

# CHARACTERISTICS AND ABSOLUTE MAXIMUM RATING BY MATERIAL

## Photo Transistor (Through-Hole Shape)

Ta=25°C (Excl: Topr and Tstg)

Part Number Prefix		Absolute Maximum Ratings						Electro-Optical Characteristics						
		Collector Dissipation	Collector-Emitter Breakdown Voltage	Emitter-Collector Breakdown Voltage	Collector Current	Operating Temp.	Storage Temp.	Dark Current		Response Time				Wavelength of Peak Sensitivity
								ICEO	tr • tf					
Type	Pd	VCEO	VECO	IC	Topr	Tstg	MAX.	ICEO	TYP.	VCE	IC	RL	p TYP	
PS		100	30	5	30	-30~+85	-30~+100	0.2	10	5	10	2	100	880
	502	60	30	5	20	-30~+85	-30~+100	0.2	10	5	10	2	100	880
Unit		mW	V	V	mA	°C	°C	A	V	sec	V	mA		nm

## Photo Transistor (SMT Shape)

Ta=25°C (Excl: Topr and Tstg)

Part Number Prefix	Absolute Maximum Ratings						Electro-Optical Characteristics						
	Collector Dissipation	Collector-Emitter Breakdown Voltage	Emitter-Collector Breakdown Voltage	Collector Current	Operating Temp.	Storage Temp.	Dark Current		Response Time				Wavelength of Peak Sensitivity
	Pd	VCEO	VECO	IC	Topr	Tstg	ICEO	MAX.	ICEO	TYP.	tr • tf	RL	p TYP
PS	75	30	5	20	-30~+85	-30~+90	0.1	10	9	10	2	100	880
Unit	mW	V	V	mA	°C	°C	A	V	sec	V	mA		nm

## Pin Photo Diode (Through-hole Shape)

Part Number Prefix	Absolute Maximum Ratings				Electro-Optical Characteristics												
	Power Dissipation	Reverse Voltage	Operating Temp.	Storage Temp	Photo Current IP			Response Time tr • tf			Capacitance CT			Dark Current ID		Wavelength of Peak Sensitivity p	
	Pd	VR	Topr	Tstg	TYP.	VR	Ee	TYP.	VR	RL	TYP.	VR	f	MAX.	VR	TYP.	VR
PP	Specifications vary according to a part type																
Unit	mW	V	°C		A	V	mW/cm²	nsec	V		pF	V	MHz	nA	V	nm	V

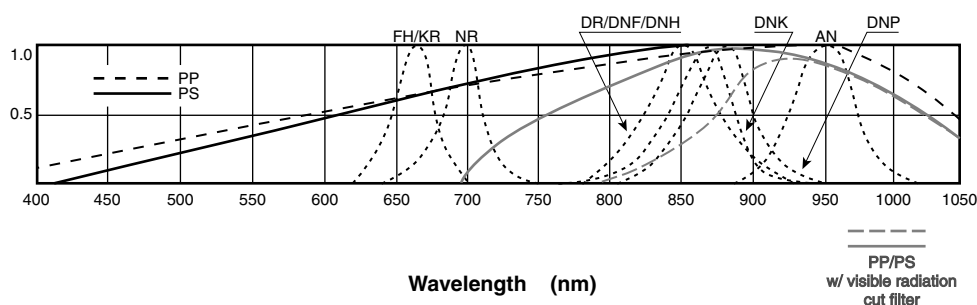
## Pin Photo Diode (SMT Shape)

Ta=25°C (Excl: Topr and Tstg)

Part Number Prefix	Absolute Maximum Ratings				Electro-Optical Characteristics												
	Power Dissipation	Reverse Voltage	Operating Temp.	Storage Temp	Photo Current IP			Response Time tr • tf			Capacitance CT			Dark Current ID		Wavelength of Peak Sensitivity p	
	Pd	VR	Topr	Tstg	TYP.	VR	Ee*	TYP.	VR	RL	TYP.	VR	f	MAX.	VR	TYP.	VR
PP	30	15	-30~+85	-30~+90	4	5	5	50	10	1000	3	10	1	10	10	950	0
Unit	mW	V	°C		A	V	mW/cm²	nsec	V		pF	V	MHz	nA	V	nm	V

\*A standard tungsten filament lamp with color temperature 2856K is used.

## Spectral Distribution


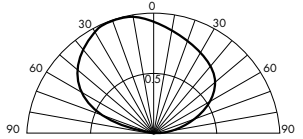

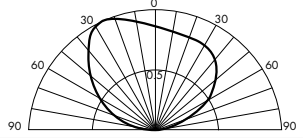

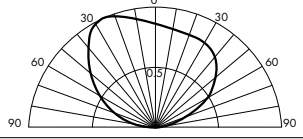

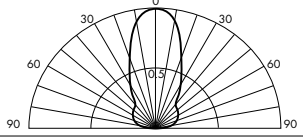

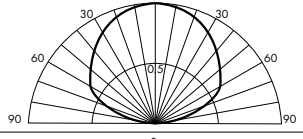

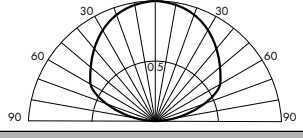


Emitter:  
Relative Radiant Intensity  
Detector:  
Relative Spectral Sensitivity

# SMT SHAPE - PHOTO TRANSISTOR AND PIN PHOTO DIODE

## Photo Transistor

Ta= 25°C


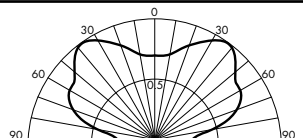
Shape	Part No.	Features	Wavelength of Peak Sensitivity P TYP.	Photo Current I <sub>c</sub>				Response Time tr • tf TYP.	Spatial Distribution (The typical distribution example of each shape is shown below)	fig.
				MIN.	TYP.	V <sub>CE</sub>	E <sub>e</sub>			
	<b>PS1101WA</b>	—	880	0.7	3.5	5	5	8/9		1
	<b>PS1101RA</b>	Reverse Mount	880	0.4	2.0	5	5	8/9		2
	<b>PS1191RA</b>	Reverse Mount with visible radiation cut filter under 700nm	900	0.4	2.0	5	5	8/9		2
	<b>PS1192FA</b>	Side view package with visible radiation cut filter under 700nm	900	1.4	7.0	5	5	8/9		3
	<b>PS1102HA</b>	Compact size	880	0.4	2.0	5	5	8/9		4
	<b>PS1192HA</b>	Compact size with visible radiation cut filter under 700nm	900	0.4	2.0	5	5	8/9		4
Unit			nm	mA		V	mW/cm <sup>2</sup>	s		

I<sub>c</sub>=2mA, V<sub>CE</sub>=10V, R<sub>L</sub>=100

All above products contain no lead

## Pin Photo Diode

Ta= 25°C

Shape	Part No.	Features	Wavelength of Peak Sensitivity P TYP.	Photo Current I <sub>c</sub>				Response Time tr • tf TYP.	Spatial Distribution (The typical distribution example of each shape is shown below)	fig.
				MIN.	TYP.	V <sub>CE</sub>	E <sub>e</sub>			
	<b>PP1101W</b>	—	950	2.0	4.0	5	5	50		5
Unit			nm	mA		V	mW/cm <sup>2</sup>	ns		

Product contains no lead

# SMT SHAPE - PHOTO TRANSISTOR AND PIN PHOTO DIODE

## Package Dimensions

unit: mm

fig. 1

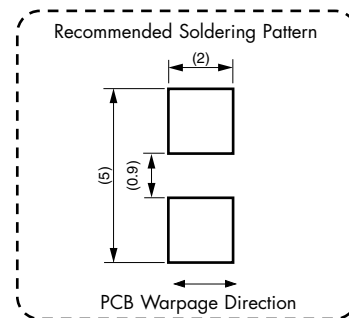
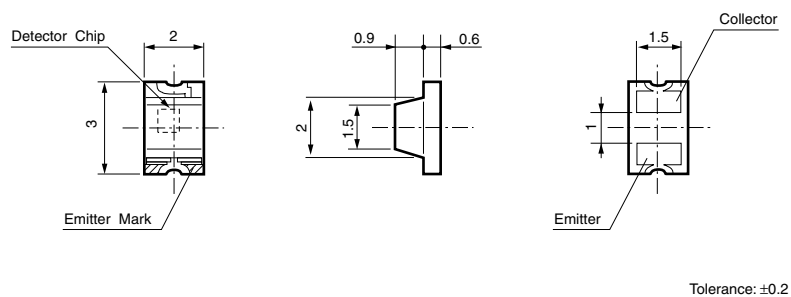


fig. 2

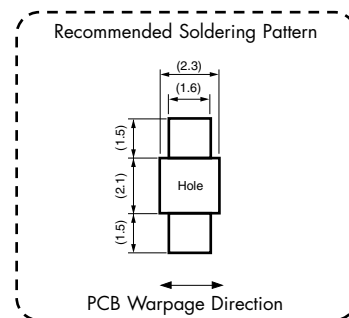
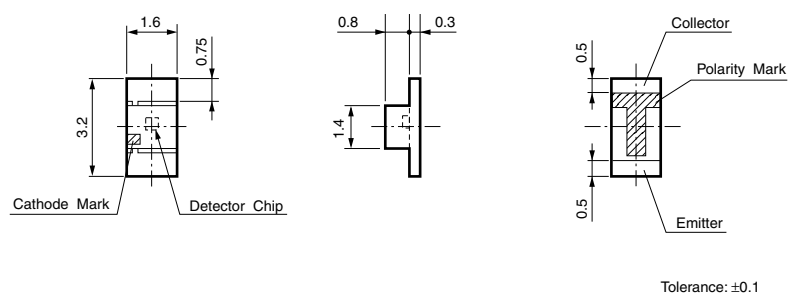


fig. 3

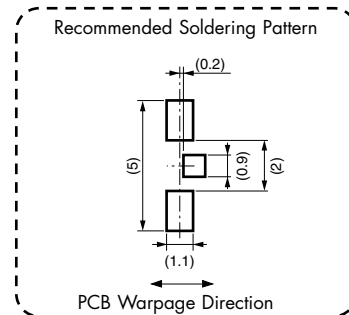
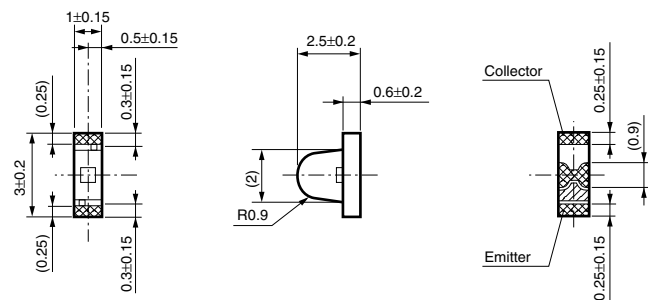
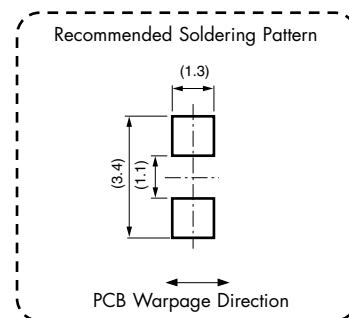
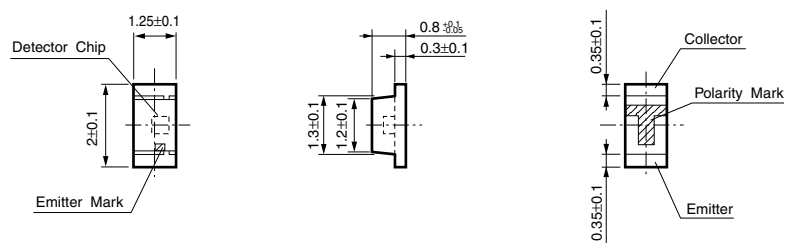


fig. 4

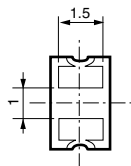
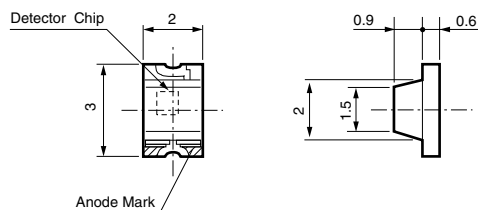


# SMT SHAPE - PHOTO TRANSISTOR AND PIN PHOTO DIODE

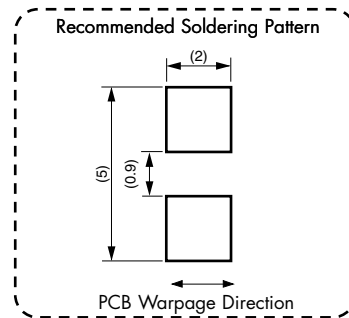
## Package Dimensions

unit: mm

fig. 5



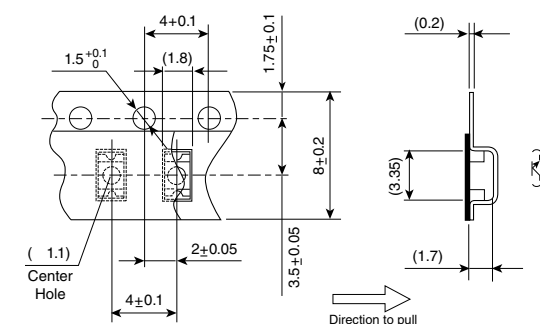
Tolerance:  $\pm 0.2$



## Taping Specifications

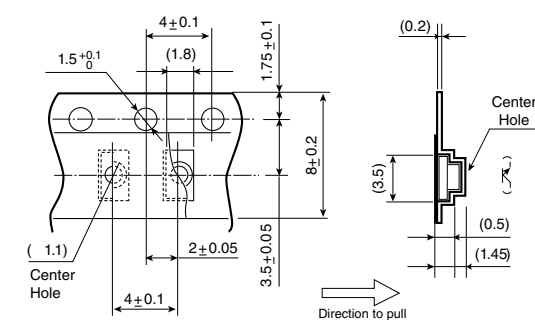
unit: mm

1101WA



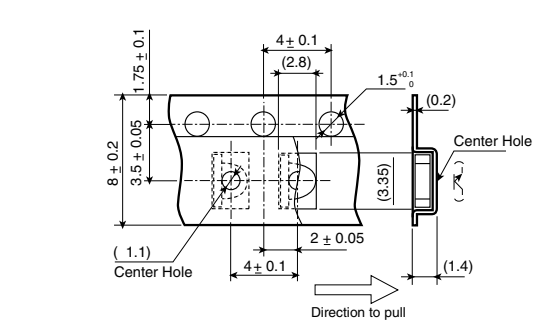
Quantity per Reel: 2,500

1101RA-1191RA



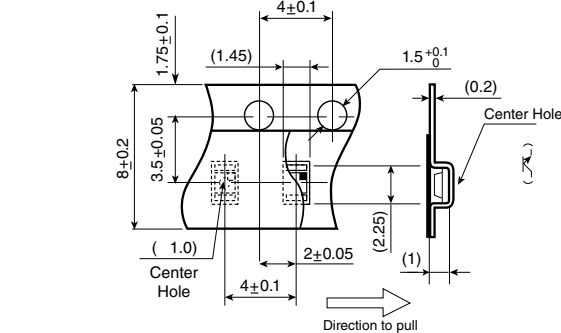
Quantity per Reel: 3,000

1192FA



Quantity per Reel: 3,000

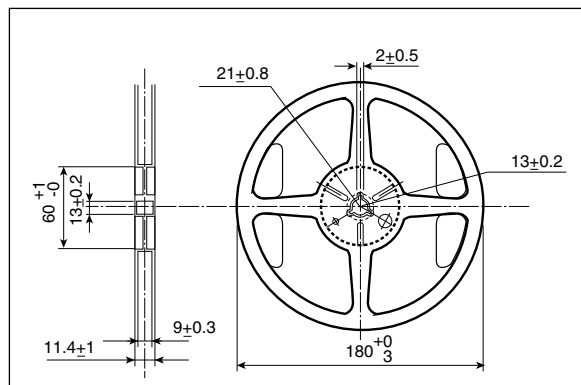
1102HA-1192HA



Quantity per Reel: 4,000

## Reel Specifications


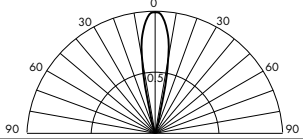

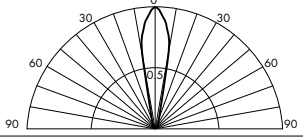

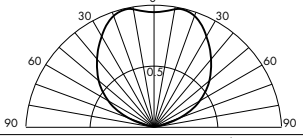

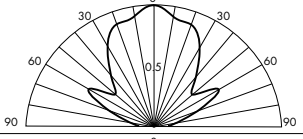

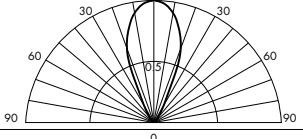

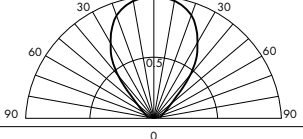

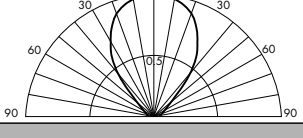
unit: mm



THROUGH-HOLE SHAPE - PHOTO TRANSISTOR

Photo Transistor

Ta= 25°C

Shape	Part No.	Features	Wavelength of Peak Sensitivity P TYP.	Photo Current Ic				Response Time tr • tf	Spatial Distribution (The typical distribution example of each shape is shown below)	fig.
				MIN.	TYP.	VCE	Ee			
	<b>PS3022</b>	5 package High photo current	880	1.5	7.0	5	1	5		1
	<b>PS3322</b>	3 package Narrow distribution	880	1.2	3.6	5	1	5		2
	<b>PS3072</b>	3 package Wide distribution	880	0.2	0.7	5	1	5		3
	<b>PS4032</b>	3 package Flat lens	880	1.5	5.0	5	10	5		4
	<b>PS5022</b>	Double-end	880	0.4	2.0	5	1	5		5
	<b>PS5042</b>	Side-view	880	0.4	1.4	5	1	5		6
	<b>PS5042-2</b>	Side view package with visible radiation cut filter under 800nm	930	0.13	0.4	5	1	5		6
Unit			nm	mA		V	mW/cm <sup>2</sup>	s		

All above products contain no lead  
\* Lead-free soldering compatible product

Ic=2mA, VCE=10V, RL=100

# THROUGH-HOLE SHAPE - PHOTO TRANSISTOR

## Package Dimensions

unit: mm

fig. 1

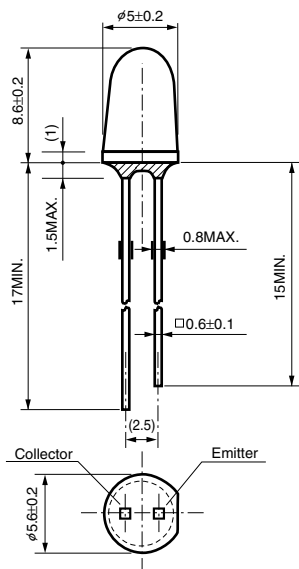


fig. 2

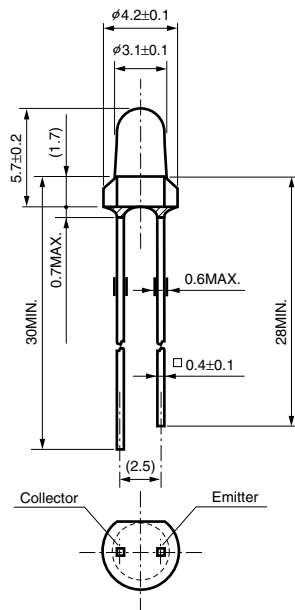


fig. 3

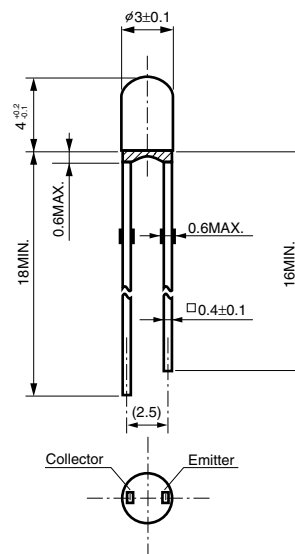


fig. 4

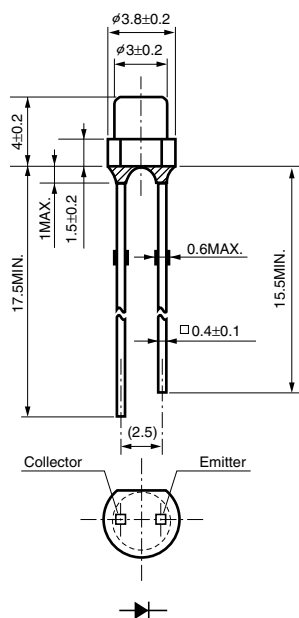


fig. 5

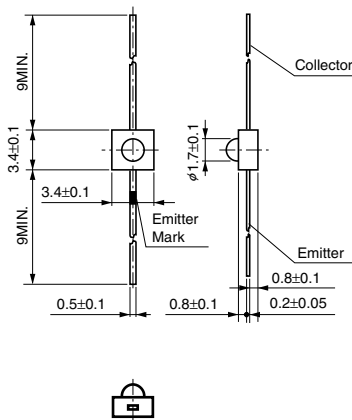


fig. 6

