

## ■ Detector-Filter Combination Series

### Planar Diffused Silicon Photodiodes

The Detector-Filter combination series incorporates a filter with a photodiode to achieve a tailored spectral response. OSI Optoelectronics offers a multitude of standard and custom combinations. Upon request, all detector-filter combinations can be provided with a NIST traceable calibration data specified in terms of Amps/Watt, Amps/lumen, Amps/lux or Amps/ footcandle.

Among many possible custom combinations, following are a few detector-filter combinations available as standard parts.

**PIN-10DF** - is a 1 cm<sup>2</sup> active area, BNC package detector-filter combination, optimized to achieve a flat responsivity, from 450 to 950 nm. This is the spectral response required for radiometric measurements. This type of detector has several advantages over thermopile, such as sensitivity, which is about a thousand times higher, as well as 10 times more stability.

**PIN-10AP-1** - is a 1 cm<sup>2</sup> active area, BNC package detector-filter combination which duplicates the response of the most commonly available optical aid; the human eye. The eye senses both brightness and color, with response varying as a function of the wavelength. This response curve is commonly known as the CIE curve. The AP filters accurately match the CIE curve to within 8% of area.

**PIN-555AP-1** - has the same optical characteristics as the PIN 10-AP-1, with an additional operational amplifier in the same package. The package and the opamp combination is identical to UDT-555D detector-amplifier combination (Photops™).

**PIN-005E-550F** - uses a low cost broad bandpass filter with peak transmission at 550nm to mimic the CIE curve for photometric applications. The pass band is similar to the CIE curve, but the actual slope of the spectral response curve is quite different. This device can also be used to block the near IR portion of the spectral range, 700 nm and above.

**PIN-005D-254F** - is a 6 mm<sup>2</sup> active area, UV enhanced photodiode-filter combination which utilizes a narrow bandpass filter peaking at 254 nm.



#### ■ APPLICATIONS

- Analytical Chemistry
- Spectrophotometry
- Densitometers
- Photometry/Radiometry
- Spectroradiometry
- Medical Instrumentation
- Liquid Chromatography

#### ■ FEATURES

- CIE Match (AP series)
- Flat Band Response (DF)
- 254 Narrow Bandpass
- w/ Amplifier Hybrid
- BNC Packages

### CUSTOMIZED CAPABILITIES

Current existing standard photodiodes can be modified by adding various optical filter(s), to match your specific spectral requirements. The filters can either replace the standard glass windows or be used in conjunction with the glass window, depending on the specific requirement and / or nature of the filter. Customer furnished optical filters can also be incorporated in the package. The following are among a few of the optical filter types available. These colored glass filters are grouped into four major categories: Shortpass Filters, Longpass Filters, Bandpass Filters, and Neutral Density Filters. Windows are also available with Custom Thin Film, Anti-reflective, Cut-on and Cut-off Filter Coatings.

**ALL PHOTODIODES WITH OR WITHOUT FILTERS CAN BE CALIBRATED IN HOUSE FOR RESPONSIVITY FROM 200 NM TO 1100 NM IN 10 NM STEPS AS WELL AS SINGLE POINT CALIBRATION. ALL OPTICAL CALIBRATIONS ARE NIST TRACEABLE.**

# Detector-Filter Combination Series

Typical Electro-Optical Specifications at  $T_A=23^\circ\text{C}$

Model Number	Active Area		Spectral Match	Responsivity at 550nm		Capacitance (pF)	Shunt Resistance (M $\Omega$ )	NEP (W/ $\sqrt{\text{Hz}}$ )	Rise Time ( $\mu\text{s}$ )	Temp. Range ( $^\circ\text{C}$ )		Package Style ¶
	Area (mm $^2$ )	Dimensions (mm)	$\lambda_p$ (nm)	(A/W)	mA/Lum	0 V	-10 mV	-10mV 550 nm	0 V 550 nm 50 $\Omega$	Operating	Storage	
			typ.	typ.		typ.	typ.	typ.				

## Detector Filter Combination Series

<b>PIN-10DF</b>	100	11.28 $\phi$	$\pm 7\%$ ‡	0.15	---	1500	20	1.9 e-13	1.0	0 ~ +70	-25 ~ +85	13 / BNC
<b>PIN-10AP-1</b>			8%***	0.24	0.4			1.1 e-13	0.15			33 / Special
<b>PIN-555AP-1§</b>			---	0.23	---			2.5 e-14	0.1*			5 / TO-5
<b>PIN-005E-550F</b>	5.7	2.4 sq.	---	0.23	---	200	500	2.5 e-14	0.1*			5 / TO-5
<b>PIN-005D-254F</b>				0.025*	---	100	300	3.0 3-13*				18 / TO-5

‡ Point by point from 450nm to 950nm.

§ PIN-555AP is a Detector / Operational Amplifier hybrid. For Op-Amp specifications, please see p.29.

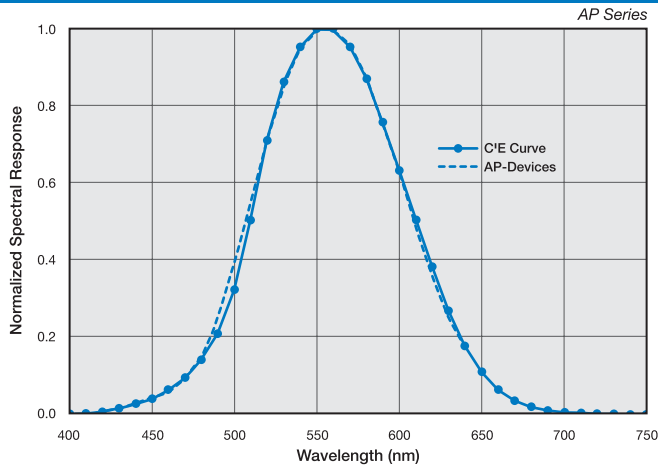
¶ For mechanical drawings please refer to pages 58 thru 69.

\*  $\lambda=254\text{nm}$

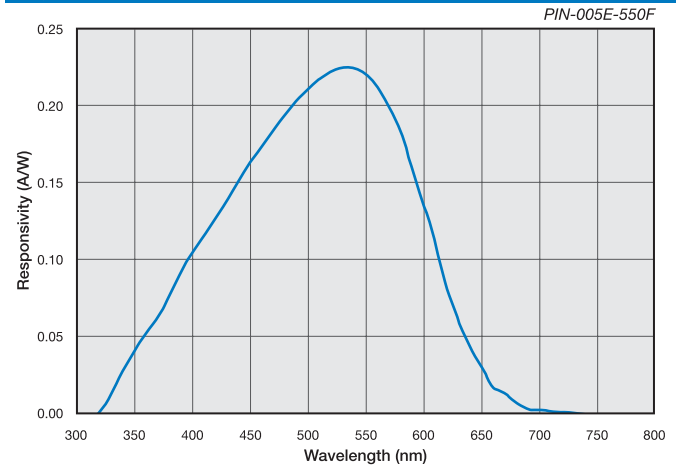
\*\* Non-condensing temperature and storage range, Non-condensing environment.

\*\*\* Area within CIE Curve

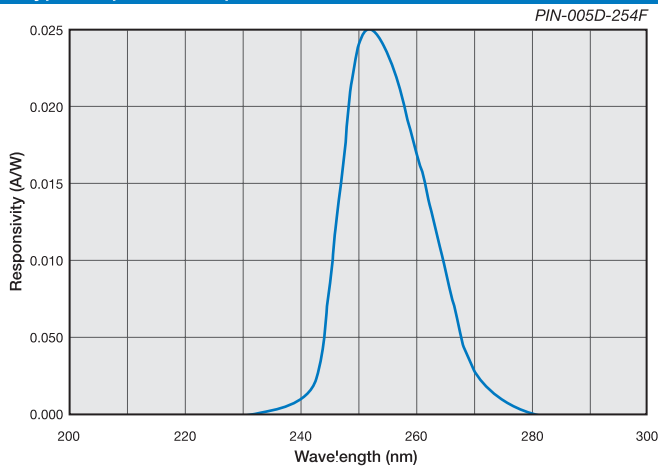
### Typical Spectral Response



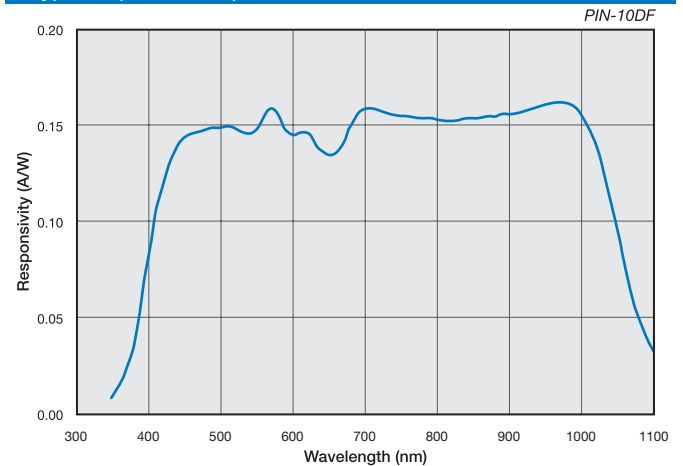
### Typical Spectral Response



### Typical Spectral Response



### Typical Spectral Response



## Series E

### Eye Response Detectors

Series E photodiodes are Blue-enhanced detectors with high quality color-correcting filters. The resulting spectral response approximates that of the human eye.

In addition to the Series E photodiodes listed, OSI Optoelectronics can provide other photodiodes in this catalog with a variety of optical filters.



#### APPLICATIONS

- Photometry/Radiometry
- Medical Instrumentation
- Analytical Chemistry

#### FEATURES

- Human Eye Response
- TO Can Packages

Model Number	Active Area		Responsivity nA Lux <sup>-1</sup>		Dark Current (nA)		NEP (WHZ <sup>-1/2</sup> )	Capacitance (pF)		Shunt Resistance Megaohms**		Reverse Voltage (DC)	Spectral Curve	Temp. Range (°C)		Package Style †
	Area (mm <sup>2</sup> )	Dimensions (mm)	min.	typ.	max.	typ.	550 nm VR=0	Vr=0V max.	Vr=12V max.	min.	typ.	max.		Operating	Storage	
<b>OSD-E Series</b>																
OSD1-E	1	1.0 x 1.0	1	2.2	1	0.2	1.5 x 10 <sup>-14</sup>	35	7	250	1000	15	1	-25 ~ +85	-40 ~ +120	7 / TO-18
OSD3-E	3	2.5 x 1.2	3	6.6	2	0.5	1.8 x 10 <sup>-14</sup>	80	20	100	700		1			7 / TO-18
OSD5-E	5	2.5 dia.	5	11	2	0.5	1.9 x 10 <sup>-14</sup>	130	35	100	600		1			5 / TO-5
OSD15-E	15	3.8 x 3.8	15	33	10	2	5.2 x 10 <sup>-14</sup>	390	80	50	80		1			5 / TO-5
OSD60-E	100	11.3 dia.	30	56	30	8	1.2 x 10 <sup>-13</sup>	2500	520	2	10		2			72 / TO-8

Characteristics measured at 22° C (±2) and a reverse bias of 12 volts unless otherwise stated.

\*\* Shunt Resistance measured at +/- 10mV.

† For mechanical drawings please refer to pages 58 thru 69.

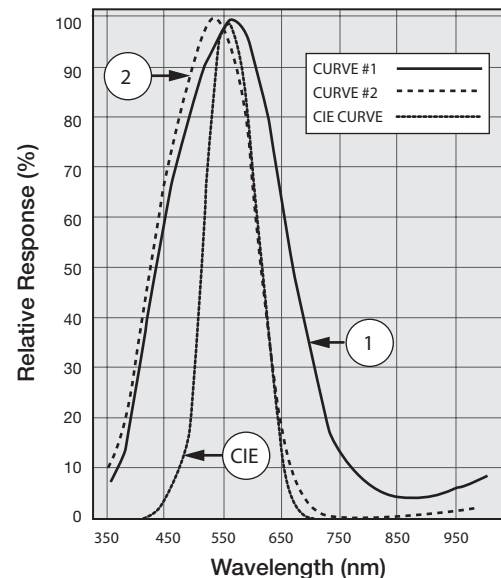
### Unit Conversion Table for Illuminance

The Series E photodiodes have been color corrected to provide a photopic eye response. These devices can be used as low illuminance monitors, i.e. visible light measurement instruments and adjusting brightness of visible display.

Lux lx (lm/m <sup>2</sup> )	Phot Ph (lm/cm <sup>2</sup> )	Foot-candle fc (lm/ft <sup>2</sup> )	Watt per square cm* W/cm <sup>2</sup>
1	1.000 x 10 <sup>-4</sup>	9.290 x 10 <sup>-2</sup>	5.0 x 10 <sup>-6</sup>
1.000 x 10 <sup>4</sup>	1	9.290 x 10 <sup>2</sup>	9.290 x 10 <sup>-2</sup>
1.076 x 10 <sup>1</sup>	1.076 x 10 <sup>-3</sup>	1	5.0 x 10 <sup>-5</sup>
2.0 x 10 <sup>5</sup>	1.0 x 10 <sup>1</sup>	1.9 x 10 <sup>4</sup>	1

\*Total irradiance (measured value) by the CIE standard light source "A".

### CIE Curve vs. E Type Parts



## 1. Parameter Definitions:

A = Distance from top of chip to top of glass.

a = Photodiode Anode.

B = Distance from top of glass to bottom of case.

c = Photodiode Cathode

(Note: cathode is common to case in metal package products unless otherwise noted).

W = Window Diameter.

F.O.V. = Field of View (see definition below).

## 2. Dimensions are in inches (1 inch = 25.4 mm).

## 3. Pin diameters are 0.018 ± 0.002" unless otherwise specified.

## 4. Tolerances (unless otherwise noted)

General: 0.XX ±0.01"

0.XXX ±0.005"

Chip Centering: ±0.010"

Dimension 'A': ±0.015"

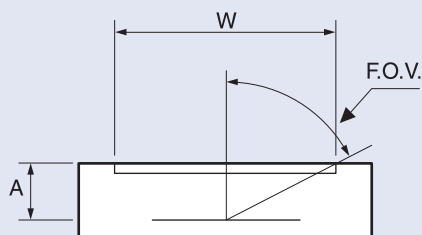
## 5. Windows

All '**UV**' Enhanced products are provided with QUARTZ glass windows, 0.027 ± 0.002" thick.

All '**XUV**' products are provided with removable windows.

All '**DLS**' PSD products are provided with A/R coated glass windows.

All '**FIL**' photoconductive and photovoltaic products are epoxy filled instead of glass windows.



$$F.O.V. = \tan^{-1} \left( \frac{W}{2A} \right)$$



For Further Assistance  
Please Call One of Our Experienced  
Sales and Applications Engineers

**310-978-0516**



- Or -  
On the Internet at

**www.osioptoelectronics.com**

# Mechanical Specifications

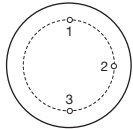
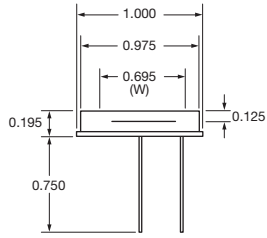
All units in inches. Pinouts are bottom view.

1 TO-18	2 TO-5	3 TO-8																																		
<p><b>Products:</b></p> <p>PIN-020A PIN-040A PIN-040-DP/SB</p> <p>Pin Circle Dia.=0.100</p> <table border="1"> <thead> <tr> <th>P/N</th> <th>A</th> <th>B</th> <th>W</th> </tr> </thead> <tbody> <tr> <td>PIN-020A</td> <td>0.075</td> <td>0.200</td> <td>0.155</td> </tr> <tr> <td>PIN-040A</td> <td>0.075</td> <td>0.200</td> <td>0.155</td> </tr> </tbody> </table>	P/N	A	B	W	PIN-020A	0.075	0.200	0.155	PIN-040A	0.075	0.200	0.155	<p><b>Products:</b></p> <p>PIN-5DI PIN-5DPI PIN-13DI PIN-13DPI PIN-5-YAG CD-25T</p> <p>Pin Circle Dia.=0.200</p> <table border="1"> <thead> <tr> <th>P/N</th> <th>A</th> <th>B</th> <th>W</th> </tr> </thead> <tbody> <tr> <td>All Others</td> <td>0.094</td> <td>0.180</td> <td>0.240</td> </tr> <tr> <td>CD-25T</td> <td>0.050</td> <td>0.130</td> <td>0.23</td> </tr> </tbody> </table>	P/N	A	B	W	All Others	0.094	0.180	0.240	CD-25T	0.050	0.130	0.23	<p><b>Products:</b></p> <p>PIN-6DI PIN-6DPI PIN-44DI PIN-44DPI OSD35-0 OSD35-7Q</p> <p>Pin Circle Dia.=0.295</p> <table border="1"> <thead> <tr> <th>P/N</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>PIN-6DI/6DPI</td> <td>0.115</td> </tr> <tr> <td>PIN-44DI/44DPI</td> <td>0.125</td> </tr> <tr> <td>OSD35-0</td> <td>0.130</td> </tr> <tr> <td>OSD35-7Q</td> <td>0.130 Quartz Window</td> </tr> </tbody> </table>	P/N	A	PIN-6DI/6DPI	0.115	PIN-44DI/44DPI	0.125	OSD35-0	0.130	OSD35-7Q	0.130 Quartz Window
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<p><b>Products:</b></p> <p>PIN-2DI PIN-2DPI PIN-3CDP PIN-3CDPI BPX-65R</p> <p>Pin Circle Dia.=0.100</p> <table border="1"> <thead> <tr> <th>P/N</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>BPX-65R</td> <td>0.070</td> <td>0.200</td> </tr> <tr> <td>All Others</td> <td>0.090</td> <td>0.150</td> </tr> </tbody> </table>	P/N	A	B	BPX-65R	0.070	0.200	All Others	0.090	0.150	<p><b>Products:</b></p> <p>PIN-5D PIN-5DP PIN-5DP/SB PIN-13D PIN-13DP PIN-005E-550F UV-001 UV-005 UV-005D UV-005E UV-013D UV-013E UV-015 OSD-5-0 OSD15-0 OSD5-5T OSD15-5T OSD5.8-7Q OSD5.8-7U</p> <p>Pin Circle Dia.=0.200</p> <table border="1"> <thead> <tr> <th>P/N</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>OSD-Prefix Devices</td> <td>0.050</td> <td>0.130</td> </tr> <tr> <td>All Others</td> <td>0.102</td> <td>0.180</td> </tr> </tbody> </table> <p>Quartz Window: OSD5.8-7Q UV Transmissive Window: OSD5.8-7U</p>	P/N	A	B	OSD-Prefix Devices	0.050	0.130	All Others	0.102	0.180	<p><b>Products:</b></p> <p>PIN-6D PIN-6DP PIN-44D PIN-44DP UV-020 UV-035D UV-035E UV-035</p> <p>Pin Circle Dia.=0.295</p>																
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<p><b>Products:</b></p> <p>PIN-3CD PIN-3CDP BPX-65 OSD1-0 OSD1-5T OSD3-5T OSD1.2-7Q OSD1.2-7U</p> <p>Pin Circle Dia.=0.100</p> <table border="1"> <thead> <tr> <th>P/N</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>PIN-3CD / 3CDP</td> <td>0.087</td> <td>0.146</td> </tr> <tr> <td>BPX-65</td> <td>0.075</td> <td>0.200</td> </tr> <tr> <td>OSD-Prefix Devices</td> <td>0.080</td> <td>0.200</td> </tr> </tbody> </table> <p>Quartz Window: OSD1.2-7Q UV Transmissive Window: OSD1.2-7U</p>	P/N	A	B	PIN-3CD / 3CDP	0.087	0.146	BPX-65	0.075	0.200	OSD-Prefix Devices	0.080	0.200	<p><b>Products:</b></p> <p>PIN-125DPL</p> <p>Pin Circle Dia.=0.100</p>	<p><b>Products:</b></p> <p>PIN-HR005 PIN-HR008 PIN-HR020 PIN-HR026 PIN-HR040</p> <p>Pin Circle Dia.=0.100</p>																						
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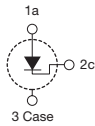
## Low Profile

Products:

PIN-10DI  
PIN-10DPI  
PIN-10DPI/SB  
UV-50L  
UV-100L



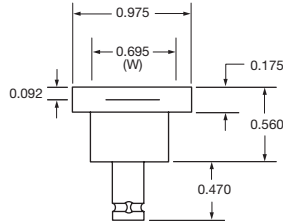
Pin Circle Dia.=0.73



## BNC

Products:

PIN-10D  
PIN-10DP  
PIN-10DP/SB  
UV-50  
UV-100

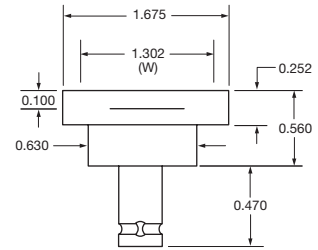


Outer Contact — Anode	PIN-10D, PIN-10DP, PIN-10DP/SB
Outer Contact — Cathode	UV-50, UV-100

## BNC

Products:

PIN-25D  
PIN-25DP

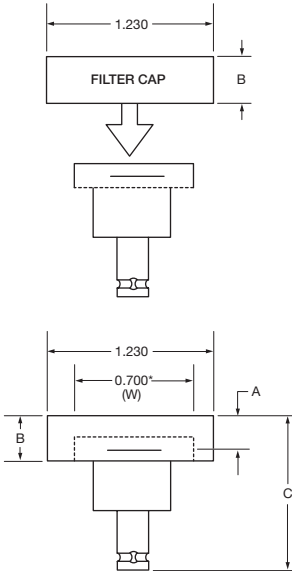


Outer Contact — Anode

## Special BNC

Products:

PIN-10AP  
PIN-10DF



Dimensions

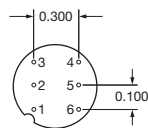
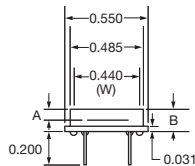
P/N	A	B	C
PIN-10DF	0.217	0.330	1.020
PIN-10AP-1	0.386	0.550	1.415

\* Window Aperture for PIN 10AP-1 is 0.500 in.

## Special Plastic

Products:

FIL-5C  
FIL-20C  
FIL-UV20  
FIL-C4DG



Dimensions

P/N	A	B
FIL-5C FIL-20C	0.060	0.130
FIL-UV005 FIL-UV20 FIL-C4DG	0.087	0.152

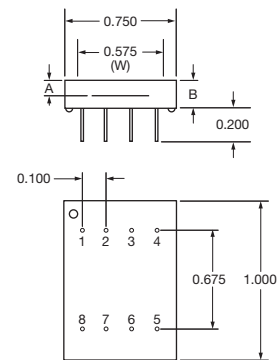
Pinouts

P/N	1	2	3	4	5	6
FIL-5C FIL-20C FIL-UV005	a	-	c	a	-	c
FIL-UV20	c	-	a	c	-	a
FIL-C4DG	c	a	c	c	a	c

## Special Plastic

Products:

FIL-44C  
FIL-100C  
FIL-UV50  
FIL-UV100  
FIL-C10DG



Dimensions

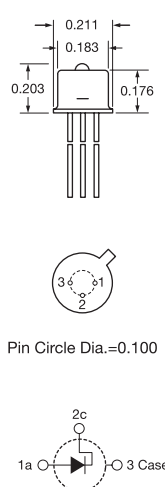
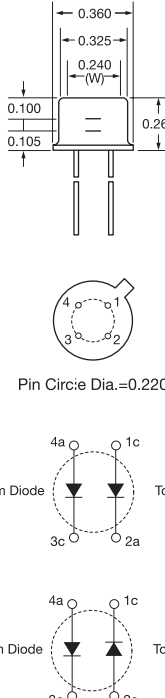
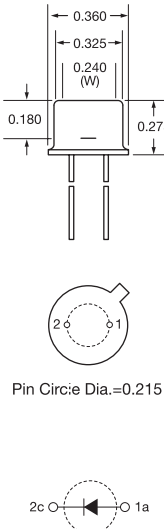
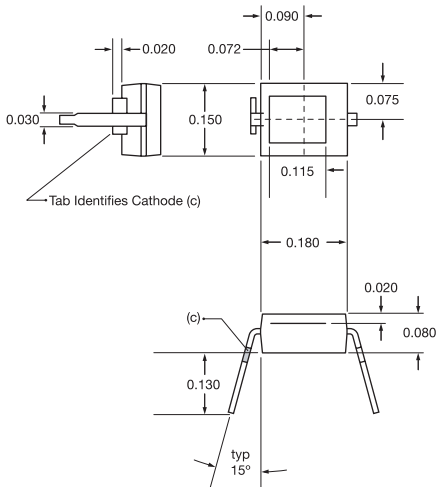
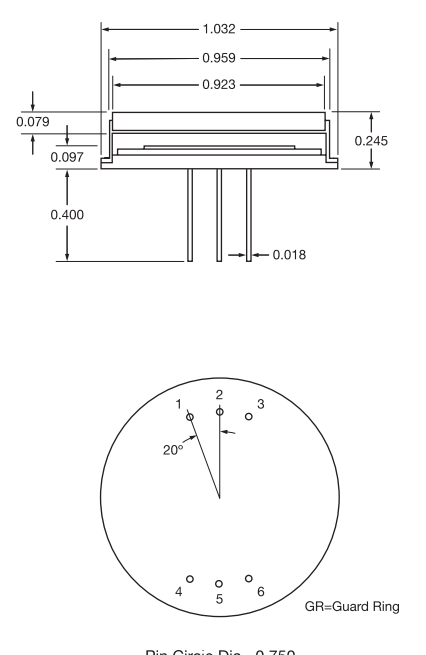
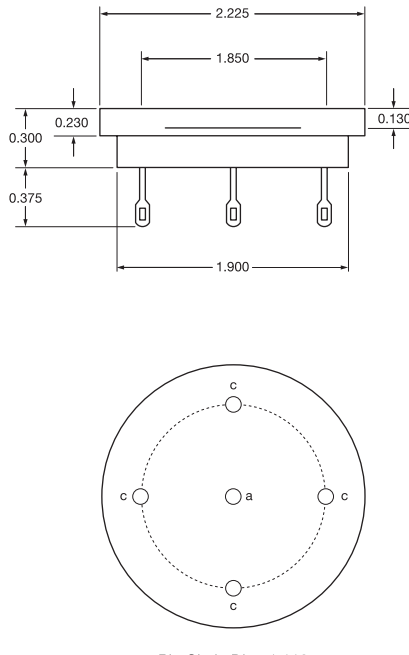
P/N	A	B
FIL-44C FIL-100C	0.052	0.130
FIL-UV50 FIL-UV100	0.090	0.155
FIL-C10DG	0.082	0.155

Pinouts

P/N	1	2	3	4	5	6	7	8
FIL-44C FIL-100C	a	-	-	c	a	-	-	c
FIL-UV50 FIL-UV100	c	-	-	a	c	-	-	a
FIL-C10DG	c	a	a	c	c	a	a	c

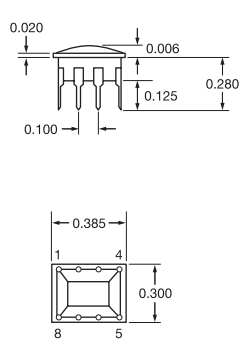
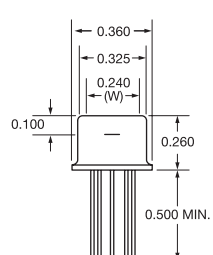
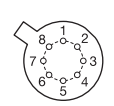
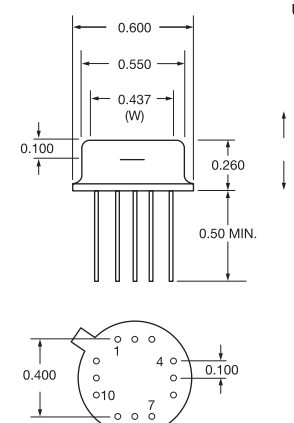
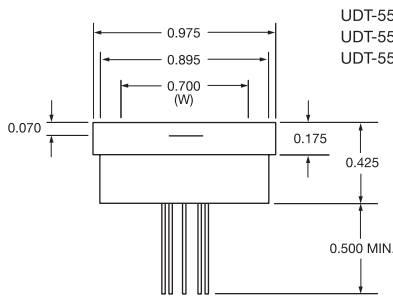
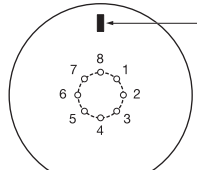
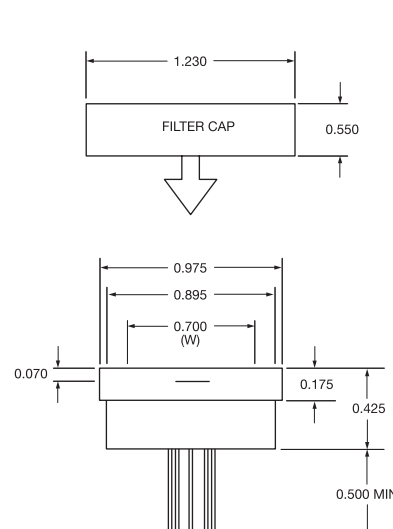
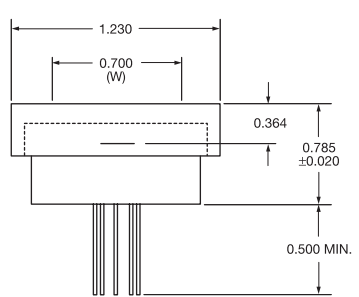
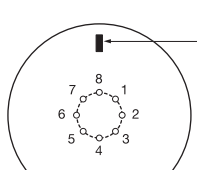
# Mechanical Specifications

All units in inches. Pinouts are bottom view.

16 TO-18 Lensed Cap	17 TO-5	18 TO-5																												
<p><b>Products:</b></p> <p>PIN-HR005L PIN-HR008L PIN-HR020L PIN-HR026L PIN-HR040L</p>  <p>Pin Circle Dia.=0.100</p>	<p><b>Products:</b></p> <p>PIN-DSS PIN-DSIn</p>  <p>Pin Circle Dia.=0.220</p> <p>Bottom Diode Top Diode PIN-DSS</p> <p>Bottom Diode Top Diode PIN-DSIn</p>	<p><b>Products:</b></p> <p>PIN-005D-245F</p>  <p>Pin Circle Dia.=0.215</p>																												
19 Plastic Mold	20 Special Metal	21 Special Metal																												
<p><b>Products:</b></p> <p>BPW34 BPW34B</p>  <p>Tab Identifies Cathode (c)</p>	<p><b>Products:</b></p> <p>SPOT-15-YAG SPOT-9-YAG PIN-100-YAG</p>  <p>Pin Circle Dia.=0.750</p> <p>GR=Guard Ring</p> <table border="1" data-bbox="584 1848 1039 1974"> <thead> <tr> <th>P/N</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr> <td>SPOT-15-YAG</td> <td>C1</td> <td>GR</td> <td>C4</td> <td>C2</td> <td>A</td> <td>C3</td> </tr> <tr> <td>SPOT-9-YAG</td> <td>C1</td> <td>GR</td> <td>C4</td> <td>C2</td> <td>A</td> <td>C3</td> </tr> <tr> <td>PIN-100-YAG</td> <td>--</td> <td>C</td> <td>--</td> <td>--</td> <td>A</td> <td>--</td> </tr> </tbody> </table>	P/N	1	2	3	4	5	6	SPOT-15-YAG	C1	GR	C4	C2	A	C3	SPOT-9-YAG	C1	GR	C4	C2	A	C3	PIN-100-YAG	--	C	--	--	A	--	<p><b>Products:</b></p> <p>SC-50D</p>  <p>Pin Circle Dia.=1.110</p>
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29 8 PIN DIP	30 TO-5	31 TO-8																																																								
Products:	Products:	Products:																																																								
<p>UDT-451</p>  <p>Pinout</p> <table border="1"> <tr><td>1</td><td>Offset Null</td></tr> <tr><td>2</td><td>Inverting Input Detector Cathode</td></tr> <tr><td>3</td><td>Noninverting Input</td></tr> <tr><td>4</td><td>V (-)</td></tr> <tr><td>5</td><td>Offset Null</td></tr> <tr><td>6</td><td>Output</td></tr> <tr><td>7</td><td>V (+)</td></tr> <tr><td>8</td><td>Detector Anode</td></tr> </table>	1	Offset Null	2	Inverting Input Detector Cathode	3	Noninverting Input	4	V (-)	5	Offset Null	6	Output	7	V (+)	8	Detector Anode	<p>UDT-455 UDT-455HS UDT-455LN UDT-455UV UDT-455UV/LN</p>   <p>Pin Circle Dia.=0.23</p> <p>Pinout</p> <table border="1"> <tr><td>1</td><td>Offset Null</td></tr> <tr><td>2</td><td>Inverting Input Detector Cathode</td></tr> <tr><td>3</td><td>Noninverting Input</td></tr> <tr><td>4</td><td>V (-)</td></tr> <tr><td>5</td><td>Offset Null</td></tr> <tr><td>6</td><td>Output</td></tr> <tr><td>7</td><td>V (+)</td></tr> <tr><td>8</td><td>Detector Anode</td></tr> </table>	1	Offset Null	2	Inverting Input Detector Cathode	3	Noninverting Input	4	V (-)	5	Offset Null	6	Output	7	V (+)	8	Detector Anode	<p>UDT-020D UDT-020UV</p>  <p>Pin Circle Dia.=0.295</p> <p>Pinout</p> <table border="1"> <tr><td>1</td><td>Not Used</td></tr> <tr><td>2</td><td>Not Used</td></tr> <tr><td>3</td><td>Offset Null</td></tr> <tr><td>4</td><td>Offset Null</td></tr> <tr><td>5</td><td>Inverting Input</td></tr> <tr><td>6</td><td>Noninverting Input</td></tr> <tr><td>7</td><td>Detector Cathode</td></tr> <tr><td>8</td><td>Case Ground</td></tr> <tr><td>9</td><td>Detector Anode</td></tr> <tr><td>10</td><td>V (-)</td></tr> <tr><td>11</td><td>Output</td></tr> <tr><td>12</td><td>V (+)</td></tr> </table>	1	Not Used	2	Not Used	3	Offset Null	4	Offset Null	5	Inverting Input	6	Noninverting Input	7	Detector Cathode	8	Case Ground	9	Detector Anode	10	V (-)	11	Output	12	V (+)
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Products:	Products:	Products:																																																								
<p>UDT-055UV UDT-555D UDT-555UV UDT-555UV/LN</p>   <p>Pin Circle Dia.=0.230</p> <p>Pinout</p> <table border="1"> <tr><td>1</td><td>Offset Null</td></tr> <tr><td>2</td><td>Inverting Input Detector Cathode</td></tr> <tr><td>3</td><td>Noninverting Input</td></tr> <tr><td>4</td><td>V (-)</td></tr> <tr><td>5</td><td>Offset Null</td></tr> <tr><td>6</td><td>Output</td></tr> <tr><td>7</td><td>V (+)</td></tr> <tr><td>8</td><td>Detector Anode and Case</td></tr> </table>	1	Offset Null	2	Inverting Input Detector Cathode	3	Noninverting Input	4	V (-)	5	Offset Null	6	Output	7	V (+)	8	Detector Anode and Case	<p>UDT-555D</p>  <p>Pinout</p> <table border="1"> <tr><td>1</td><td>Offset Null</td></tr> <tr><td>2</td><td>Inverting Input Detector Cathode</td></tr> <tr><td>3</td><td>Noninverting Input</td></tr> <tr><td>4</td><td>V (-)</td></tr> <tr><td>5</td><td>Offset Null</td></tr> <tr><td>6</td><td>Output</td></tr> <tr><td>7</td><td>V (+)</td></tr> <tr><td>8</td><td>Detector Anode and Case</td></tr> </table>	1	Offset Null	2	Inverting Input Detector Cathode	3	Noninverting Input	4	V (-)	5	Offset Null	6	Output	7	V (+)	8	Detector Anode and Case	<p>PIN-555AP</p>   <p>Pin Circle Dia.=0.230</p> <p>Pinout</p> <table border="1"> <tr><td>1</td><td>Offset Null</td></tr> <tr><td>2</td><td>Inverting Input Detector Cathode</td></tr> <tr><td>3</td><td>Noninverting Input</td></tr> <tr><td>4</td><td>V (-)</td></tr> <tr><td>5</td><td>Offset Null</td></tr> <tr><td>6</td><td>Output</td></tr> <tr><td>7</td><td>V (+)</td></tr> <tr><td>8</td><td>Detector Anode and Case</td></tr> </table>	1	Offset Null	2	Inverting Input Detector Cathode	3	Noninverting Input	4	V (-)	5	Offset Null	6	Output	7	V (+)	8	Detector Anode and Case								
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# Mechanical Specifications

All units in inches. Pinouts are bottom view.

68 TO-18	69 TO-18	70 TO-5
<p><b>Products:</b> APD-300 APD-500</p> <p>Pin Circle Dia.=0.100</p>	<p><b>Products:</b> APD-300L APD-500L</p> <p>Pin Circle Dia.=0.100</p>	<p><b>Products:</b> APD-900 APD-1500 APD-3000</p> <p>Pin Circle Dia.=0.200</p>

71 Plastic	72 TO-8	73 TO-8
<p><b>Products:</b> CD-1705</p> <p>ANODE CATHODE</p>	<p><b>Products:</b> OSD-60-0</p> <p>CATHODE &amp; CASE ANODE</p>	<p><b>Products:</b> QD50-0</p> <p>CATHODE &amp; CASE Q4 Q3 Q2 Q1 QUADRANT ANODE 1</p>

74 Special	75 TO-5	76 Plastic Molded
<p><b>Products:</b> OSD100-0A OSD100-5TA</p> <p>RED DOT INDICATES CATHODE LEAD</p>	<p><b>Products:</b> DLS-2S</p> <p>Pin Circle Dia.= 0.200 Bottom View</p>	<p><b>Products:</b> OS-P200</p> <p>OPTICAL C 0.020 0.100</p>