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## Characteristics List

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### ■ Photodetector

# Photodetector

## ■ PIN Photodiode

Part No.	Absolute Maximum Ratings		Electro • Optical Characteristics $T_a = 25^\circ\text{C}$										Package	No.	Outline view
	$V_R$ (V)	$P_D$ (mW)	$V_R$ (V)	$I_D$ max. (nA)	$V_R$ (V)	L (lx)	$I_L$ min. ( $\mu\text{A}$ )	$\lambda_p$ typ. (nm)	$V_R$ (V)	$R_L$ ( $\Omega$ )	$t_r, t_f$ typ. (ns)	$\theta$ typ. (deg)			
PNA3W01L (PN307)	30	10		50			5		10	1000	50	24	Double end	O 36	
PNZ300 (PN300)	50			10	1000		30	800	20	50	1	10	TO-18 (Lens can)	O 01	
PNZ300F (PN300F)							5						40	TO-18 (Flat can)	O 03
PNZ313 (PN313)	30	100	10	50	5	$H = 0.1 \text{ mW/cm}^2$	35	940	10	1000	50	65	Side view (Flat package, Visible light cut)	O 33	
PNZ313B (PN313B)							15	960					Side view (Visible light cut, equal to IR88)		
PNZ323 (PN323)							$S_{IR} = 4.5$	900					TO-92 (Visible light cut)		
PNZ323B (PN323B)	$S_{IR} = 3.2$	970	TO-92 (Visible light cut, equal to IR88)	O 37											
PNZ327 (PN327)	$S_{IR} = 4.5$	900													
PNZ330CL (PN330CL)							7					70	TO-18 (Resin mold)	O 05	
PNZ334 (PN334)			10	10	1000			850	50	2			5 $\phi$ plastic (Flat package)	O 17	
PNZ335 (PN335)							5						Side view (Flat package)	O 32	

## ■ Photo IC

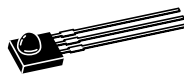
• for CD Pick up

Part No.	Absolute Maximum Ratings		Electro • Optical Characteristics $T_a = 25^\circ\text{C}$							Package	No.	Outline view
	$V_{CC}$ (V)	$P_C$ (mW)	$I_{CC}$ typ. (mA)	$V_{O(\text{offset})}$ (mV)	$V_O$ (mV) AD   EF	$\lambda$ (nm)	$f_C$ (MHz)	$\lambda$ (nm)	$\lambda_p$ (nm)			
PNC4271F (PN7611)	6	115	1.3	-15 ~ +15	300/660	780	2.5	780	900	Flat clear 6-division type Quadruple speed	O 77	


Note) Part numbers show the Matsushita unified part numbers. And the part numbers in parentheses show the conventional ones.

## ■ Photo IC (continued)



### • for Remote Control Receiver

Part No.	Absolute Maximum Ratings		Electro • Optical Characteristics $T_a = 25^\circ\text{C}$			Package	No.	Outline view
	$V_{CC}$ (V)	$P_D$ (mW)	$I_{CC}$ typ. (mA)	L typ. (m)	$f_O$ typ. (kHz)			
PNA4601M	5	200	2.4	10	36.7	Side view (standard sensitivity)	O 27	
PNA4602M					38.0			
PNA4611M				16	36.7	Side view (High sensitivity) Metal holder (option)		
PNA4612M					38.0			
PNA4613M					40.0			
PNA4614M					56.9			
PNA4701M	3.3	0.8	0.8	9	36.7	Side view (standard sensitivity)		
PNA4702M					38.0			
PNA4711M				15	36.7	Side view (High sensitivity) Metal holder (option)		
PNA4712M					38.0			
PNA4713M					40.0			
PNA4714M					56.9			

### • for Light Control

Part No.	Absolute Maximum Ratings		Electro • Optical Characteristics $T_a = 25^\circ\text{C}$					Package	No.	Outline view
	$V_{CC}$ (V)	$P_D$ (mW)	$I_{CC}$ typ. (mA)	$V_O$ ( $V_{CC} = 5.0\text{ V}$ 時)			$\lambda_P$ (nm)			
				L = 0 lx (V)	L = 10 lx (V)	L = 800 lx (V)				
PNA4603H	7	200	1.0	0.5	2.7	4.1	540	Side view	O 35	

### • for APC Amplifier with Integrated Photodetector (× 48)

Part No.	$V_{CC}$ typ. (V)	$I_{CC}$ max. (mA)	$V_O$ typ. (mV)	$V_{off}$ (mV)	$t_r, t_f$ typ. ( $\mu\text{s}$ )	$V_{OM}$ typ. (V)	Package	No.	Outline view
PNA4S51F	5.0	20	-190	$\pm 8$	5	-2.2	Small size (3.5 × 3.0 × 1.16 mm)	O 76	
PNA4S87F							Medium size (4.9 × 4.0 × 1.16 mm)	O 75	

Note) Part numbers show the Matsushita unified part numbers. And the part numbers in parentheses show the conventional ones.

# Photodetector

## ■ Phototransistor without Base Pin

Part No.	Absolute Maximum Ratings	Electro • Optical Characteristics $T_a = 25^\circ\text{C}$								Package	No.	Outline view	
	$V_{\text{CEO}}$ (V)	L (lx)	$I_{\text{CE(L)}}$ min. (mA)	$I_{\text{CE(L)}}$ typ. (mA)	$I_{\text{CEO}}$ max. ( $\mu\text{A}$ )	$V_{\text{CE(sat)}}$ max. (V)	$\lambda_p$ typ. (nm)	$t_r, t_f$ typ. ( $\mu\text{s}$ )	$\theta$ typ. (deg)				
LNA1101L (PN126S)	20	1000	1.05	2.56 max.	0.1	—	800	2.5/3.5	30	3 $\phi$ ceramic	O 07		
LNA1401L (PN101)	30	100	1.5	3.5	0.3	0.4		3	10	TO-18 (Lens can)	O 01		
PNA1401LF (PN101F)			0.1	0.3			TO-18 (Flat can)			O 03			
PNA1601M (PN166)	20	$H = 15 \mu\text{W}/\text{cm}^2$	$S_{\text{IR}} = 3 \mu\text{A}$	—	0.2	0.5	850	35	Side view (Thin type visible light cut)	O 24			
PNA1606L		500	1.0						—	27	Side view	O 18	
PNA1608L (PN150L)		$H = 15 \mu\text{W}/\text{cm}^2$	$S_{\text{IR}} = 16 \mu\text{A}$	—	0.5		800	4	35	Side view (Long lead)	O 29		
PNA1801L (PN168)		30	500							0.8	3	0.5	3 $\phi$ plastic
PNZ107 (PN107)	20	100	5	15 max.	2	0.6	900	5/6	10	TO-18 (Lens can) High sensitivity	O 01		
PNZ107F (PN107F)			0.4	4 max.				8/9	40	TO-18 (Flat can) High sensitivity	O 03		
PNZ120S (PN120S)	30	2	$3 \mu\text{A}$	0.2	0.5	0.5	800	8	50				
		500	—	6									—
PNZ121S (PN121S)	20	1000	0.12	0.28 max.	0.1	—	800	1/1.3	30	3 $\phi$ ceramic	O 07		
PNZ123S (PN123S)			0.4	0.7 max.				3.5/5					
PNZ127 (PN127)			0.8	19.2 max.	2.5/3.5	14		Double end	O 36				
PNZ147 (PN147)			2	$3 \mu\text{A}$	$12 \mu\text{A}$	3					24		
PNZ150 (PN150)			500	1	3	1		0.5	4	35	Side view	O 20	
PNZ154 (PN154)			4	27	Side view (Thin type, Narrow beam angle)	O 18							
PNZ155 (PN155)	100	0.05	0.2	1	70	Side view (Flat package)	O 32						

Note) Part numbers show the Matsushita unified part numbers. And the part numbers in parentheses show the conventional ones.

## ■ Phototransistor without Base Pin (continued)

Part No.	Absolute Maximum Ratings		Electro • Optical Characteristics $T_a = 25^\circ\text{C}$								Package	No.	Outline view
	$V_{\text{CEO}}$ (V)		$I_{\text{CE(L)}}$ min. (mA)	$I_{\text{CE(L)}}$ typ. (mA)	$I_{\text{CEO}}$ max. ( $\mu\text{A}$ )	$V_{\text{CE(sat)}}$ max. (V)	$\lambda_p$ typ. (nm)	$t_r, t_f$ typ. ( $\mu\text{s}$ )	$\theta$ typ. (deg)				
PNZ158 (PN158)	20		500	1	4	1	0.5	800	4	40	Side view (Thin type)	O 19	
PNZ163NC (PN163-(NC))			$H = 15 \mu\text{W}/\text{cm}^2$	$S_{\text{IR}} = 6 \mu\text{A}$	$S_{\text{IR}} = 15 \mu\text{A}$	0.2		850		25	Side view (Small size visible light cut)	O 25	





## ■ Phototransistor with Base Pin

Part No.	Absolute Maximum Ratings		Electro • Optical Characteristics $T_a = 25^\circ\text{C}$								Package	No.	Outline view	
	$V_{\text{CEO}}$ (V)	$V_{\text{CBO}}$ (V)	$I_{\text{CE(L)}}$ min. (mA)	$I_{\text{CE(L)}}$ typ. (mA)	$I_{\text{CEO}}$ max. ( $\mu\text{A}$ )	$V_{\text{CE(sat)}}$ max. (V)	$\lambda_p$ typ. (nm)	$t_r, t_f$ typ. ( $\mu\text{s}$ )	$\theta$ typ. (deg)					
PNA1605F (PN116)	20	30	100	0.2	0.8	2	0.6	900	8/9	70	Side view (Flat Package)	O 34		
PNZ102 (PN102)	30	40		1.5	3.5	0.3	0.4	800	3	10	TO-18 (Lens can)	O 02		
PNZ102F (PN102F)				0.1	0.3					40	TO-18 (Flat can)	O 04		
PNZ106 (PN106)	20	30		0.3	0.6	0.1	0.6	900	3.5/5	10	TO-18 (Lens can)	O 02		
PNZ108 (PN108)				5	15 max.	TO-18 (Lens can) High sensitivity								
PNZ108CL (PN108CL)				500	3.5	6				TO-18 (Resin mold) High sensitivity	O 06			
PNZ108F (PN108F)				100	0.4	4 max.				TO-18 (Flat can) High sensitivity	O 04			
PNZ109CL (PN109CL)	20	30		500	2.5	4	2	0.6	900	5/6	80	TO-18 (Resin mold, Visible light cut)	O 06	
PNZ109F (PN109F)				8/9	40	TO-18 (Flat can, Visible light cut)					O 04			
PNZ109L (PN109L)				100	3.5	—				10	TO-18 (Lens can, Visible light cut)	O 02		
PNZ115 (PN115)			2		4.5						5/6	35	Side view	O 26

Note) Part numbers show the Matsushita unified part numbers. And the part numbers in parentheses show the conventional ones.

# Photodetector

## ■ Darlington Phototransistor

Part No.	Absolute Maximum Ratings	Electro • Optical Characteristics $T_a = 25^\circ\text{C}$								Package	No.	Outline view
	$V_{\text{CEO}}$ (V)	L (lx)	$I_{\text{CE(L)}}$ min. (mA)	$I_{\text{CE(L)}}$ typ. (mA)	$I_{\text{CEO}}$ max. ( $\mu\text{A}$ )	$V_{\text{CE(sat)}}$ max. (V)	$\lambda_p$ typ. (nm)	$t_r, t_f$ typ. ( $\mu\text{s}$ )	$\theta$ typ. (deg)			
PNA2602M (PN205-(NC))	20	$H = 3.75 \mu\text{W}/\text{cm}^2$	$S_{\text{IR}} = 0.1$	$S_{\text{IR}} = 1.5$	0.5	1.5	850	150	35	Side view (Long lead, Small visible light cut)	O 30	
PNA2803M (PN268-(NC))			0.05	1.5 max.					30	3 $\phi$ visible light cut	O 10	
PNA2W01M (PN207)		2	0.5	3			800	200	18	Double end	O 36	
PNZ202S (PN202S)			0.2	1.5 max.			150	30	3 $\phi$ ceramic	O 07		
PNZ263L (PN263L-(NC))			$H = 3.75 \mu\text{W}/\text{cm}^2$	$S_{\text{IR}} = 60 \mu\text{A}$								$S_{\text{IR}} = 200 \mu\text{A}$

Note) Part numbers show the Matsushita unified part numbers. And the part numbers in parentheses show the conventional ones.