

# *Optical Device*

**PRODUCTS**

 ***Fiber Optic Communication/  
Light Beam Application Devices***

 ***Photo Detectors***

 ***Photocoupler***

 ***OCMOS FET™***

 ***POF Link***

 ***Infra-Red Link Unit***

**PRODUCTS**

# *Optical Device*

## *Fiber Optic Communication/Light Beam Application Devices*

### *Product Map of Optical Communication/ Light Beam Application Device*

#### *Laser Diodes*

- ◆ *Visible LD for Beam Applications*
- ◆ *For Fiber Optic Communications*
  - *Fabry Perrot LD*
  - *DFBLD*
- ◆ *For Analog Applications*
- ◆ *For EDFA Pumping and High Power OTDR Applications*

#### *Detectors*

- ◆ *PIN Photo Diodes*
- ◆ *Avalanche Photo Diodes*

## *Photo Detectors*

### ***PIN Photo-diode***

- ◆ PIN photo-diode for remote control application*

### ***Light Receiving IC***

- ◆ Photo-diode with built-in amplifier for Optical Storage (Custom device)*

*Photocoupler*

 *General-purpose Tr. Photocoupler*

 *SOP Photocoupler*

 *High Speed Photocoupler*

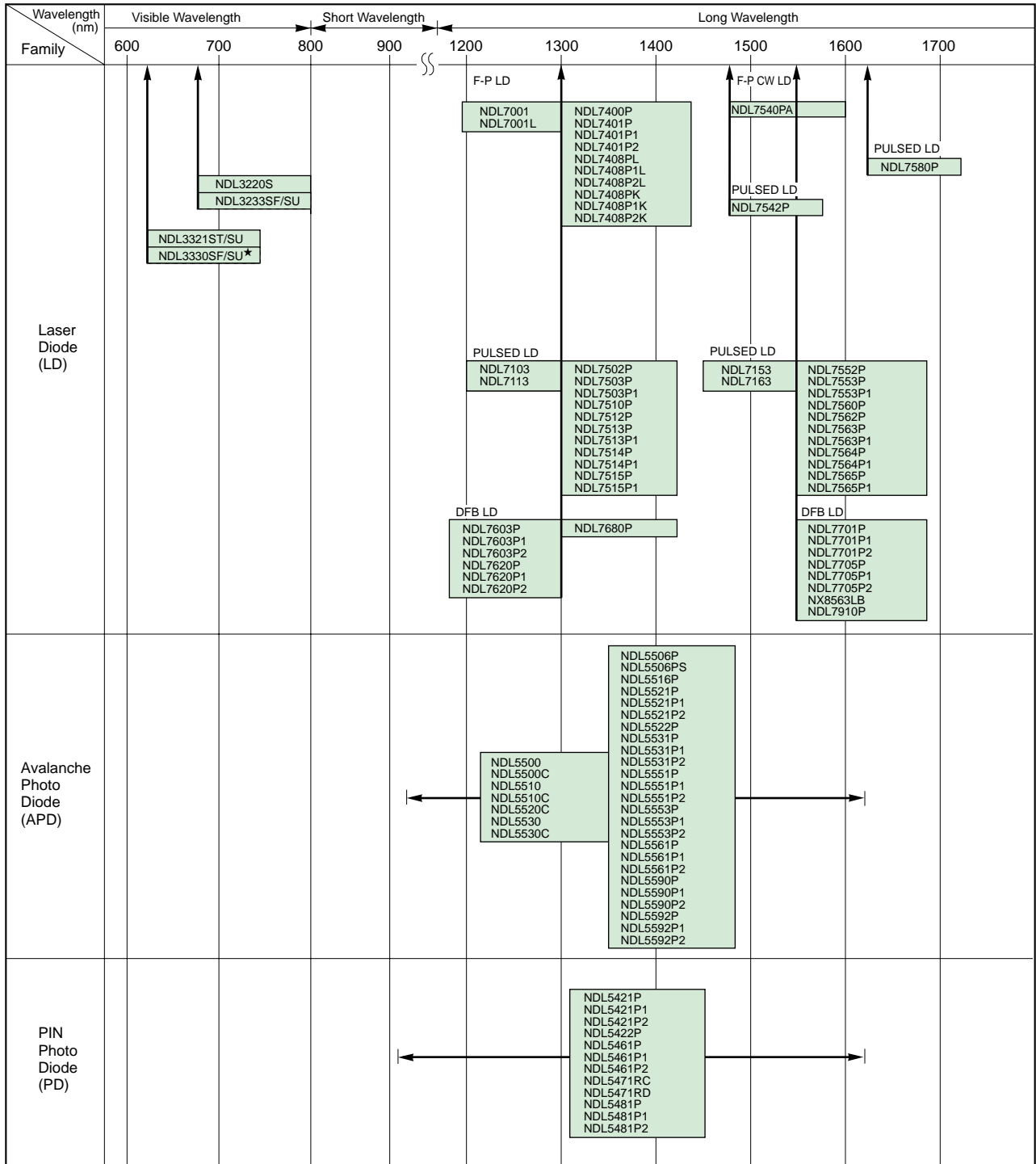
 *Analog Linear Photocoupler*

 *High Speed Photocoupler*

 *Inverter Control Photocoupler*

**Fiber Optic Communication/Light Beam Application Devices**

**Product map of optical communication/light beam application device**



→ : Mark wavelength or operating range

★ : Under development

Modules are available with FC-PC or SC-PC connector.

## Fiber Optic Communication/Light Beam Application Devices

### Laser Diodes

#### ■ Visible LD for Beam Applications

Part number	Absolute maximum ratings			Typical characteristics						Remarks
	P <sub>o</sub> /P <sub>f</sub> (mW)	T <sub>c</sub> (°C)	T <sub>stg</sub> (°C)	I <sub>th</sub> (mA)	I <sub>op</sub> (mA)	P <sub>o</sub> /P <sub>f</sub> (mW)	λ <sub>p</sub> (nm)	θ <sub>⊥</sub> (deg)	θ <sub>∥</sub> (deg)	
				TYP.	TYP.	TYP.	TYP.	TYP.	TYP.	
<b>NDL3220S</b>	6	-10 to +60	-40 to +85	20	30	5	670	30	8	Low threshold current
<b>NDL3233SF/SU</b>	35	-10 to +70	-40 to +100	50	100	35	685	21	9	Magneto-optical disk application
<b>NDL3321ST/SU</b>	6	-10 to +70	-40 to +85	40	60	5	650	30	8	DVD application
<b>NDL3330SF/SU*</b>	35	-10 to +70	-40 to +100	50	100	30	660	21	9	DVD-RAM, High density Magneto-optical disk application

\*: Under development

## Fiber Optic Communication/Light Beam Application Devices

### Laser Diodes

#### ■ For Fiber Optic Communications (Fabry Perrot LD)

Part number	Absolute maximum ratings			Typical characteristics (25°C)					Remarks
	I <sub>F</sub> (mA)	T <sub>C</sub> (°C)	T <sub>stg</sub> (°C)	P <sub>o</sub> /P <sub>r</sub> (mW)	I <sub>th</sub> (mA)	λ <sub>c</sub> (nm)	σ <sup>*2</sup> (nm)	t <sub>r</sub> /t <sub>f</sub> (ns)	
				MIN.	TYP.	TYP.	TYP.	MAX.	
<b>NDL7001</b>	–	–40 to +85	–55 to +125	5.0	10	1310	1.0	0.5/0.5	with monitor PD, small package
<b>NDL7001L</b>	–	–40 to +85	–55 to +125	5.0	10	1310	1.0	0.5/0.5	with monitor PD, small package
<b>NDL7400P</b>	I <sub>th</sub> +50	–20 to +65	–40 to +70	2.0*1	10	1310	1.0	1.0/1.0	with TEC
<b>NDL7401P/P1/P2</b>	I <sub>th</sub> +50	–40 to +85	–40 to +85	2.0	10	1310	1.3	0.5/0.5	with monitor PD
<b>NDL7408PL/P1L/P2L</b>	I <sub>th</sub> +50	–40 to +85	–40 to +85	0.2	10	1310	1.3	0.5/0.5	with monitor PD
<b>NDL7408PK/P1K/P2K</b>	I <sub>th</sub> +50	–40 to +85	–40 to +85	1.0	10	1310	1.3	0.5/0.5	with monitor PD
<b>NDL7800P*</b>	I <sub>th</sub> +50	–40 to +85	–40 to +85	0.2	5	1310	2.0	0.5/0.5	Ceramic mini DIL

\*1: TYP.

\*2: Under development

\*2: RMS (–20 dB)

## Fiber Optic Communication/Light Beam Application Devices

### Laser Diodes

#### ■ For Fiber Optic Communications (DFBLD)

Part number	Absolute maximum ratings				Typical characteristics				Remarks
	I <sub>F</sub> (mA)	P <sub>o</sub> / P <sub>f</sub> (mW)	T <sub>C</sub> (°C)	T <sub>stg</sub> (°C)	P <sub>o</sub> / P <sub>f</sub> (mW)	I <sub>th</sub> (mA)	λ <sub>p</sub> (nm)	t <sub>r</sub> / t <sub>f</sub> (ns)	
					MIN.	TYP.	TYP.	TYP.	
<b>NDL7603P/P1/P2</b>	150	5	-40 to +85	-40 to +85	2.0	50 <sup>*1</sup>	1310	0.5/0.5	with monitor PD
<b>NDL7620P/P1/P2</b>	150	5	0 to +70	-40 to +85	2.0	45 <sup>*1</sup>	1310	0.04/0.1	with monitor PD
<b>NDL7701P/P1/P2</b>	150	5	-20 to +85	-40 to +85	2.0	15	1550	0.5/0.5	with monitor PD
<b>NDL7705P/P1/P2</b>	I <sub>th</sub> + 50	5	-40 to +85	-40 to +85	2.0	50 <sup>*1</sup>	1550	0.5/0.5	with monitor PD
<b>NX8563LB</b>	300	–	-20 to +65	-40 to +85	10 <sup>*2</sup>	20	ITU-T <sup>*3</sup>	–	with PMF fiber
<b>NDL7910P</b>	150	20	-20 to +70	-40 to +85	0.5	7	1550 <sup>*4</sup>	0.125/ 0.125	Integrated Modulator for 2.5G

\*1: MAX.

\*2: TYP.

\*3: Wavelength selectable for ITU-T standards.

\*4: Wavelength selectable for ITU-T standards upon request.



## Fiber Optic Communication/Light Beam Application Devices

### Laser Diodes

#### ■ For Analog Applications

Part number	Absolute maximum ratings				Typical characteristics (25°C)						Remarks
	I <sub>F</sub> (mA)	P <sub>F</sub> (mW)	T <sub>C</sub> (°C)	T <sub>stg</sub> (°C)	I <sub>th</sub> (mA)	P <sub>f</sub> (mW)	λ <sub>p</sub> (nm)	RIN (dB/Hz)	CSO (dBc)	CTB (dBc)	
					TYP.	MIN.	TYP.	TYP.	TYP.	TYP.	
<b>NDL7680P</b>	150	15	-20 to +65	-40 to +70	20	3	1310	-155	-55	-60	with monitor PD, isolator and TEC

## Fiber Optic Communication/Light Beam Application Devices

### Laser Diodes

#### ■ For EDFA Pumping and High Power OTDR Applications

Part number	Absolute maximum ratings			Typical characteristics						Remarks
	I <sub>F</sub> (mA)	T <sub>C</sub> (°C)	T <sub>stg</sub> (°C)	I <sub>th</sub> (mA)	I <sub>op</sub> (mA)	P <sub>o</sub> /P <sub>r</sub> (mW)	λ <sub>c</sub> (nm)	σ <sup>*1</sup> (nm)	t <sub>r</sub> /t <sub>f</sub> (ns)	
				TYP.	TYP.	TYP.	TYP.	MAX.	MAX.	
<b>NDL7540PA</b>	600	-20 to +70	-40 to +85	40	500	110	1480	8	–	with TEC, thermistor and m-PD
<b>NDL7542P</b>	600 <sup>*2</sup>	-20 to +65	-40 to +70	30	500 <sup>*2</sup>	80 <sup>*2</sup>	1480 <sup>*2</sup>	10	2/2	with TEC
<b>NDL7103</b>	1200 <sup>*2</sup>	-40 to +70	-55 to +125	35	1000 <sup>*2</sup>	320 <sup>*2</sup>	1310 <sup>*2</sup>	7	2/2	ø5.6 can
<b>NDL7113</b>	600 <sup>*2</sup>	-40 to +70	-55 to +125	20	400 <sup>*2</sup>	175 <sup>*2</sup>	1310 <sup>*2</sup>	10	1/1	ø5.6 can
<b>NDL7502P</b>	1200 <sup>*2</sup>	-20 to +65	-40 to +70	35	1000 <sup>*2</sup>	190 <sup>*2</sup>	1310 <sup>*2</sup>	10	2/2	with TEC
<b>NDL7503P/P1</b>	1200 <sup>*2</sup>	-20 to +60	-40 to +85	35	1000 <sup>*2</sup>	180 <sup>*2</sup>	1310 <sup>*2</sup>	10	2/2	
<b>NDL7510P</b>	600 <sup>*2</sup>	-20 to +65	-40 to +70	20	400 <sup>*2</sup>	55 <sup>*2</sup>	1310 <sup>*2</sup>	10	1/1	with TEC
<b>NDL7512P</b>	600 <sup>*2</sup>	-20 to +65	-40 to +70	20	400 <sup>*2</sup>	110 <sup>*2</sup>	1310 <sup>*2</sup>	10	1/1	with TEC
<b>NDL7513P/P1</b>	600 <sup>*2</sup>	-20 to +60	-40 to +85	20	400 <sup>*2</sup>	110 <sup>*2</sup>	1310 <sup>*2</sup>	10	1/1	
<b>NDL7514P/P1</b>	600 <sup>*2</sup>	-20 to +60	-40 to +85	20	400 <sup>*2</sup>	50 <sup>*2</sup>	1310 <sup>*2</sup>	10	1/1	
<b>NDL7515P/P1</b>	600	-20 to +60	-40 to +85	20	400 <sup>*2</sup>	30 <sup>*2</sup>	1310 <sup>*2</sup>	10	1/1	
<b>NDL7153</b>	1200 <sup>*2</sup>	-40 to +70	-55 to +125	45	1000 <sup>*2</sup>	240 <sup>*2</sup>	1550 <sup>*2</sup>	8	2/2	ø5.6 can
<b>NDL7163</b>	600 <sup>*2</sup>	-40 to +70	-55 to +125	30	400 <sup>*2</sup>	120 <sup>*2</sup>	1550 <sup>*2</sup>	10	1/1	ø5.6 can
<b>NDL7552P</b>	1200 <sup>*2</sup>	-20 to +65	-40 to +70	40	1000 <sup>*2</sup>	125 <sup>*2</sup>	1550 <sup>*2</sup>	10	2/2	with TEC
<b>NDL7553P/P1</b>	1200 <sup>*2</sup>	-20 to +60	-40 to +85	45	1000 <sup>*2</sup>	145 <sup>*2</sup>	1550 <sup>*2</sup>	10	2/2	
<b>NDL7560P</b>	600 <sup>*2</sup>	-20 to +65	-40 to +70	20	400 <sup>*2</sup>	30 <sup>*2</sup>	1550 <sup>*2</sup>	10	1/1	with TEC
<b>NDL7562P</b>	600 <sup>*2</sup>	-20 to +65	-40 to +70	40	400 <sup>*2</sup>	80 <sup>*2</sup>	1550 <sup>*2</sup>	10	1/1	with TEC
<b>NDL7563P/P1</b>	600 <sup>*2</sup>	-20 to +60	-40 to +85	40	400 <sup>*2</sup>	80 <sup>*2</sup>	1550 <sup>*2</sup>	10	1/1	
<b>NDL7564P/P1</b>	600 <sup>*2</sup>	-20 to +60	-40 to +85	40	400 <sup>*2</sup>	40 <sup>*2</sup>	1550 <sup>*2</sup>	10	1/1	
<b>NDL7565P/P1</b>	600	-20 to +60	-40 to +85	20	400	11	1310 <sup>*2</sup>	10	1/1	
<b>NDL7580P</b>	1200 <sup>*2</sup>	-20 to +65	-40 to +85	30	1000 <sup>*2</sup>	100 <sup>*2*3</sup>	1625	15	2/2	with TEC

\*1: RMS (-20 dB)

\*2: Pulse conditions; pulse width = 10 μs, duty = 1% (modules)  
pulse width = 1 μs, duty = 1% (ø5.6 can)

\*3: MIN.

## Fiber Optic Communication/Light Beam Application Devices

### Detectors

#### ■ PIN Photo Diodes

Part number	Absolute maximum ratings				Detecting area size ( $\mu\text{m}$ )	Typical characteristics								Package	Remarks
	$I_F$ (mA)	$I_R$ (mA)	$T_C$ ( $^{\circ}\text{C}$ )	$T_{\text{stg}}$ ( $^{\circ}\text{C}$ )		$I_D$ (nA)		$C_t$ (pF)		$S$ (A/W)		$f_c$ (GHz)			
						$V_R$ (V)	TYP.	$V_R$ (V)	TYP.	$\lambda$ (nm)	TYP.		MIN.		
NDL5471RC/RD	10	0.5	-40 to +85	-40 to +85	$\phi 120$	5	0.1	5	1.1	1300	0.89	1.5	Receptacle package	RC: FC type receptacle module RD: SC type receptacle module	
										1550	1.00				
NDL5461P/P1/P2	10	-	-40 to +85	-40 to +85	$\phi 80$	5	0.1	5	1.0	1300	0.89	2.5	Coaxial module (With MMF)	P: Without flange P1: With flat mount flange P2: With vertical flange	
										1550	0.94				
NDL5481P/P1/P2	10	-	-40 to +85	-40 to +85	$\phi 80$	10	0.1	10	0.7	1300	0.85	2.5	Coaxial module (With SMF)	for analog applications P: Without flange P1: With flat mount flange P2: With vertical flange	
NDL5421P/P1/P2	10	0.5	-40 to +85	-40 to +85	$\phi 50$	5	0.1	5	0.7	1300	0.89	2.5	Coaxial module (With MMF)	P: Without flange P1: With flat mount flange P2: With vertical flange	
										1550	0.94				
NDL5422P	-	0.5	-40 to +70	-40 to +85	$\phi 50$	5	0.1	-	-	-	-	2.5	BFY Package (6-pin) (With MMF)	With Pre-AMP P = -23 dBm typ. 2.5 Gb/s	

## Fiber Optic Communication/Light Beam Application Devices

## Detectors

## ■ Avalanche Photo Diodes

Type	Part number	Absolute maximum ratings				Detecting area size ( $\mu\text{m}$ )	Typical characteristics								Package	Remarks
		I <sub>F</sub> (mA)	I <sub>R</sub> (mA)	T <sub>C</sub> (°C)	T <sub>stg</sub> (°C)		V <sub>(BR)R</sub> (V)	I <sub>D</sub> (nA)		S (A/W)		M	f <sub>c</sub> (GHz)	t <sub>r</sub> / t <sub>f</sub> (ns)		
								TYP.	V <sub>R</sub> (V)	TYP.	$\lambda$ (nm)					
InGaAs-APD	NDL5510	10	0.5	-40 to +70	-55 to +100	ø80	75	V <sub>(BR)R</sub> ×0.9	8	1300 0.89 1550 1.00	40	0.7	-	CAN Package		
	NDL5510C	10	0.5	-40 to +70	-55 to +100	ø80	75	V <sub>(BR)R</sub> ×0.9	8	1300 0.89 1550 1.00	40	0.7	-	Chip on carrier		
	NDL5500	10	0.5	-40 to +70	-55 to +100	ø50	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.89 1550 1.00	40	1.0	-	CAN Package		
	NDL5500C	10	0.5	-40 to +70	-55 to +100	ø50	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.89 1550 1.00	40	1.0	-	Chip on carrier		
	NDL5520C	10	0.5	-40 to +70	-55 to +100	ø50	55	V <sub>(BR)R</sub> ×0.9	5	1300 0.89 1550 1.00	40	2.5	-	Chip on carrier	for 2.5 Gb/s (ø50)	
	NDL5530	10	0.5	-40 to +85	-55 to +100	ø30	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.94 1550 0.96	40	2.5	-	CAN Package		
	NDL5530C	10	0.5	-40 to +85	-55 to +100	ø30	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.94 1550 0.96	40	1.0	-	Chip on carrier		
	NDL5531P /P1/P2	10	0.5	-40 to +85	-40 to +85	ø30	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.94 1550 0.96	40	2.5	-	Coaxial Module	P: Without flange P1: With flat mount flange P2: With vertical flange	
	NDL5561P /P1/P2	10	0.5	-40 to +85	-40 to +85	ø80	75	V <sub>(BR)R</sub> ×0.9	8	1300 0.94 1550 0.96	40	1.0	-	Coaxial Module (With MMF GI-62.5)	P: Without flange P1: With flat mount flange P2: With vertical flange	
	NDL5551P /P1/P2	10	0.5	-40 to +85	-40 to +85	ø50	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.94 1550 0.96	40	1.0	-	Coaxial module (With MMF)	P: Without flange P1: With flat mount flange P2: With vertical flange	
	NDL5521P /P1/P2	10	0.5	-40 to +85	-40 to +85	ø50	55	V <sub>(BR)R</sub> ×0.9	5	1300 0.94 1550 0.96	40	2.5	-	Coaxial module (With MMF)	for 2.5 G Applications P: Without flange P1: With flat mount flange P2: With vertical flange	
	NDL5553P /P1/P2	10	0.5	-40 to +85	-40 to +85	ø50	70	M = 20	50	1300 0.89 1550 0.94	20*1	-	0.5*2	Coaxial module (With MMF)	for OTDR Applications P: Without flange P1: With flat mount flange P2: With vertical flange	
	NDL5516P	10	0.5	-20 to +55	-40 to +85	ø80	75	V <sub>(BR)R</sub> ×0.9 I <sub>C</sub> =1.1A@55°C	2	1300 0.89 1550 1.00	40	0.7	-	DIP module (With MMF GI-62.5)	for OTDR Applications With TEC $\Delta T \geq 45K$	
	NDL5506P /PS	10	0.5	-20 to +55	-40 to +85	ø50	70	V <sub>(BR)R</sub> ×0.9 I <sub>C</sub> =1.1A@55°C	2	1300 0.89 1550 1.00	40	1.0	-	DIP module	for OTDR Applications With TEC $\Delta T \geq 45K$ P: With MMF, PS: With SMF	
	NDL5590P /P1/P2	-	0.5	-40 to +85	-40 to +85	ø50	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.94 1550 0.96	-	1.0	-	Coaxial module (With MMF)	With Pre-AMP $\bar{P} = -36$ dBm typ. 622 Mb/s P: Without flange P1: With flat mount flange P2: With vertical flange	
	NDL5592P /P1/P2	-	0.5	-40 to +85	-40 to +85	ø30	70	V <sub>(BR)R</sub> ×0.9	5	1300 0.94 1550 0.96	-	2.5	-	Coaxial module (With SMF)	With Pre-AMP $\bar{P} = -33$ dBm typ. 2.488 Gb/s P: Without flange P1: With flat mount flange P2: With vertical flange	
NDL5522P	-	0.5	-40 to +70	-40 to +85	ø50	55	V <sub>(BR)R</sub> ×0.9	5	-	-	2.5	-	BFY Package (6-pin) (With MMF)	With Pre-AMP $\bar{P} = -33$ dBm typ. 2.5 Gb/s		

\*1: MIN.

\*2: MAX.

## Photo Detectors

### PIN Photo-diode

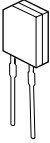
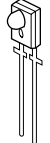
#### ■ PIN photo-diode for remote control application

Part number	Features	Absolute maximum ratings ( $T_A = 25\text{ }^\circ\text{C}$ )		Electrical characteristics ( $T_A = 25\text{ }^\circ\text{C}$ )			Package (package No.)
		$V_R$ (V)	$P_C$ (mW)	Sensitivity (nA/lx) ( $V_R = 5\text{ V}$ )	$I_D$ (nA) ( $V_R = 10\text{ V}$ )	$t_r$ (ns) ( $R_L = 1\text{ k}\Omega$ )	
<b>PH302</b>	Mold case	32	150	$50^{*1}$ ( $6\text{ }\mu\text{A}$ ) <sup>*2</sup>	~ 30	50	P10
<b>PH302C</b>	Mold case Visible ray cut filter	32	150	$32^{*1}$ ( $5\text{ }\mu\text{A}$ ) <sup>*2</sup>	~ 30	50	P10
<b>PH310</b>	Small mold case with lens Visible ray cut resin	32	150	$32^{*1}$ ( $5\text{ }\mu\text{A}$ ) <sup>*2</sup>	~ 10	30	P13
<b>PH320</b>	Small mold case with lens Visible ray cut resin	32	150	$4.3\text{ }\mu\text{A}$ <sup>*2</sup>	~ 10	30	P13

\*1: Light source color temperature 2854K

\*2: Sensitivity (@ $H = 0.1\text{ mW/cm}^2$ ) for infrared ray ( $\lambda_P = 940\text{ nm}$ )

#### Package (package appearance)

Package		
Package No.	P10	P13

## Photo Detectors

### Light Receiving IC

#### ■ Photo-diode with built-in amplifier for Optical Storage (Custom device)

Part number	Absolute maximum ratings (TA = 25 °C)				Light-electrical typical characteristics (TA = 25 °C)						Remarks
	V <sub>CC</sub> (V)	I <sub>CC</sub> (mA)	P <sub>D</sub> (mW)	T <sub>stg</sub> (°C)	V <sub>CC</sub> (V)	V <sub>O</sub>		S		f <sub>r</sub>	
						Focus (mV)	Tracking (mV)	λ (nm)	(A/W)	(MHz)	
						TYP.	TYP.		TYP.	TYP.	
<b>PH5xx*</b>	9	–	100	–25 to +80	5	350	550	650	–	50	With internal amplifier

\*: Under development

## Photocoupler

## ■ General-purpose Tr. Photocoupler

Part number	Features	BV <sub>1-2</sub>	I <sub>F</sub> (mA)	V <sub>CEO</sub> (V)	CTR (%)	Package	Remarks
PS2501-1 to -4	High isolation voltage	5 kVr.m.s.	80	80	80 to 600	• 4- to 16-pin DIP (multi)	Single transistor output
PS2502-1 to -4				40	200 ~		Darlington transistor output
PS2503-1 to -4			50	40	100 to 400		Single transistor output
PS2505-1 to -4			±80	80	80 to 600		AC input Single transistor output
PS2506-1 to -4				40	200 ~		AC input Darlington transistor output
PS2521-1 to -4	High isolation voltage Large current input	5 kVr.m.s.	150	80	20 to 80	• 4-pin DIP	Single transistor
PS2525-1 to -4			±150				Darlington transistor
PS2532-1 to -4	High isolation voltage ( VDE0884 ) Option )	5 kVr.m.s. ( 3.75 ) kVr.m.s.)	80	300	1500 to 6500	• 4- to 16-pin DIP (multi)	Darlington transistor
PS2533-1 to -4				350	1500 to 6500		Single transistor
PS2561-1 to -2				80	80 to 400		Darlington transistor
PS2562-1 to -2			±80		200 ~		Single transistor
PS2565-1 to -2				80 to 400	Single transistor		
PS2566-1 to -2			200 ~	Darlington transistor			
PS2581L1/L2	High isolation voltage Long creepage type (8 mm) ( VDE0884 ) Standard )	5 kVr.m.s.	80	80	80 to 400	• 4-pin DIP	Single transistor
PS2601	High isolation voltage	5 kVr.m.s.	80	80	80 to 600	• 6-pin DIP	Single transistor With base
PS2602							Single transistor Without base
PS2603				40	200 ~		Darlington transistor With base
PS2604							Darlington transistor Without base
PS2605			±80	80	80 to 600		AC input Single transistor With base
PS2606							AC input Single transistor Without base
PS2607			40	200 ~	AC input Darlington transistor With base		
PS2608					AC input Darlington transistor Without base		
PS2621	High isolation voltage Large current input	5 kVr.m.s.	150	80	20 to 50	• 6-pin DIP	Single transistor With base
PS2622							Single transistor Without base
PS2625			±150				AC input Single transistor With base
PS2626							AC input Single transistor Without base
PS2633	High isolation voltage High V <sub>CEO</sub>	5 kVr.m.s.	80	300	1000 to 15000	Darlington transistor With base	
PS2634				Darlington transistor Without base			
PS2651	High isolation voltage ( VDE0884 ) Option )	5 kVr.m.s.	80	80	50 to 400	• 6-pin DIP (lead forming)	Single transistor With base
PS2652							Single transistor Without base
PS2653			40	200 ~	Darlington transistor With base		
PS2654					Darlington transistor Without base		

## Photocoupler

## ■ SOP Photocoupler

Part number	Features	BV <sub>1-2</sub>	I <sub>F</sub> (mA)	V <sub>CEO</sub> (V)	CTR (%)	Package	Remarks			
PS2701-1,-2,-4	High isolation voltage	3.75 kVr.m.s.	50	40	50 to 300	• SOP (2.54 mm pitch)	Single transistor			
PS2702-1,-2,-4					200 ~		Darlington transistor			
PS2703-1,-2,-4					50 to 400		Single transistor			
PS2705-1,-2,-4			±50	40	50 to 300		AC input, Single transistor			
PS2706-1,-2,-4					200 ~		AC input, Darlington transistor			
PS2707-1,-2,-4					50 to 400		AC input, Single transistor			
PS2732-1,-2,-4	High isolation voltage High V <sub>CEO</sub> (VDE0884) (Option)		50	300	1500 to 6500		Darlington transistor			
PS2733-1,-2,-4				350						
PS2801-1	High isolation voltage	2.5 kVr.m.s.	50	80	80 to 600	• SOP (1.27 mm pitch)	Single transistor			
PS2802-1				40	200 ~		Darlington transistor			
PS2805-1			±50	80	80 to 600		AC input, Single transistor			
PS2806-1			50	40	200 ~		AC input, Darlington transistor			
PS2801-4					80		80 to 600	Single transistor		
PS2802-4					40		200 ~	Darlington transistor		
PS2805-4					±50		80	80 to 600	AC input, Single transistor	
PS2806-4			50	40	200 ~		AC input, Darlington transistor			
PS2832-1*			High V <sub>CEO</sub>		50		300	400 ~		Darlington transistor

★: Under development



## Photocoupler

### ■ High Speed Photocoupler

Part number	Features	BV <sub>1-2</sub>	I <sub>F</sub> (mA)	V <sub>CC</sub> (V)	CTR (%)	Package	Remarks
<b>PS8701</b>	High speed 1 Mbps High CMR 10 kV/μs	2.5 kVr.m.s.	25	35	15 ~	• 5-pin SOP	Photodiode + transistor
<b>PS8601</b>	High speed 1 Mbps (VDE0884) Option	5 kVr.m.s.			15 ~	• 8-pin DIP	Photodiode + transistor with base
<b>PS8602</b>							Photodiode + transistor

**Photocoupler****■ Analog Linear Photocoupler**

Part number	Features	BV <sub>1-2</sub>	I <sub>F</sub> (mA)	V <sub>R</sub> (V)	ΔK <sub>3</sub> (%)	Package	Remarks
<b>PS8741</b> *	High linearity	1.5 kVr.m.s.	50	20	~ 1	• 16-pin SOP	for optical DAA

\*: Under development

## Photocoupler

### ■ High Speed Photocoupler

Part number	Features	BV <sub>1-2</sub>	I <sub>F</sub> (mA)	V <sub>CC</sub> (V)	t <sub>PHL</sub> , t <sub>PLH</sub> (ns)	Package	Remarks
<b>PS9601</b>	High speed 10 Mbps (IC output)	5 kVr.m.s.	30	7	50 (TYP.)	• 8-pin DIP	
<b>PS9701</b>	High speed 10 Mbps (IC output) ( VDE0884 ) ( Option )	2.5 kVr.m.s.			50 (TYP.)	• 5-pin SOP	
<b>PS9611</b> *	High CMR					• 8-pin DIP	CMR 10 kV/μs
<b>PS9711</b> *	High speed 10 Mbps			• 5-pin SOP			

\*: Under development

**Photocoupler****■ Inverter Control Photocoupler**

Part number	Features	BV1-2	I <sub>F</sub> (mA)	V <sub>CC</sub> (V)	I <sub>o2</sub> (A)	Package	Remarks
<b>PS9634</b>	High output, high noise immunity ( VDE0884 ) ( Option )	5 kVr.m.s.	30	18	0.8	• 8-pin DIP	Built-in amplifier

## OCMOS FET™

## ■ OCMOS FET

Part number	Features	V <sub>I-o</sub> (V)	V <sub>L</sub> (V)	I <sub>L</sub> (mA)	R <sub>on</sub> (Ω)	Package	Remarks		
PS7112-1A	General use	1500	100	200	6	6-pin DIP (1-ch)			
PS7113-1A			100	350	2.5				
PS7122-1A			200	200	5				
PS7122A-1A			250	200	8				
PS7122A-1B			250	200	8			1b output	
PS7141-1A			400	150	30				
PS7141-1B			400	150	30			1b output	
PS7142-1A			400	150	10				
PS7160-1A			600	90	50				
PS7111-2A			100	100	6			8-pin DIP (2-ch)	
PS7113-2A			100	350	2.5				
PS7122-2A			200	200	5				
PS7122A-2A			250	200	8				
PS7122A-2B			250	200	8	1b + 1b output			
PS7122A-1C			250	200	8	1a + 1b output			
PS7141-2A			400	150	30				
PS7141-2B			400	150	30	1b + 1b output			
PS7141-1C			400	150	30	1a + 1b output			
PS7142-2A			400	200	12	1a + 1a output			
PS7160-2A			600	90	50				
PS7200A-1A					40	100	12	4-pin SOP (1-ch)	Low capacitance 2.9 pF
PS7200B-1A					40	250	1.5		Low on-state resistance
PS7241-1A					400	120	35		1b output
PS7241-1B					400	120	35		
PS7211-2A					100	100	6	8-pin SOP (2-ch)	
PS7221-2A					200	120	8		
PS7241-2A			400	120	30				
PS7241-2B			400	120	30	1b + 1b output			
PS7241-1C			400	120	30	1a + 1b output			
PS7341-1A			400	150	30	6-pin DIP (1-ch)			
PS7342-1A			400	200	10				
PS7360-1A			600	90	50				
PS7341C-1A			400	150	35			Current limit I <sub>LMT</sub> 170 to 250 mA	
PS7342C-1A			400	200	20				
PS7522-1A	Slow speed	1500	200	200	5	6-pin DIP			
PS7522-2A			200	200	5	8-pin DIP			
PS7241-AT1	Multi function	1500	200	120	30	8-pin SOP (2-ch)	OCMOS FET + photocoupler		
PS7241-AT5			200	120	30				
PS7841-A15*			400	120	30			16-pin SOP	for DAA

\*: Under development

**POF Link**

## ■ POF Link

Part number	Absolute maximum rating (T <sub>c</sub> = 25 °C)		Electrical characteristics (T <sub>c</sub> = 25 °C)		
	V <sub>CC</sub> (V)	T <sub>c</sub> (°C)	Transmission speed (bps)	Transmission distance (m)	
				@SI-POF	@SI-HPCF
<b>NL2100</b>	0 to 6	0 to 70	156	50	100

## Infra-Red Link Unit

### ■ Infra-Red Link Unit (Conform to IrDA Ver. 1.1/1.0)

Part number	Absolute maximum rating (T <sub>A</sub> = 25 °C)		Electrical characteristics (T <sub>A</sub> = 25 °C)			Remarks
	V <sub>CC</sub> (V)	T <sub>opt</sub> (°C)	Data rate (bps)	Transmission distance (m)	Viewing angle (deg.)	
<b>NL1100</b>	5	0 to +70	2.4 k to 4 M	~ 1.0	30	IrDA 1.1
<b>NL1000*</b>	3	0 to +70	2.4 k to 115.2 k	~ 1.0	30	IrDA 1.0

\*: Under development