

# Photo Detectors/Photo Couplers

## ■ PIN Photodiodes (for AF, CD, VD, Optical Communications, Control and Space Transmission)

Applications	Type No.	Package		V <sub>R</sub> (V)	I <sub>0</sub> max (nA)	I <sub>L</sub> min (μA)	λ <sub>p</sub> typ (nm)	t <sub>r</sub> , t <sub>f</sub> typ (ns)	θ typ (deg.)
		Construction	No.						
For AF	PN3206	Flat (Clear) 2 divisions	PFOS04-2	12	10	2	900	10	65
	PN312D(N)	Flat (Visible light cut) 2 divisions	PFES04-1N	30	20	8	940	10	65
	PN322D	Flat (Visible light cut) 2 divisions	PFOS04-2N	30	10	3	940	10	65
	PN3112	Flat (Visible light cut) PSD	PFOS04-2N	30	2	16	940	12 μ	65
	PN3108	Flat (Visible light cut) PSD	PFOS04-2	30	2	7	940	5 μ	65
	PNA3201F	Flat (Clear)	PFES04-3	30	2.0	22	900	12	—
For CD, VD	PN3405	Flat (Clear) 4 divisions	PFOS06-1	30	10	8	900	20	65
	PN316K2	Flat (Clear) 6 divisions	PFES08-4	30	1	0.1	900	3	65
	PN3116	Flat (Clear) 6 divisions	PFES02-1	30	10	typ 40	900	30	65
	PN3624K	Flat (Clear) chip slope 6 divisions	PFES08-1	30	10	0.1, 0.8	850	3	65
For PF	PN330CL	TO-18 (Resin mold)	MR02-1	30	10	7	850	2	70
	PN334	5 φ Plastic	PF5F02-3	30	10	5	850	2	30
	PN335	Side view	PSF02-1	30	10	5	850	2	70
For GF	PN331F	TO-18* (Flat can)	MF03-1	30	10	4	900	2	40
	PN331CL	TO-18* (3 lead)	MR03-1	30	50	10	900	50MHz	70
	PN332F	TO-18* (Flat can)	MF03-1	30	1	4	850	1	40
For control	PN300	TO-18* (Lens can)	ML02-1	50	10	30	800	1	10
	PN300F	TO-18* (Flat can)	MF02-1	50	10	5	800	1	40
	PN303	TO-39 (Flat can)	MF02-2	30	50	50	900	50	55
	PN307	Double end	PD002-1	30	40	5	800	—	24
	PN313	Side view (Visible light cut)	PSF02-2N	30	50	35	900	50	65
	PN313B	Side view (Responds to IR88)	PSF02-2N	30	50	15	960	50	65
	PN327	TO-92	PT002-1	30	50	70	900	50	70
	PN323	TO-92 (Responds to IR88)	PT002-1N	30	50	typ 55	900	50	70
	PN323B	TO-92 (Responds to IR88)	PT002-1N	30	50	15	960	50	70
	PN328B	TO-92 (Responds to IR88)	PT002-1N	30	50	15	960	50	70
①	▲ PNA3601M	Side view (Visible light cut)	PSLS2-4	30	20	40	940	30	30

① 1. For space transmission \*With shield pin, "For PF" is for Plastic Fiber, "For GF" is for Glass Fiber. ▲Under development

## ■ Photo ICs

Type No.	Package	No.	V <sub>CC</sub> (V)	P <sub>D</sub> (mW)	I <sub>CC</sub> (mA)	A (V/mW)	λ	Alin (%)	P <sub>dc</sub> (lx)	V <sub>on</sub> (mVrms)
PN7103	Side view	PSF03-1	15	100	1.4	180	700	-10 ~ +10 P <sub>max</sub> = 0.1 to 4μW	4000	1.0

Type No.	Package Features - applications	No.	V <sub>CC</sub> (V)	I <sub>CC</sub> (mA)	L (m)	f <sub>o</sub> (kHz)	θ (deg.)
PNA4601M	Side view	PSLS3-3	5.0	2.3	10	36.7	43
PNA4602M	Side view	PSLS3-3	5.0	2.3	10	38.0	43
PNA4605M	Side view	PSLS3-3	5.0	2.3	10	40.0	43
PNA4608M	Side view	PSLS3-3	5.0	2.3	10	56.9	43
PNA4603H	Brightness adjustment	PSLS3-5	5 typ	1.0 typ	(V <sub>off</sub> ) 0.5 typ	(n) 1.9V typ	(λ typ) 540nm
△ PNA4610M	Remote control light receiving section driven on 5V	PSLS3-3	5 typ	2.3	18	33	43
PNA4611M	Remote control light receiving section driven on 5V	PSLS3-3	5 typ	2.3	18	36.7	43
PNA4612M	Remote control light receiving section driven on 5V	PSLS3-3	5 typ	2.3	18	38	43
△ PNA4613M	Remote control light receiving section driven on 5V	PSLS3-3	5 typ	2.3	18	40	43
PNA4614M	Remote control light receiving section driven on 5V	PSLS3-3	5 typ	2.3	18	56.9	43

△ Tentative

## ■ Photo ICs (Continued)

Type No.	Package	No.	V <sub>CC</sub> (V)	P <sub>D</sub> (mW)	I <sub>CC</sub> typ (mA)	V <sub>off</sub> (mV)	ΔV <sub>off</sub> (mV)	f <sub>c</sub> typ (MHz)	λ p typ (nm)
△ PNA4211F	4*5 FLAT 10 pin	PFES 10-2	6	115	2.2	±20	±20	8.0	900

△ Tentative

## ■ Phototransistors

Type No.	Package	No.	V <sub>CE</sub> (V)	L (lx)	I <sub>CE(L)</sub> min (mA)	I <sub>CEO</sub> max (μA)	θ typ (deg.)
PN101/102*	TO-18	ML02-1/ML03-1	30	100	1.5	0.3	10
PN101F/102F*	TO-18	MF02-1/MF03-2	30	100	0.1	0.3	40
PN106*	TO-18	ML03-1	30	100	0.3	0.1	10
PN107/108*	TO-18	ML02-1/ML03-1	20	100	5	2	10
PN107F/108F*	TO-18	MF02-1/MF03-2	20	100	0.4	2	40
PN108CL*	TO-18 (Small)	MR03-2	20	500	3.5	2	80
PN109L*	TO-18 (Visible light cut)	ML03-1	20	100	3.5	2	10
PN109F*	TO-18 (Visible light cut)	MF03-2	20	100	0.3	2	40
PN109CL	TO-18 (Visible light cut)	MR03-2	20	500	2.5	0.05	80
PN110*	5 φ Ceramic	C503-1	20	500	0.8	1	80
PN111W*	5 φ Ceramic	C503-1	20	500	4.5	2	80
PN115*	Side view	PSLS3-1	20	100	1.5	2	35
PN116*	Side view	PSF03-1	20	100	0.2	2	70
PN120S	3 φ Plastic	C302-1	30	2	3 μA	0.5	50
PN121S	3 φ Plastic	C302-1	20	1000	0.12	0.1	30
PN123S	3 φ Plastic	C302-1	20	1000	0.4	0.1	30
PN126S	3 φ Plastic	C302-1	20	1000	1.05	0.1	30
PN127	Double end	PD002-1	20	1000	0.80	0.1	14
PN147	Double end	PD002-1	20	2	3 μA	0.5	24
PN150/L	Side view	PSLS2-2	20	500	1	1	35
PN154	Side view	PSLS2-1	20	500	1	1	27
PN155	Side view	PSF02-1	20	100	0.05	1	70
PN158	Side view	PSLS2-3	20	500	1	1	40
PN163(NC)	Side view	PSLS2-7N	20	—	—	0.2	25
PN166	Side view	PSLS2-6N	20	—	—	0.2	35
PN168	3 φ Plastic	P3002-1	30	500	0.8	0.5	30
PN202S	3 φ Plastic	C302-1	20	2	0.2	0.5	30
PN205/L(NC)	Side view	PSLS2-2/PSLS2-4N	20	2	0.2	0.5	35
PN207	Double end	PD002-1	20	2	0.5	0.5	18
PN208	Side view	PSLS2-3	20	2	0.2	0.5	40
PN268-(NC)	3 φ Plastic	P3002-1N	20	2	0.05	0.5	30
PN263L-(NC)	Side view	PSLS2-5N	20	—	—	0.5	25

\*With Base Pin ○Darlington Transistor

## ■ Photosensor Units

Type No.	Package No.	Character	Output ON Condition	V <sub>CC</sub> (V)	I <sub>0</sub> (mA)	V <sub>0</sub> (V)	V <sub>0</sub> max (V)
ON1501	U03-1	Gap width 5mm, Depth 11mm, Open-collector, output, High resolution	At Object undetection	24	50	40	0.6
ON1503	U04-1	Gap width 3.6mm, Depth 10mm, Open-collector output, High resolution	At detection	5.10	100	20	0.6
ON1517HH (-A)	U03-2	Gap width 5mm, Depth 10mm, Open collector output, High resolution	At detection	5	20	30	0.4
ON2509	U03-4	Reflection type, Open-collector output, Plain paper, OHP Film, Second original paper detectable	At object undetection	5	10	24	0.4
ON2521LA (-A)	U03-5	Reflection type, Open-collector output, Detectable distance range is 2.5 to 7.5mm	At object undetection	5	10	24	0.4