

Photo Detectors/Photo Couplers

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

Applications	Type No.	Package Construction	No.	V _R (V)	I ₀ max. (nA)	I _L min. (μA)	λ _p typ. (nm)	t _r , t _f typ. (ns)	θ typ. (deg)
For AF	PN312E	Flat (Clear) 2 division	PF204-3	30	10	7	900	10	65
	PN3104	Flat (Clear) PSD	PF004-5	30	2	22	940	8 μ	65
	PN3106(N)	Flat (Clear) PSD	PF004-5	30	2	13	940	5 μ	—
	PN3206	Flat (Clear) 2 division	PF204-2	12	10	2	900	10	65
	PN312D(N)	Flat (Visible light cut) 2 division	PF204-4	30	20	8	940	10	65
	PN322D	Flat (Visible light cut) 2 division	PF204-1	30	10	3	940	10	65
	PN3105	Flat (Visible light cut) PSD	PF004-3	30	2	14	940	8 μ	65
	PN3112	Flat (Visible light cut) PSD	PF004-3	30	2	16	940	12 μ	65
	PN3108	Flat (Clear) PSD	PF004-4	30	2	7	940	5 μ	65
For CD, VD	PN3107(N)	Flat (Visible light cut) PSD	PF004-2	30	2	8	940	5 μ	65
	PN324E	Flat (Clear) 4 division	PF406-2	30	50	35	900	30	60
	PN3405	Flat (Clear) 4 division	PF406-1	30	10	8	900	20	65
	PN316K2	Flat (Clear) 6 division	PF608-4	30	1	0.1	900	3	65
	PN3116	Flat (Clear) 6 division	PSF02-3	30	10	typ. 40	900	30	65
	PN3624K	Flat (Clear) chip slope 6 division	PF608-3	30	10	0.1 _{0.8}	850	3	65
	PN3621K	Flat (Clear) chip slope 6 division	PF608-5	12	10	0.09 _{0.17}	940	5	65
For PF	PN3634	Flat (Clear) chip slope 6 division	PF608-6	12	2	0.08 _{0.6}	850	15	65
	PN330CL	TC-18 (Resin mold)	MF02-2	30	10	7	850	2	70
	PN334	5φ Plastic	PSF02-3	30	10	5	850	2	30
For GF	PN335	Side view	PSF02-1	30	10	5	850	2	70
	PN331F	TO-18* (Flat can)	MF03-1	30	10	4	900	2	40
For control	PN332F	TO-18* (Flat can)	MF03-1	30	1	4	850	1	40
	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)	PSF02-2	30	50	35	900	50	65
	PN313B	Side view (IR88 suitable)	PSF02-2	30	50	15	960	50	65
	PN327	TO-92	PT002-1	30	50	70	900	50	70
	PN323B	TO-92 (IR88 suitable)	PSF02-3	30	50	15	960	50	70
	PN328B	TO-92 (IR88 suitable)	PSF02-3	30	50	15	960	50	70
	PN331CL	TO-18* (3 lead)	MR03-1	30	50	10	900	50MHz	70

* With shielded pin, For PF = For Plastic Fiber. For GF = For Glass Fiber.

■ Phototransistors

Type No.	Package	No.	V _{CE} (V)	L (lx)	I _{CE(L)} min. (mA)	I _{CEO} 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*	5φ Ceramic	C503-1	20	500	0.8	1	80
PN111W*	5φ 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	3φ Ceramic	C302-1	30	2	3 μA	0.5	50
PN121S	3φ Ceramic	C302-1	20	1000	0.12	0.1	30
PN123S	3φ Ceramic	C302-1	20	1000	0.4	0.1	30
PN126S	3φ Ceramic	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	PSLS2-7	20	—	—	0.2	25
PN166	Side view	PSLS2-6	20	—	—	0.2	35
PN168	3φ Plastic	P3002-1	30	500	0.8	0.5	30
PN202S ⊙	3φ Ceramic	C302-1	20	2	0.2	0.5	30
PN205/L(NC) ⊙	Side view	PSLS2-2	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) ⊙	3φ Plastic	P3002-1	20	2	0.05	0.5	30

* With Base Pin ⊙ Darlington Transistor

■ Integrated Photosensors

Type No.	Package No.	V _{CC} (V)	V _{OL} (V)	I _{OH} (μA)	I _{FH} (mA)
ON1402A/B	IS5-1	4.5 ~ 16	0.25	100	5
ON1403A/B	I05-2	4.5 ~ 16	0.25	100	5
ON1413A/B	I05-1	4.5 ~ 16	0.14	100	4
ON1414A/B	I05-1	2.2 ~ 7	0.15	100	—

■ Photosensor Units

Type No.	Package No.	Characteristics	Output ON Condition	V _{CC} (V)	I ₀ (mA)	V ₀ (V)	V _{0L} max (V)
ON1501	U03-1	Gap width 5mm, Depth 11mm, Open-collector output, High resolution	Object un-detected	24	50	40	0.6
ON1503	U04-1	Gap width 3.6mm, Depth 10mm, Open-collector output, High resolution	Object detected	5.10	100	20	0.6
ON1517HH (A)	U03-2	Gap width 5mm, Depth 10mm, Open-collector output, High resolution	Detected	5	20	30	0.4
ON2509	U03-3	Reflection type, Open-collector output, Regulator paper, OHP film, second original detectable	Object un-detected	5	10	24	0.4
ON2521LA (A)	U03-5	Reflection type, Open-collector output, Detectable distance range = 2.5 ~ 7.5mm	Undetected	5	10	24	0.4

■ Photo ICs

Type No.	Package	No.	V _{CC} (V)	P _D (mW)	I ₀ max. (nA)	I _L min. (μA)	λ _p typ. (nm)	t _r , t _f typ. (μs)	θ typ. (deg)
PN7202-(LF)	Flat (Clear) 2 division	PF212-1	30	30	5	5	900	10	65

Type No.	Package	No.	V _{CC} (V)	P _D (mW)	I _{CC} (mA)	V ₀ (mV)	V ₀ (offset) (mV)	f _c (MHz)
PN7601	Flat (Clear) 6 division	PF406-1	6	80	3.5	360	15	3
PN7608	Flat (Clear) 6 division	PF406-1	3.4 ~ 5.5	100	1.3	300	-15 ~ +15	2.5

Type No.	Package	No.	V _{CC} (V)	P _D (mW)	I _{CC} (mA)	A (V/mW)	λ (nm)	Alin (%)	P _{dc} (lx)	V _{on} (mVrms)
PN7103	Side view	PSF03-2	15	100	1.4	180	700	-10 ~ +10 P _{ex} = 0.1 ~ 4 μW	4000	1.0

Type No.	Package	No.	V _{CC} (V)	I _{CC} (mA)	L (m)	f ₀ (kHz)	θ (deg)
PNA4601M	Side view	PFES05-1	5.0	2.3	10	36.7	43
PNA4602M	Side view	PFES05-1	5.0	2.3	10	38.0	43
PNA4604M	Side view	PFES05-1	5.0	2.3	10	56.9	43
PNA4606M	Side view	PFES05-1	5.0	2.3	10	40.0	43