Reflective	Object Reflective	Object Reflective
Sensortyp	Open-Collector	Open-Collector	Open-Collector	Open-Collector
Wavelength [nm]	890	890	890	890
Reflection distance [mm]	min. 1,00 max. 304,80	min. 1,00 max. 762,00	min. 1,00 max. 304,80	min. 1,00 max. 762,00
V _{CC} or V _{CE} [V]	min. 4 max. 7	min. 4 max. 7	min. 10 max. 30	min. 10 max. 30
VOL Volt	max. 0,8 min. 3,5	max. 0,8 min. 3,5	max. 0,8 min. 5,0	max. 0,8 min. 5,0
V _{CE} max. [V]	30	30	30	30
Operating Temperature [°C]	min. 0 max. +70	min. 0 max. +70	min. 0 max. +50	min. 0 max. +50

Long Distance Optical Switch Analog Output

Part No.	OPB732WZ	OPB732
Package	Object Reflective	Object Reflective
Sensortyp	Transistor	Transistor
Wavelength [nm]	850	850
Reflection distance [mm]	typ. 25,40 max. 76,20	typ. 25,40 max. 76,20
I _{CON} min. [mA]	0,25	0,25
V _{CE} max. [V]	30	30
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85

Tube Liquid Sensor Bubble Sensor

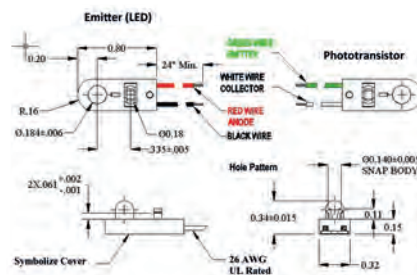
Part No.	OPB350	OPB350L062	OPB350W062Z	OPB350W125Z	OPB350L187	OPB350W250Z	OCB350LxyzZ
Package	Slotted N	Slotted N	Slotted T	Slotted T	Slotted T	Slotted T	
Wavelength [nm]	890	890	890	890	890	890	
Tube Size	3,18 mm 1/8"	1,57 mm 1/16"	1,57 mm 1/16"	3,18 mm 1/8"	4,76 mm 3/16"	6,35 mm 1/4"	
$I_{C(ON)}$	min. 1,00 typ. 3,50 max. 6,00	min. 0,30 typ. 0,80 max. 1,30	min. 0,30 typ. 0,80 max. 1,30	min. 1,30 typ. 2,60 max. 3,90	min. 1 typ. 2 max. 4	min. 0,75 typ. 1,50 max. 3,00	
$I_{C(ON)}$ Ratio typ.	1:3	1:3	1:3	1:2,5	1:2,3	1:2,3	
I_F [mA]	typ. 5 max. 50	typ. 5 max. 50	typ. 5 max. 50	typ. 5 max. 50	typ. 5 max. 50	typ. 5 max. 50	
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	

xyz = 062
= 125
= 187
= 250

Calibration Circuit Board

Optical Emitter and Sensor Pair Snap-in mounting

Part No.	OPB100Z	OPB100-EZ	OPB1000-SZ
Package	Module Pair	1/2 Module Pair	1/2 Module Pair
Sensortyp	Led + Foto-transistor	LED	Foto-transistor
Wavelength [nm]	880	880	-
$I_{C(ON)}$ min. [mA]	5	-	5
I_F [mA]	typ. 20 max. 100	typ. 20 max. 100	-
V_{CE} max. [V]	30	-	30
Operating Temperature [°C]	min. -40 max. +80	min. -40 max. +80	min. -40 max. +80



variable sensing distance
over 91,4cm

Optically Coupled Isolators High Isolation Voltages

Part No.	OPI110C	OPI120	OPI150	OPI1264A	OPI1264B	OPI1264C
Package	Axial zylindrisch	Axial Channel	Axial zylindrisch	Axial zylindrisch	Axial zylindrisch	Axial zylindrisch
Wavelength [nm]	890	890	890	890	890	890
Sensortyp	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor
CTR	min. 100	min. 20 max. 50	min. 10	min. 25	min. 50 max. 125	min. 100
Isolation voltage [kV _{DC}]	±10	±15	±50	±10	±10	±10
I _F [mA]	typ. 16 max. 50	typ. 10 max. 40	typ. 10 max. 40	typ. 10 max. 40	typ. 10 max. 40	typ. 10 max. 40
V _{CE} [V]	max. 30	max. 25	max. 30	max. 30	max. 30	max. 30
Operating Temperature [°C]	min. -40 max. +85	min. -55 max. +100	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85

High Voltage Isolators Photologic®

Part No.	OPI1266	OPI1268	OPI1268S	OPI1278S
Package	Side Channel	Side Channel	Side Channel	Side Channel
Wavelength [nm]	890	890	850	890
Sensortyp	Open Collector	Open Collector	Open Collector	Open Collector
Isolation voltage [kV _{DC}]	±16	±16	±20	±20
CTR min.	Logic 15mA	Logic 15mA	Logic 15mA	Logic 15mA
t _{PLH} [ns] t _{PHL} [ns]	typ. 800 typ. 800	typ. 100 typ. 200	typ. 50 typ. 50	typ. 50 typ. 50
I _F [mA]	typ. 10 max. 50	typ. 10 max. 50	typ. 10 max. 50	typ. 10 max. 50
V _{CE} max. [V]	7	18	18	18
Operating Temperature [°C]	min. -40 max. +70	min. -40 max. +100	min. -50 max. +100	min. -50 max. +100

Coming soon

Features:

- 20kV Isolations
- 30kV/μS dv/dt immunity
- 2 Mbit/s transfer rate
- t_{PHL}-t_{PLH} ≤ 50 ns typical
- Cerrpage path: 24 mm
- TTL Compatible
- 6 Axis / 10G_{RMS} load rating

Certifications:

- UL File #E58730
- Vde File #40031798
- EN 60079-0:2012/A11:2013
EN 60079-11:2012
- IP65 Rated
- ATEX Certification Exia IIC Ga

Fiber Optic Transmitters LED

Part No.	OPF370A	OPF372A	OPF1414	OPV315AT
Package	TO-18 Clear Cap	ST-Tall	Cube/DIP ST-Panel	ST-Tall
Wavelength [nm]	850	850	850	850
Coupled Power min.	-16,00 dbm 25,00 µW	-16,00 dbm 25,00 µW	-17,30 dbm 18,00 µW	-5,20 dbm 300,00 µW
I _F [mA]	max. 100	max. 100	max. 100	typ. 7 max. 12
t _r t _f [ns]	typ. 6 max. 10	typ. 6 max. 10	typ. 4,5 max. 6,5	typ. 110 max. 110
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +85	min. -40 max. +85	min. -0 max. +85

Alternative to OPF37x-series

Part No.	OPF350A	OPF352A
Package	TO-18 Clear Cap	ST-Tall
Wavelength [nm]	850	850
Coupled Power min.	-16,00 dbm 25,00 µW	-16,00 dbm 25,00 µW
I _F [mA]	max. 100	max. 100
t _r t _f [ns]	typ. 6 max. 10	typ. 6 max. 10
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +85

Fiber	Refractive Index	N.A.	OPF370A OPF372A	OPF350A OPF352A
50/125 µm	Graded	0,2	29 µW	
62/125 µm	Graded	0,28	89 µW	
100/140 µm	Graded	0,29	200 µW	
200/300 µm	Step	0,41	750 µW	

Fiber Optic Detector PIN Dioden

Part No.	OPF470	OPF480	OPF482
Package	TO-18 Green Cap	TO-18 Green Cap	St-Tall
Responsivity [mA/mW]	typ. 0,55	typ. 0,55	typ. 0,55
t _r t _f typ. [ns]	6,00	2,00	2,00
Reverse Voltage [V]	typ. 5 max. 100	typ. 5 max. 100	typ. 5 max. 100
Output Typ	Analog	Analog	Analog
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100	min. -40 max. +85

Fiber Optic Receivers TTL / CMOS Logic

Part No.	OPF520	OPF522	OPF2412
Package	TO-18 Green Cap	ST-Receptacle	Cube/DIP ST-Panel
Data Rate max.	5 Mbps	5 Mbps	5 Mbps
Receiver Typ	Open Collector Schmitt	Open Collector Schmitt	Open Collector Schmitt
Input Sensitivity	-40 dBm 0,10 µW	-40 dBm 0,10 µW	-40 dBm 0,10 µW
Peak Input Power	-9,20 dBm 120,00 µW	-9,20 dBm 120,00 µW	-9,20 dBm 120,00 µW
Output Typ	TTL CMOS	TTL CMOS	TTL CMOS
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85	min. -40 max. +85

Mini Half-Watt SMD 3,5 mm (120° Abstrahlwinkel)

Part No.	OV55MRBCR4	OV55MGBCR4	OV55MBBCR4	OV55MABCR4
Package	3.5 mm Mini Half-Watt	3.5 mm Mini Half-Watt	3.5 mm Mini Half-Watt	3.5 mm Mini Half-Watt
Material	AllInGaP	InGaN	InGaN	AllInGaP
Color	Red	Green	Blue	Amber
Wavelength [nm]	625	525	465	615
lens color	Clear	Clear	Clear	Clear
I _V typ.	7.150 mcd @150 mA	22 lm @150 mA	6 lm @150 mA	7.150 mcd @150 mA
Viewing angle [°]	120	120	120	120
V _F typ. [V]	2,20	3,40	3,40	2,20
Operating Temperature [°C]	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100	min. -40 max. +100

Full Color PLCC4 LED

Part No.	OV55MRBCR4
Package	PLCC4
Material	R: AllInGaP G&B: InGaN
Color	RGB
D [nm]	R: 622 G: 530 B: 470
Lens color	Diffused
I _v bei I _F =mA typ. [mcd]	R: 635 G: 1.000 B: 335
Viewing Angle [°]	120
V _F typ. [V]	R: 2,30 G&B: 3,60
Operating Temperature [°C]	min. -40 max. +100

Full Color Chip LED

Part No.	OV55MRBCR4	OV55MRBCR4
Package	Side Mount	Top Mount
Material	R: AllInGaP G&B: InGaN	R: AllInGaP G&B: InGaN
Color	RGB	RGB
Wavelength [nm]	R: 625 G: 530 B: 475	R: 625 G: 530 B: 475
Lens Color	Clear	Clear
I _v bei I _F =mA typ. [mcd]	R: 105 G: 330 B: 110	R: 105 G: 330 B: 110
Viewing Angle [°]	150	150
V _F typ. [V]	R: 2,00 G&B: 3,30	R: 2,00 G&B: 3,30
Operating Temperature [°C]	min. -40 max. +85	min. -40 max. +85

Hi-Rel LED
Pill | TO-46

Part No.	OP223TX OP223TXV	OP224S OP224TX OP224TXV	OP235TX OP235TXV	OP236TX OP236TXV
Package	Pill Dome Lens	Pill Dome Lens	TO-46 Dome Lens	TO-46 Dome Lens
LED Wavelength [nm]	890	890	890	890
Output power min. [mW]	1,00	1,50	1,50	3,50
I_f [mA]	typ. 50 max. 100	typ. 50 max. 100	typ. 50 max. 100	typ. 50 max. 100
Viewing Angle [°]	24	24	18	18
Operating Temperature [°C]	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125

Hi-Rel Photologic® Phototransistor

Part No.	OPL800TX OPL800TXV
Package	TO-18 lensed hermetic
Sensortype	Totem-Pole
V_{OL} [$@E_e=0,0mW/cm^2$]	max. 0,4 V
V_{LO} [$@E_e=1,0mW/cm^2$]	min. 2,4 V
V_{CC} [V]	typ. 4,5 max. 5,5
Viewing Angle [°]	25
Operating Temperature [°C]	min. -55 max. +125

Hi-Rel NPN Silicon Phototransistor
PILL | TO-18

Part No.	OP602TX OP602TXV	OP603TX OP603TXV	OP604S OP604TX OP604TXV	OP803TX OP803TXV	OP804TX OP804TXV	OP805TX OP805TXV
Package	Pill Low Lens	Pill Low Lens	Pill Low Lens	TO-18 Dome Lens	TO-18 Dome Lens	TO-18 Dome Lens
Sensortype	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor
$I_{C(ON)}$ [mA]	min. 2 max. 5	min. 4 max. 8	min. 7	min. 4 max. 8	min. 7 max. 22	min. 15
V_{CE} [V]	typ. 5 max. 50	typ. 5 max. 50	typ. 5 max. 50	typ. 5 max. 30	typ. 5 max. 30	typ. 5 max. 30
Viewing Angle [°]	35	35	35	25	25	25
Operating Temperature [°C]	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125

Hi-Rel Slotted Switches

Part No.	OPB821TX OPB821TXV	OPB847TX	OPB870T51TX	OPB871N55TX	OPB871T51TXV	OPB871T55TX
Package	Slotted Wires	Slotted N	Slotted T	Slotted N	Slotted T	Slotted T
Sensortype	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor
Wavelength [nm]	880	890	890	890	890	890
Slot [mm]	Width: 2,03 Depth: 6,48	Width: 2,54 Depth: 6,35	Width : 3,18 Depth: 8,76	Width : 3,18 Depth: 8,76	Width : 3,18 Depth: 8,76	Width : 3,18 Depth: 8,76
I _{CON} min. [mA]	0,80	4,00	0,50	1,00	1,00	1,00
I _F [mA]	typ. 20 max. 50	20 30	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50	typ. 20 max. 50
V _{CE} [V]	30	30	30	min. 5 max. 50	min. 5 max. 50	min. 5 max. 50
Aperture [mm]	Emitter: 1,02 Sensor: 1,02	Emitter: 0,64 Sensor: 0,64	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27	Emitter: 1,27 Sensor: 0,25	Emitter: 1,27 Sensor: 1,27
Operating Temperature [°C]	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125

Hi-Rel Reflective Switch

Part No.	OPB700TX OPB700TXV
Package	Reflective Switch
Sensortype	Transistor
Wavelength typ. [nm]	890
Reflection distance [mm]	5,08
I _{CON} [µA]	min. 0,05 typ. 0,20
I _F [mA]	typ. 40 max. 50
V _{CE} max. [V]	50
Operating Temperature [°C]	min. -65 max. +125

High Reliability Assemblies

TT Electronics' high reliability assemblies are custom devices designed to meet military and aerospace applications. They offer superior reliability and hermetic components.

Product Highlights:

- Hermetic chip & wire microelectronic assemblies
- Encapsulated chip & wire microelectronic assemblies
- Optoelectronic assemblies

Technical Capabilities:

- Conductive systems include Au, Ag, and PdAg
- Clean rooms to 10,000 ppm
- Die attach (conductive/non-conductive epoxy, eutectic, solder)
- Hermetic and local encapsulation
- Multi-site manufacturing
- Lead-free and 63/37 solder capability
- Extended temperature operation (-55°C to +150°C)

Qualifications / Certifications:

- MIL-PRF-19500 | MIL-PRF-38534/38535 | MIL-STD-883/750
- TX, TXV, B, S, and ESA level
- ISO/TS16949 | ISO9001

SMD Optically Coupled Isolators JAN

Part No.	JANTX-4N22A	JANTX-4N23A	JANTX-4N24A	JANTX-4N47A	JANTX-4N48A	JANTX-4N49A
Package	TO-78	TO-78	TO-78	TO-78	TO-78	TO-78
CTR	min. 25	min. 60	min. 100	min. 50	min. 100 max. 500	min. 200 max. 1.000
Insulation voltage min. [kV]	1	1	1	1	1	1
I _F [mA]	typ. 10 max. 40	typ. 10 max. 40	typ. 10 max. 40	typ. 10 max. 40	typ. 10 max. 40	typ. 10 max. 40
V _{CE} max. [V]	35	35	35	40	40	40
t _r t _f max. [μs]	15	15	20	20	20	25
Slash Sheet [MIL-PRF-19500]	486	486	486	548	548	548
Operating Temperature [°C]	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125

SMD Optically Coupled Isolators JAN

Part No.	JAN4N22U JANTX-4N22U JANTXV-4N22U	JANTX-4N22U JANTXV-4N22U	JAN4N24U JANTX-4N24U JANTXV-4N24U	JAN4N47U JANTX-4N47U JANTXV-4N47U	JAN4N48U JANTX-4N48U JANTXV-4N48U	JAN4N49U JANTX-4N49U JANTXV-4N49U	HCC240 HCC240TX HCC240TXV	HCC242 HCC242TX HCC242TXV
Package	6-Pin Ceramic	6-Pin Ceramic	6-Pin Ceramic	6-Pin Ceramic	6-Pin Ceramic	6-Pin Ceramic	4-Pin Ceramic	4-Pin Ceramic
Sensortyp	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor
Insulation voltage [kV]	1	1	1	1	1	1	1	1
CTR	min. 25	min. 60	min. 100 max. 500	min. 50	min. 100 max. 500	min. 200 max. 1.000	min. 25 max. 60	min. 100 max. 150
I _F [mA]	typ. 1 max. 40	typ. 1 max. 40	typ. 1 max. 40	typ. 1 max. 40	typ. 1 max. 40	typ. 1 max. 40	typ. 1 max. 40	typ. 1 max. 40
V _{CE} max. [V]	35	35	35	40	40	40	30	30
t _r t _f max. [μs]	15 15	15 15	20 20	20 20	20 20	20 20	15 15	20 20
Operating Temperature [°C]	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125

THT Optically Coupled Isolators

TO-72

Part No.	3C91CTX 3C91CTXV	3C92CTX 3C92CTXV	3N243TX	3N244TX	3N245TX	3N261TX	3N263TX
Package	TO-72	TO-72	TO-72	TO-72	TO-72	TO-72	TO-72
Sensortyp	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor
Wavelength [nm]	935	935	880	880	880	880	880
CTR	min. 0,3 max. 2,0	min. 0,3 max. 2,0	min. 0,15	min. 0,3	min. 0,6	min. 0,05	min. 2,0 max. 10,0
Insulation voltage [V]	1	1	1	1	1	1	1
I_F [mA]	typ. 10 max. 50	typ. 10 max. 50	typ. 3 max. 40	typ. 3 max. 40	typ. 3 max. 40	typ. 1 max. 40	typ. 1 max. 40
$V_{CE \text{ max.}}$ [V]	min. 10 max. 50	min. 10 max. 50	min. 10 max. 30	min. 10 max. 30	min. 10 max. 30	min. 5 max. 30	min. 5 max. 30
t_f/t_r [μ s]	max. 9 max. 6	max. 9 max. 6	max. 10 max. 10	max. 10 max. 10	max. 10 max. 10	max. 20 max. 20	max. 25 max. 25
Operating Temperature [$^{\circ}$ C]	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125

THT Optically Coupled Isolators

High Isolation Voltage

Part No.	OPI120 OPI120TX OPI120TXV	OPI123	OPI125 OPI125TX OPI125TXV	OPI150 OPI150TX OPI150TXV
Package	Axial Channel	Axial Channel	Axial Channel	Axial Cylindrical
Sensortyp	Transistor	Darlington	Totem-Pole	Transistor
Wavelength [nm]	890 oder 935	890 oder 935	890 oder 935	890
CTR	20	50	20	10
Insulation voltage [kV]	15	15	15	50
I_F [mA]	typ. 10 max. 50	typ. 10 max. 50	typ. 7,5 max. 25	typ. 16 max. 100
V_{CE} [V]	typ. 5 max. 25	typ. 5 max. 25	max. 35	typ. 5 max. 30
Operating Temperature [$^{\circ}$ C]	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125	min. -65 max. +125

Hallogic Hall Effect Sensors Ceramic Package

Part No.	OMH090 OMH090B OMH090S	OMH3019 OMH3019B OMH3019S	OMH3020 OMH3020B OMH3020S	OMH3040 OMH3040B OMH3040S	OMH3075 OMH3075B OMH3075S	OMH3131 OMH3131B OMH3131S	OMH3150 OMH3150B OMH3150S
Package	Side Sensing 3-Leaded Ceramic	Side Sensing 3-Leaded Ceramic	Side Sensing 3-Leaded Ceramic	Side Sensing 3-Leaded Ceramic	Side Sensing 3-Leaded Ceramic	Side Sensing 3-Leaded Ceramic	Side Sensing 3-Leaded Ceramic
Output Type	Uni-Polar Non-Lat- ching	Uni-Polar Non-Lat- ching	Uni-Polar Non-Lat- ching	Uni-Polar Non-Lat- ching	Bi-Polar Latching	Uni-Polar Non-Lat- ching	Ratiometric
Operating Point Gauss	min. 50 typ. 90 max. 180	min. 175 typ. 300 max. 500	min. 70 typ. 220 max. 350	min. 70 typ. 150 max. 200	min. 50 typ. 150 max. 250	min. 20 typ. 60 max. 95	min. 3,0mV/G typ. 3,5mV/G max. 4,1mV/G
Release Point Gauss	min. 30 typ. 65 max. 160	min. 125 typ. 235 max. 420	min. 50 typ. 180 max. 330	min. 50 typ. 115 max. 180	min. -250 typ. -150 max. -50	min. 10 typ. 45 max. 85	-
Hysteresis Gauss	min. 10 typ. 30 max. 60	min. 30 typ. 100 max. 155	min. 15 typ. 55 max. 200	min. 10 typ. 35 max. 60	min. 100 typ. 250 max. 500	min. 5 typ. 15 max. 40	-
V _{CC} [V]	min. 4,5 max. 24,0	min. 4,5 max. 24,0	min. 4,5 max. 24,0	min. 4,5 max. 24,0	min. 4,5 max. 24,0	min. 4,5 max. 24,0	min. 4,5 max. 6,0
Operating Temperature [°C]	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -55 max. +125	min. -40 max. +125

SMD MOS und MOSFET Transistors

Part No.	2N2222AUA 2N2222AUATX 2N2222AU- ATXV	2N2222AUB 2N2222AUBTX 2N2222AUB- TXV	2N2907AUA 2N2907AUATX 2N2907AU- ATXV	2N2907AUB 2N2907AUBTX 2N2907AUB- TXV	2N4854U 2N4854UTX 2N4854UTXV	2N5794U 2N5794UTX 2N5794UTXV	2N5796U 2N5796UTX 2N5796UTXV	2N6987U 2N6987UTX 2N6987UTXV
Package	4-Pin Ceramic	3-Pin Ceramic	4-Pin Ceramic	3-Pin Ceramic	6-Pin Ceramic	6-Pin Ceramic	6-Pin Ceramic	20-Pin Ceramic
Sensortyp	NPN Transistor	NPN Transistor	PNP Transistor	PNP Transistor	NPN&PNP Transistor	Dual-NPN Transistor	Dual-PNP Transistor	Quad-PNP Transistor
H _{FE}	min. 50 max. 325	min. 50 max. 325	min. 75 max. 450	min. 75 max. 450	min. 50 max. 300	min. 35 max. 300	min. 75 max. 300	min. 75 max. 450
V _{CE0} max. [V]	50	50	60	60	40	40	60	60
t _r , t _f max. [ns]	35 300	35 300	45 300	45 300	45 300	45 310	50 140	45 300
Operating Junction Temperature [°C]	min. -65 max. +200	min. -65 max. +200	min. -65 max. +200	min. -65 max. +200	min. -65 max. +200	min. -65 max. +200	min. -65 max. +200	min. -65 max. +200

Advanced Sensor Technology

TT Electronics provides a wide range of sensor technologies uniquely suited to the rigorous requirements of military and aerospace applications, including optoelectronic S-level Hall effect sensors.

With the assistance of TT Electronics' design engineering teams, these technologies have the capability to be engineered to the high-reliability performance standards demanded by customer specifications while surviving the harshest environmental, temperature, and mechanical stresses.

Product Highlights:

- Infrared LED and VCSEL optosensors and assemblies
- Surface mount optocouplers / optoisolators
- Hall-effect sensors and assemblies – through hole
- Fiber optic components and transceivers
- LED and sensor "pill packs"

Technical Capabilities:

- Infrared LED and VCSEL, 850nm to 940nm wavelengths
- Silicon and III-V design capability
- Reflective and interruptor optical sensor designs
- Hall-effect magnetic sensing (bipolar, unipolar, ratiometric)
- Comprehensive in-house group testing
- 100% parametric test capabilities

Qualifications / Certifications:

- 100% in-house screening and QCI testing (Group A, B, C, D) per MIL-PRF-19500 method of MIL-STD-750 and per MIL-PRF-38535 of MIL-STD-883, method 5005
- TX, TXV, B, S, and ESA-level process capabilities
- ISO9001
- ISO/TS16949
- TSAT100% parametric test capabilities



SMD MOS und MOSFET Transistors

2N6989U 2N6989UTX 2N6989UTXV
20-Pin Ceramic
Quad-NPN Transistor
min. 50 max. 325
50
35 300
min. -65 max. +200

Part No.
Package
Sensortype
V_{DSS} min. [V]
$V_{GS(TH)}$ [V]
$I_{D(ON)}$ min. [mA]
G_{fs} min. [ms]
$t_{(ON)}$ $t_{(OFF)}$ max. [ns]

HCT7000MTX
3-Pin Ceramic
N-Channel Enhanced MOSFET
60
min. 0,8 max. 3,0
75
100
10 10

HCT802TX
6-Pin Ceramic
N&P-Channel Enhanced MOSFET
90
N:1,5 2,5 P:-2,0 -4,5
N:1,5 P:-1,1
N:170 P:200
N:15 17 P:50 50



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