

<b>NO:</b> PMS - 024	<b>PRODUCT:</b> Photomicrosensors – Multiple Versions
<b>DATE:</b> November 2020	<b>TYPE:</b> Discontinuation

## Multiple Photomicrosensors- Discontinuation

In an effort to streamline our product offering and focus on popular models of Omron’s line of Photomicrosensors, OMRON will discontinue multiple Photomicrosensor models due to reduced global sales and aged tooling that will not be maintained in the future. The suggested replacements are listed below. Please carefully read through this notification and note the differences. The following details will fully explain the discontinuation and suggested replacement considerations; should you have any additional questions, however, please communicate with the Sensor Product Manager, Cary Horan.

**LAST ORDER DATE (Last Time Buy Date)**

**March 19, 2021**

Product Discontinuation		Suggested Replacement
Model EE-□109		No suggested replacement
Model EE-SA□07-P2		No suggested replacement
Model EE-SB5-B		Model EE-SB5
Model EE-SG3-B		Model EE-SX1088
Model EE-SH3(-□)		Model EE-SX1088 or Model EE-SX1096
Model EE-SX1023-W1		Model EE-SX1088-W11
Model EE-SX1057		Model EE-SX1071
Model EE-SX1115		Model EE-SX1042
Model EE-SX1235A-P2		No suggested replacement
Model EE-SX□01		Model EE-SX□98
Model EE-SX□239-P2		No suggested replacement
Model EE-SX4235A-P2(-5)		No suggested replacement
Model EE-SY□13		Model EE-SY□10
Model EE-SPY415		Model B5W-LB2112-1

**Discontinued Models and Suggested replacement:**

Discontinued Models	Suggested replacement
EE-L109	No suggested replacement
EE-SA107-P2	No suggested replacement
EE-SA407-P2	No suggested replacement
EE-SB5-B	EE-SB5
EE-SG3-B	EE-SX1088
EE-SH3	EE-SX1088
EE-SH3-B	EE-SX1088
EE-SH3-C	EE-SX1088
EE-SH3-CS	EE-SX1088
EE-SH3-D	EE-SX1088
EE-SH3-DS	EE-SX1096
EE-SH3-G	EE-SX1096
EE-SH3-GS	EE-SX1096
EE-SX1023-W1	EE-SX1088-W11
EE-SX1057	EE-SX1071
EE-SX1115	EE-SX1042
EE-SX1235A-P2	No suggested replacement
EE-SX301	EE-SX398
EE-SX3239-P2	No suggested replacement
EE-SX401	EE-SX498
EE-SX4235A-P2	No suggested replacement
EE-SX4235A-P2-5	No suggested replacement
EE-SX4239-P2	No suggested replacement
EE-SY313	EE-SY310
EE-SY413	EE-SY410
EE-TP109	No suggested replacement
EE-SPY415	B5W-LB2112-1

**Differences from discontinued product:**

Suggested Replacement Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
EE-SB5	**	**	**	*	**	-	-
EE-SX1088	**	--	**	--	*	-	-
EE-SX1096	**	--	**	--	*	-	-
EE-SX1088-W11	**	--	**	--	*	-	-
EE-SX1071	**	--	**	*	*	-	-
EE-SX1042	**	*	**	**	*	-	-
EE-SX398	**	--	**	*	*	-	-
EE-SX498	**	--	**	*	*	-	-
EE-SY310	**	*	**	**	*	-	-
EE-SY410	**	*	**	**	*	-	-
B5W-LB2112-1	**	--	*	--	--	-	-



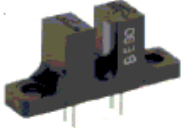

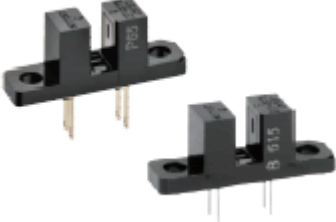





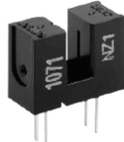
\*\* : Compatible

\* : The change is a little/Almost compatible

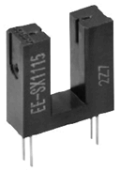







-- : Not compatible

- : No corresponding specification


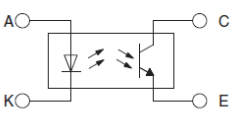
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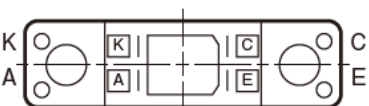
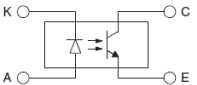

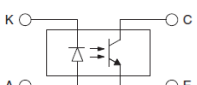
Discontinued Model EE-SB5-B	Suggested replacement Model EE-SB5
<p>Black</p> 	<p>Black</p> 
Discontinued Model EE-SG3-B	Suggested replacement Model EE-SX1088
<p>Black</p> 	<p>Black</p> 
Discontinued Model EE-SH3(-□)	Suggested replacement Model EE-SX1088 or EE-SX1096
<p>Black</p> 	<p>Black</p> <p>Model EE-SX1088      Model EE-SX1096</p>  
Discontinued Model EE-SX1023-W1	Suggested replacement Model EE-SX1088-W11
<p>Black</p> 	<p>Black</p> 
Discontinued Model EE-SX1057	Suggested replacement Model EE-SX1071
<p>Black</p> 	<p>Black</p> 

**Body Color (Continued):**

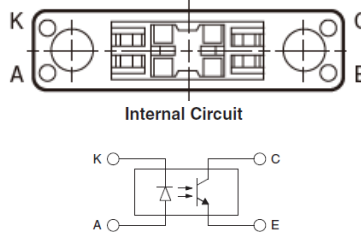
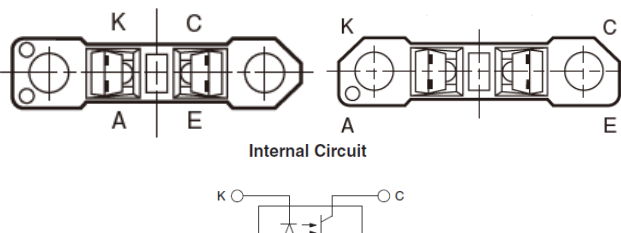
Discontinued Model EE-SX1115	Suggested replacement Model EE-SX1042
<p>Black</p> 	<p>Black</p> 
Discontinued Model EE-SX□01	Suggested replacement Model EE-SX□98
<p>Black</p> 	<p>Black</p> 
Discontinued Model EE-SY□13	Suggested replacement Model EE-SY□10
<p>Black</p> 	<p>Black</p> 
Discontinued Model EE-SPY415	Suggested replacement Model B5W-LB2112-1
<p>Black</p> 	<p>Black</p> 

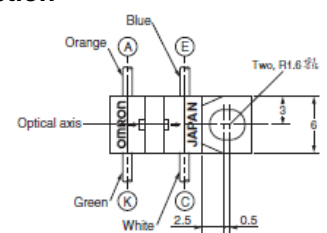
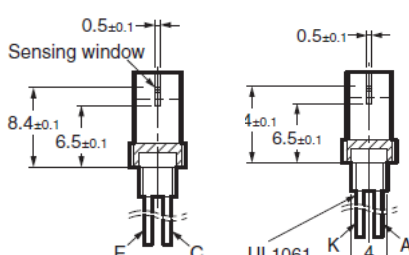
**Wire connection:**

Discontinued Model EE-SB5-B	Suggested replacement Model EE-SB5										
<p><b>Wire connection</b></p> <div style="text-align: center; margin: 10px 0;">  </div> <p style="text-align: center; margin: 5px 0;">Internal Circuit</p> <div style="text-align: center; margin: 10px 0;">  </div> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 2px 5px;">Terminal No.</th> <th style="padding: 2px 5px;">Name</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px 5px;">A</td> <td style="padding: 2px 5px;">Anode</td> </tr> <tr> <td style="padding: 2px 5px;">K</td> <td style="padding: 2px 5px;">Cathode</td> </tr> <tr> <td style="padding: 2px 5px;">C</td> <td style="padding: 2px 5px;">Collector</td> </tr> <tr> <td style="padding: 2px 5px;">E</td> <td style="padding: 2px 5px;">Emitter</td> </tr> </tbody> </table>		Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter
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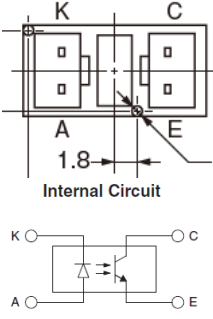
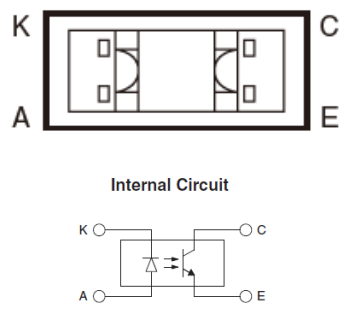
Discontinued Model EE-SG3-B	Suggested replacement Model EE-SX1088																				
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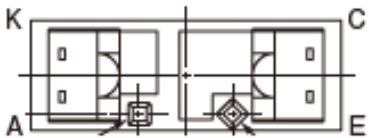
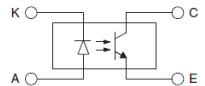
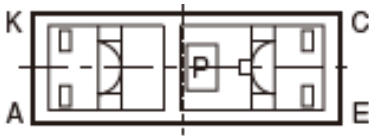
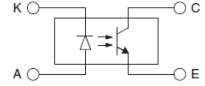
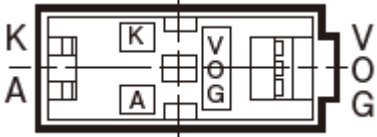
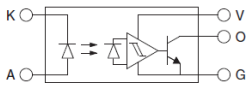
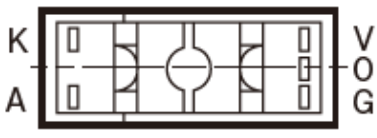
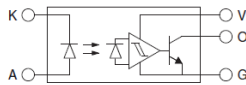
Discontinued Model EE-SH3 (-□)	Suggested replacement Model EE-SX1088 / EE-SX1096																				
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**Wire connection (Continued):**

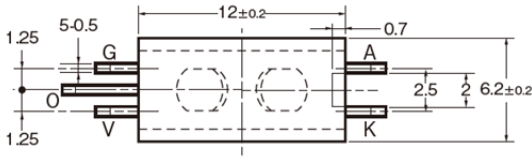
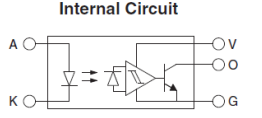
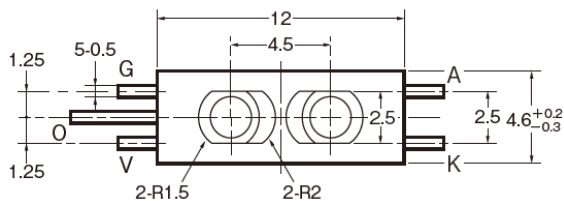
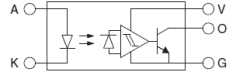
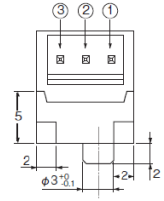
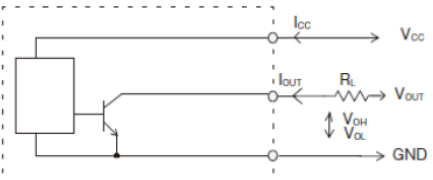
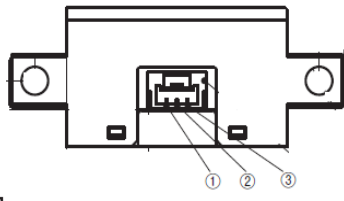
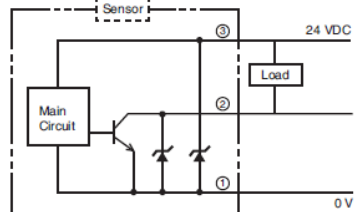
<b>Discontinued Model EE-SX1057</b>	<b>Suggested replacement Model EE-SX1071</b>																				
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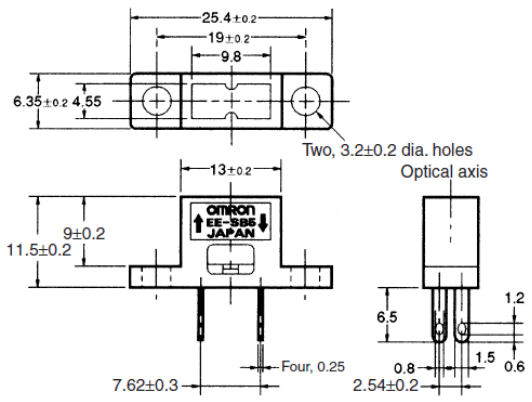
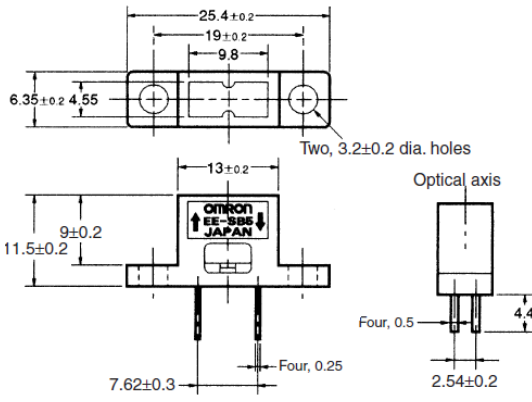
Discontinued Model EE-SX1115	Suggested replacement Model EE-SX1042																								
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<p><b>Wire connection</b></p>  <p>Internal Circuit</p>  <table border="1" data-bbox="324 1081 568 1270"> <thead> <tr> <th>Terminal No.</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Anode</td> </tr> <tr> <td>K</td> <td>Cathode</td> </tr> <tr> <td>V</td> <td>Power supply (Vcc)</td> </tr> <tr> <td>O</td> <td>Output (OUT)</td> </tr> <tr> <td>G</td> <td>Ground (GND)</td> </tr> </tbody> </table>	Terminal No.	Name	A	Anode	K	Cathode	V	Power supply (Vcc)	O	Output (OUT)	G	Ground (GND)	<p><b>Wire connection</b></p>  <p>Internal Circuit</p>  <table border="1" data-bbox="998 1092 1242 1281"> <thead> <tr> <th>Terminal No.</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Anode</td> </tr> <tr> <td>K</td> <td>Cathode</td> </tr> <tr> <td>V</td> <td>Power supply (Vcc)</td> </tr> <tr> <td>O</td> <td>Output (OUT)</td> </tr> <tr> <td>G</td> <td>Ground (GND)</td> </tr> </tbody> </table>	Terminal No.	Name	A	Anode	K	Cathode	V	Power supply (Vcc)	O	Output (OUT)	G	Ground (GND)
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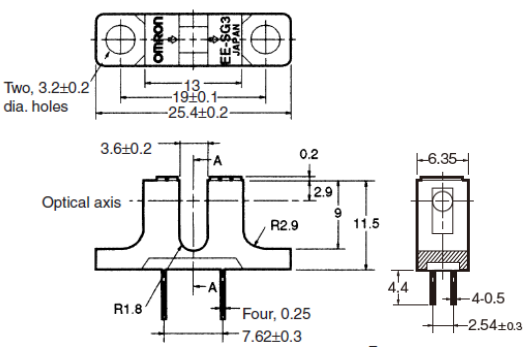
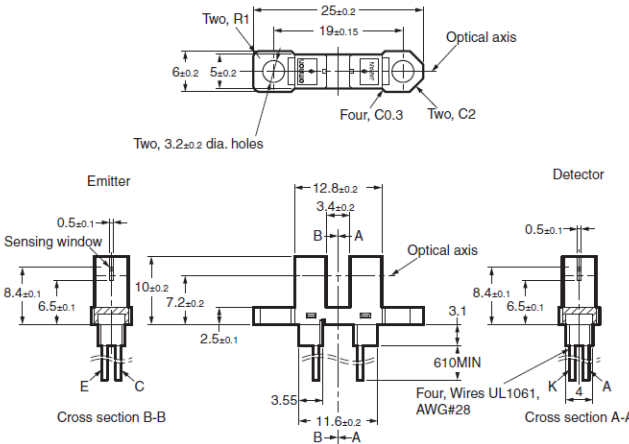


**Wire connection (Continued):**

Discontinued Model EE-SY□13	Suggested replacement Model EE-SY□10																								
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<p><b>Discontinued Model EE-SPY415</b></p> <p><b>Wire connection</b></p>  	<p><b>Suggested replacement Model B5W-LB2112-1</b></p> <p><b>Wire connection</b></p>   <table border="1" data-bbox="1201 1239 1445 1354"> <thead> <tr> <th>Terminal No.</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND</td> </tr> <tr> <td>2</td> <td>Vout</td> </tr> <tr> <td>3</td> <td>Vcc</td> </tr> </tbody> </table>	Terminal No.	Name	1	GND	2	Vout	3	Vcc																
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3	Vcc																								

**Dimensions:**

<p align="center"><b>Discontinued Model EE-SB5-B</b></p>	<p align="center"><b>Suggested replacement Model EE-SB5</b></p>
<p><b>Dimensions</b> W × L × H: 6.35mm × 25.4mm × 11.5mm</p>  <p>Two, 3.2±0.2 dia. holes</p> <p>Optical axis</p> <p>Four, 0.25</p> <p>2.54±0.2</p>	<p><b>Dimensions</b> W × L × H: 6.35mm × 25.4mm × 11.5mm</p>  <p>Two, 3.2±0.2 dia. holes</p> <p>Optical axis</p> <p>Four, 0.5</p> <p>2.54±0.2</p>

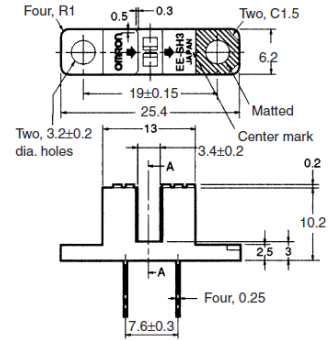
<p align="center"><b>Discontinued Model EE-SG3-B</b></p>	<p align="center"><b>Suggested replacement Model EE-SX1088</b></p>
<p><b>Dimensions</b> W × L × H: 6.35mm × 25.4mm × 11.5mm Slot width: 3.6mm</p>  <p>Two, 3.2±0.2 dia. holes</p> <p>Optical axis</p> <p>Four, 0.25</p> <p>7.62±0.3</p> <p>2.54±0.3</p>	<p><b>Dimensions</b> W × L × H: 6mm × 25mm × 10mm Slot width: 3.4mm</p>  <p>Two, R1</p> <p>Two, 3.2±0.2 dia. holes</p> <p>Optical axis</p> <p>Four, C0.3</p> <p>Two, C2</p> <p>Emitter</p> <p>Sensing window</p> <p>Detector</p> <p>Optical axis</p> <p>Four Wires UL1061, AWG#28</p> <p>Cross section B-B</p> <p>Cross section A-A</p>

**Dimensions (Continued):**

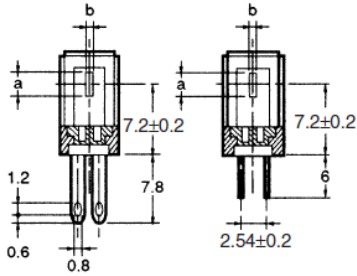
**Discontinued Model  
EE-SH3(-□)**

**Dimensions**

W × L × H: 6.2mm × 25.4mm × 10.4mm  
Slot width: 3.4mm



Cross section AA    Cross section AA

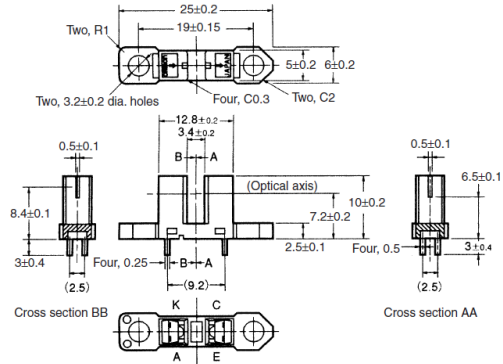


Model	Aperture (a × b)	Model	Aperture (a × b)
EE-SH3	2.1 × 0.5	EE-SH3-B	2.1 × 0.5
EE-SH3-CS	2.1 × 1.0	EE-SH3-C	2.1 × 1.0
EE-SH3-DS	2.1 × 0.2	EE-SH3-D	2.1 × 0.2
EE-SH3-GS	0.5 × 2.1	EE-SH3-G	0.5 × 2.1

**Suggested replacement  
Model EE-SX1088 / EE-SX1096**

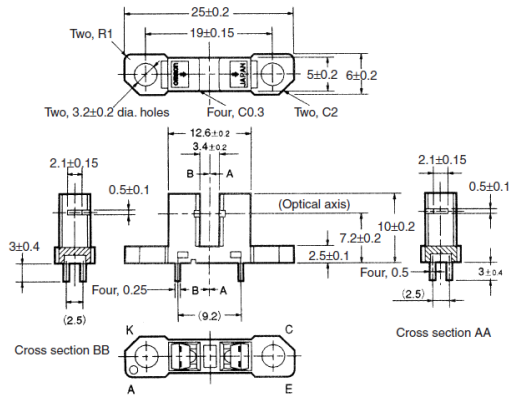
**Dimensions**

Model EE-SX1088  
W × L × H: 6mm × 25mm × 10mm  
Slot width: 3.4mm



**Model EE-SX1096**

W × L × H: 6mm × 25mm × 10mm  
Slot width: 3.4mm



**Dimensions (Continued):**

<p align="center"><b>Discontinued Model EE-SX1023-W1</b></p>	<p align="center"><b>Suggested replacement Model EE-SX1088-W11</b></p>
<p><b>Dimensions</b>                      W × L × H: 6mm × 15.2mm × 9.2mm                      Slot width: 2.1mm</p>	<p><b>Dimensions</b>                      W × L × H: 6mm × 25mm × 13.1mm                      Slot width: 3.4mm</p>

<p align="center"><b>Discontinued Model EE-SX1057</b></p>	<p align="center"><b>Suggested replacement Model EE-SX1071</b></p>
<p><b>Dimensions</b>                      W × L × H: 6.35mm × 13mm × 11.7mm                      Slot width: 3.6mm</p>	<p><b>Dimensions</b>                      W × L × H: 6.2mm × 13.6mm × 10.4mm                      Slot width: 3.4mm</p>

**Dimensions (Continued):**

<p align="center"><b>Discontinued Model EE-SX1115</b></p>	<p align="center"><b>Suggested replacement Model EE-SX1042</b></p>
<p><b>Dimensions</b>  <math>W \times L \times H: 5\text{mm} \times 14\text{mm} \times 14.7\text{mm}</math>                      Slot width: 5mm</p> <p>Technical drawing of discontinued model EE-SX1115. It includes a top view showing four slots with a width of 5mm and a pitch of 14mm. The total length is 14.5mm. The drawing also shows side views and cross-section AA, indicating a slot width of 5mm and a total height of 14.7mm. Specific features include four fillets with a radius of 0.1mm and four chamfers with a 0.3mm angle. The optical axis is shown passing through the center of the device.</p>	<p><b>Dimensions</b>  <math>W \times L \times H: 5\text{mm} \times 14\text{mm} \times 14.7\text{mm}</math>                      Slot width: 5mm</p> <p>Technical drawing of suggested replacement model EE-SX1042. It includes a top view showing four slots with a width of 5mm and a pitch of 14mm. The total length is 14.5mm. The drawing also shows side views and cross-section AA, indicating a slot width of 5mm and a total height of 14.7mm. The drawing is simplified compared to the discontinued model, with a chamfer of 0.3mm and a fillet of 0.1mm. The optical axis is shown passing through the center of the device.</p>

<p align="center"><b>Discontinued Model EE-SX□01</b></p>	<p align="center"><b>Suggested replacement Model EE-SX□98</b></p>
<p><b>Dimensions</b>  <math>W \times L \times H: 6.2\text{mm} \times 15.4\text{mm} \times 10.4\text{mm}</math>                      Slot width: 3.4mm</p> <p>Technical drawing of discontinued model EE-SX□01. It includes a top view showing five slots with a width of 3.4mm and a pitch of 15.4mm. The total length is 15.4mm. The drawing also shows side views and cross-section AA, indicating a slot width of 3.4mm and a total height of 10.4mm. The drawing includes a center mark and an optical axis. Specific features include a chamfer of 0.3mm and a fillet of 0.5mm. The optical axis is shown passing through the center of the device.</p>	<p><b>Dimensions</b>  <math>W \times L \times H: 5\text{mm} \times 12.2\text{mm} \times 10\text{mm}</math>                      Slot width: 3mm</p> <p>Technical drawing of suggested replacement model EE-SX□98. It includes a top view showing five slots with a width of 3mm and a pitch of 12.2mm. The total length is 12.2mm. The drawing also shows side views and cross-section AA, indicating a slot width of 3mm and a total height of 10mm. The drawing includes a chamfer of 0.3mm and a fillet of 0.5mm. The optical axis is shown passing through the center of the device.</p>

**Dimensions (Continued):**

Discontinued Model EE-SY□13	Suggested replacement Model EE-SY□10
<p><b>Dimensions</b> W × L × H: 6.2mm × 12mm × 6mm</p>	<p><b>Dimensions</b> W × L × H: 4.6mm × 12mm × 4.8mm</p>

Discontinued Model EE-SPY415	Suggested replacement Model B5W-LB2112-1
<p><b>Dimensions</b> W × L × H: 9.6mm × 45mm × 11mm</p>	<p><b>Dimensions</b> W × L × H: 8.4mm × 40mm × 15.9mm</p>

**Characteristics:**

Item	Discontinued Model EE-SB5-B	Suggested replacement Model EE-SB5
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Collector–Emitter voltage</b>	Maximum Ratings 30 V	
<b>Detector Collector current</b>	Maximum Ratings 20mA	
<b>Detector Collector dissipation</b>	Maximum Ratings 100 mW	
<b>Operating temperature</b>	-25°C ~ 80°C	
<b>Storage temperature</b>	-30°C ~ 80°C	
<b>Emitter Forward voltage</b>	TYP:1.2 V MAX:1.5 V (Conditions IF=30mA)	
<b>Emitter Reverse current</b>	TYP:0.01 uA MAX:10 uA (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 940nm (Conditions IF=20mA)	
<b>Detector Light current</b>	MIN:200 uA MAX:2000 uA (Conditions IF=20mA, VCE=10V)	
<b>Detector Dark current</b>	TYP:2 nA MAX: 200 nA (VCE=10V, 0 lx)	
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:850 nm (Conditions VCE=10V)	
<b>Rising time</b>	TYP:30 us (Conditions VCC=5V, RL=1kΩ, IL=1mA)	
<b>Falling time</b>	TYP:30 us (Conditions VCC=5V, RL=1kΩ, IL=1mA)	

**Characteristics (Continued):**

Item	Discontinued Model EE-SG3-B	Suggested replacement Model EE-SX1088
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Collector–Emitter voltage</b>	Maximum Ratings 30 V	
<b>Detector Collector current</b>	Maximum Ratings 20mA	
<b>Detector Collector dissipation</b>	Maximum Ratings 100 mW	
<b>Operating temperature</b>	-25°C ~ 85°C	
<b>Storage temperature</b>	-40°C ~ 85°C	-30°C ~ 100°C
<b>Emitter Forward voltage</b>	TYP:1.2 V MAX:1.5 V (Conditions IF=30mA)	
<b>Emitter Reverse current</b>	TYP:0.01 $\mu$ A MAX:10 $\mu$ A (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 940nm (Conditions IF=30mA)	TYP: 940nm (Conditions IF=20mA)
<b>Detector Light current</b>	MIN:2 mA MAX:40 mA (Conditions IF=15mA, VCE=10V)	MIN:0.5 mA MAX:14 mA (Conditions IF=20mA, VCE=10V)
<b>Detector Dark current</b>	TYP:2 nA MAX: 200 nA (VCE=10V, 0 lx)	TYP:2 nA MAX: 200 nA (VCE=10V, 0 lx)
<b>Detector Collector–Emitter saturated voltage</b>	TYP:0.1 V MAX: 0.4 V (Conditions IF=20mA, IL=0.3mA)	TYP:0.15 V MAX: 0.4 V (Conditions IF=20mA, IL=0.1mA)
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:850 nm (Conditions VCE=10V)	
<b>Rising time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	
<b>Falling time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	



**Characteristics (Continued):**

Item	Discontinued Model EE-SH3(-□)	Suggested replacement Model EE-SX1088 / EE-SX1096
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Collector–Emitter voltage</b>	Maximum Ratings 30 V	
<b>Detector Collector current</b>	Maximum Ratings 20mA	
<b>Detector Collector dissipation</b>	Maximum Ratings 100 mW	
<b>Operating temperature</b>	-25°C ~ 85°C	
<b>Storage temperature</b>	-30°C ~ 100°C	
<b>Emitter Forward voltage</b>	TYP:1.2 V MAX:1.5 V (Conditions IF=30mA)	
<b>Emitter Reverse current</b>	TYP:0.01 $\mu$ A MAX:10 $\mu$ A (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 940nm (Conditions IF=20mA)	
<b>Detector Light current</b>	EE-SH3/EE-SH3-B MIN:0.5 mA MAX:14 mA EE-SH3-C/EE-SH3-CS MIN:1 mA MAX:28 mA EE-SH3-D/EE-SH3-DS MIN:0.1 mA EE-SH3-G/EE-SH3-GS MIN:0.5 mA MAX:14 mA (Conditions IF=20mA, VCE=10V)	MIN:0.5 mA MAX:14 mA (Conditions IF=20mA, VCE=10V)
<b>Detector Dark current</b>	TYP:2 nA MAX: 200 nA (VCE=10V, 0 lx)	
<b>Detector Collector–Emitter saturated voltage</b>	EE-SH3/EE-SH3-B/EE-SH3-C/ EE-SH3-CS TYP:0.1 V MAX: 0.4 V EE-SH3-D/EE-SH3-DS TYP: - MAX: - EE-SH3-G/EE-SH3-GS TYP:0.1 V MAX: 0.4 V (Conditions IF=20mA, IL=0.1mA)	EE-SX1088 TYP:0.15 V MAX: 0.4 V EE-SX1096 TYP:0.15 V MAX: 0.4 V (Conditions IF=20mA, IL=0.1mA)
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:850 nm (Conditions VCE=5V)	
<b>Rising time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	
<b>Falling time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	

**Characteristics (Continued):**

Item	Discontinued Model EE-SX1023-W1	Suggested replacement Model EE-SX1088-W11
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Collector–Emitter voltage</b>	Maximum Ratings 30 V	
<b>Detector Collector current</b>	Maximum Ratings 20mA	
<b>Detector Collector dissipation</b>	Maximum Ratings 100 mW	
<b>Operating temperature</b>	-25°C ~ 85°C	-25°C ~ 80°C
<b>Storage temperature</b>	-30°C ~ 100°C	-25°C ~ 85°C
<b>Emitter Forward voltage</b>	TYP:1.2 V MAX:1.5 V (Conditions IF=30mA)	
<b>Emitter Reverse current</b>	TYP:0.01 $\mu$ A MAX:10 $\mu$ A (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 940nm (Conditions IF=20mA)	
<b>Detector Light current</b>	MIN:0.5 mA (Conditions IF=20mA, VCE=5V)	MIN:0.5 mA MAX:14 mA (Conditions IF=20mA, VCE=10V)
<b>Detector Dark current</b>	TYP:2 nA MAX: 200 nA (VCE=10V, 0 lx)	
<b>Detector Collector–Emitter saturated voltage</b>	TYP:0.1 V MAX: 0.4 V (Conditions IF=20mA, IL=0.1mA)	TYP:0.15 V MAX: 0.4 V (Conditions IF=20mA, IL=0.1mA)
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:850 nm (Conditions VCE=5V)	
<b>Rising time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	
<b>Falling time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	

### Characteristics (Continued):

Item	Discontinued Model EE-SX1057	Suggested replacement Model EE-SX1071
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Collector–Emitter voltage</b>	Maximum Ratings 30 V	
<b>Detector Emitter-Collector voltage</b>	Maximum Ratings 5 V	-
<b>Detector Collector current</b>	Maximum Ratings 20mA	
<b>Detector Collector dissipation</b>	Maximum Ratings 100 mW	
<b>Operating temperature</b>	-25°C ~ 85°C	-25°C ~ 80°C
<b>Storage temperature</b>	-30°C ~ 100°C	-25°C ~ 85°C
<b>Emitter Forward voltage</b>	TYP:1.15 V MAX:1.5 V (Conditions IF=30mA)	TYP:1.2 V MAX:1.5 V (Conditions IF=30mA)
<b>Emitter Reverse current</b>	TYP:0.01 uA MAX:10 uA (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 940nm (Conditions IF=20mA)	
<b>Detector Light current</b>	MIN:1.5 mA MAX:8 mA (Conditions IF=15mA, VCE=2V)	MIN:0.5 mA MAX:14 mA (Conditions IF=20mA, VCE=10V)
<b>Detector Dark current</b>	TYP:2 nA MAX: 200 nA (VCE=10V, 0 lx)	
<b>Detector Collector–Emitter saturated voltage</b>	MAX: 0.4 V (Conditions IF=30mA, IL=0.1mA)	TYP:0.15 V MAX: 0.4 V (Conditions IF=20mA, IL=0.1mA)
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:850 nm (Conditions VCE=10V)	
<b>Rising time</b>	TYP:4 us MAX:20 us (Conditions VCC=5V, RL=100Ω, IL=5mA)	TYP:4 us (Conditions VCC=5V, RL=100Ω, IL=5mA)
<b>Falling time</b>	TYP:4 us MAX:20 us (Conditions VCC=5V, RL=100Ω, IL=1mA)	TYP:4 us (Conditions VCC=5V, RL=100Ω, IL=1mA)

**Characteristics (Continued):**

Item	Discontinued Model EE-SX1115	Suggested replacement Model EE-SX1042
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Collector–Emitter voltage</b>	Maximum Ratings 30 V	
<b>Detector Collector current</b>	Maximum Ratings 20mA	
<b>Detector Collector dissipation</b>	Maximum Ratings 100 mW	
<b>Operating temperature</b>	-25°C ~ 85°C	
<b>Storage temperature</b>	-30°C ~ 100°C	
<b>Emitter Forward voltage</b>	TYP:1.2 V MAX:1.5 V (Conditions IF=30mA)	
<b>Emitter Reverse current</b>	TYP:0.01 $\mu$ A MAX:10 $\mu$ A (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 940nm (Conditions IF=20mA)	
<b>Detector Light current</b>	MIN:0.55 mA MAX:14 mA (Conditions IF=20mA, VCE=10V)	MIN:0.5 mA MAX:10 mA (Conditions IF=20mA, VCE=10V)
<b>Detector Dark current</b>	TYP:2 nA MAX: 200 nA (VCE=10V, 0 lx)	
<b>Detector Collector–Emitter saturated voltage</b>	TYP:0.1 V MAX: 0.4 V (Conditions IF=20mA, IL=0.1mA)	
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:850 nm (Conditions VCE=10V)	
<b>Rising time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	
<b>Falling time</b>	TYP:4 $\mu$ s (Conditions VCC=5V, RL=100 $\Omega$ , IL=5mA)	

**Characteristics (Continued):**

Item	Discontinued Model Model EE-SX□01	Suggested replacement Model EE-SX□98
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Power supply voltage</b>	Maximum Ratings 16 V	
<b>Detector Output voltage</b>	Maximum Ratings 28 V	
<b>Detector Output current</b>	Maximum Ratings 20mA	
<b>Detector Permissible output dissipation</b>	Maximum Ratings 250 mW	
<b>Operating temperature</b>	-40°C ~ 75°C	
<b>Storage temperature</b>	-40°C ~ 85°C	
<b>Emitter Forward voltage</b>	TYP:1.2 V MAX:1.5 V (Conditions IF=20mA)	
<b>Emitter Reverse current</b>	TYP:0.01 uA MAX:10 uA (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 940nm (Conditions IF=20mA)	
<b>Detector Low-level output voltage</b>	TYP:0.12 V MAX:0.4 V (Conditions VCC=4.5~16V, IOL=16mA, IF=0mA:EE-SX301 IF=8mA:EE-SX401)	TYP:0.12 V MAX:0.4 V (Conditions VCC=4.5~16V, IOL=16mA, IF=0mA:EE-SX398 IF=8mA:EE-SX498)
<b>Detector High-level output voltage</b>	MIN:15 V (Conditions VCC=16V, RL=1kΩ, IF=8mA:EE-SX301 IF=0mA:EE-SX401)	MIN:15 V (Conditions VCC=16V, RL=1kΩ, IF=8mA:EE-SX398 IF=0mA:EE-SX498)
<b>Detector Current consumption</b>	TYP:3.2 mA MAX:10 mA (Conditions VCC=16V)	
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:870 nm (Conditions VCE=4.5~16V)	
<b>LED current when output is OFF</b>	TYP:3mA MAX:8mA (Conditions VCE=4.5~16V, EE-SX301)	TYP:2 mA MAX:5 mA (Conditions VCE=4.5~16V, EE-SX398)
<b>LED current when output is ON</b>	TYP:3mA MAX:8mA (Conditions VCE=4.5~16V, EE-SX401)	TYP:2 mA MAX:5 mA (Conditions VCE=4.5~16V, EE-SX498)
<b>Hysteresis</b>	TYP:15 % (Conditions VCE=4.5~16V)	
<b>Response frequency</b>	MIN:3 kHz (Conditions VCE=4.5~16V, IF=15mA, IOL=16mA)	
<b>Response delay time</b>	TYP:3 us (Conditions VCC=4.5~16V, IF=15mA, IOL=16mA) EE-SX301: raise time EE-SX401: falling time	TYP:3 us (Conditions VCC=5V, RL=100Ω, IL=5mA) EE-SX398: raise time EE-SX498: falling time
<b>Response delay time</b>	TYP:20 us (Conditions VCC=4.5~16V, IF=15mA, IOL=16mA) EE-SX301: falling time EE-SX401: raise time	TYP:20 us (Conditions VCC=4.5~16V, IF=15mA, IOL=16mA) EE-SX398: falling time EE-SX498: raise time

**Characteristics (Continued):**

Item	Discontinued Model EE-SY□13	Suggested replacement Model EE-SY□10
<b>Emitter Forward current</b>	Maximum Ratings 50 mA	
<b>Emitter Reverse voltage</b>	Maximum Ratings 4 V	
<b>Detector Power supply voltage</b>	Maximum Ratings 16 V	
<b>Detector Output voltage</b>	Maximum Ratings 28 V	
<b>Detector Output current</b>	Maximum Ratings 20mA	
<b>Detector Permissible output dissipation</b>	Maximum Ratings 250 mW	
<b>Operating temperature</b>	-40°C ~ 75°C	
<b>Storage temperature</b>	-40°C ~ 85°C	
<b>Emitter Forward voltage</b>	TYP:1.2 V MAX:1.5 V (Conditions IF=20mA)	
<b>Emitter Reverse current</b>	TYP:0.01 uA MAX:10 uA (Conditions VR=4V)	
<b>Emitter Peak emission wavelength</b>	TYP: 920nm (Conditions IF=20mA)	
<b>Detector Low-level output voltage</b>	TYP:0.12 V MAX:0.4 V (Conditions VCC=4.5~16V, IOL=16mA, without incident:EE-SY313, with incident:EE-SY413)	TYP:0.12 V MAX:0.4 V (Conditions VCC=4.5~16V, IOL=16mA, without incident:EE-SY313, with incident:EE-SY413)
<b>Detector High-level output voltage</b>	MIN:15 V (Conditions VCC=16V, RL=1kΩ, with incident:EE-SY313, without incident:EE-SY413)	MIN:15 V (Conditions VCC=16V, RL=1kΩ, with incident:EE-SY310, without incident:EE-SY410)
<b>Detector Current consumption</b>	TYP:3.2 mA MAX:10 mA (Conditions VCC=16V)	
<b>Detector Peak spectral sensitivity wavelength</b>	TYP:870 nm (Conditions VCE=4.5~16V)	
<b>LED current when output is OFF</b>	TYP:10mA MAX:20mA (Conditions VCE=4.5~16V, EE-SY313)	TYP:6 mA MAX:15 mA (Conditions VCE=4.5~16V, EE-SY310)
<b>LED current when output is ON</b>	TYP:10mA MAX:20mA (Conditions VCE=4.5~16V, EE-SY413)	TYP:6 mA MAX:15 mA (Conditions VCE=4.5~16V, EE-SY410)
<b>Hysteresis</b>	TYP:15 % (Conditions VCE=4.5~16V)	
<b>Response frequency</b>	MIN:50 pps (Conditions VCE=4.5~16V, IF=20mA, IOL=16mA)	MIN:50 pps (Conditions VCE=4.5~16V, IF=15mA, IOL=16mA)
<b>Response delay time</b>	TYP:3 us (Conditions VCC=4.5~16V, IF=15mA, IOL=16mA) EE-SY313: raise time EE-SY413: falling time	TYP:3 us (Conditions VCC=5V, RL=100Ω, IL=5mA) EE-SY310: raise time EE-SY410: falling time
<b>Response delay time</b>	TYP:20 us (Conditions VCC=4.5~16V, IF=15mA, IOL=16mA) EE-SY313: falling time EE-SY410: raise time	TYP:20 us (Conditions VCC=4.5~16V, IF=15mA, IOL=16mA) EE-SX310: falling time EE-SY413: raise time

**Characteristics (Continued):**

Item	Discontinued Model EE-SPY415	Suggested replacement Model B5W-LB2112-1
<b>Power supply voltage</b>	Maximum Ratings 7 V	Maximum Ratings 26.4 V
<b>Output voltage</b>	Maximum Ratings 16 V	Maximum Ratings 26.4 V
<b>Output current</b>	Maximum Ratings 30 mA	Maximum Ratings 60 mA
<b>Operating temperature</b>	-25°C ~ 85°C	-10°C ~ 60°C
<b>Storage temperature</b>	-30°C ~ 100°C	-25°C ~ 80°C
<b>Current consumption</b>	MAX: 25 mA (Conditions With and without incident)	MAX: 20 mA (Conditions With and without incident)
<b>Low-level output voltage</b>	MAX: 0.4 V (Conditions IOUT=20 mA , With incident)	MAX: 0.8 V (Conditions IOUT=50 mA) MAX: 0.32 V (Conditions IOUT=10 mA)
<b>High-level output voltage</b>	MIN: (VCC×0.9) (Conditions VOUT= VCC, RL=1kΩ , Without incident)	-
<b>Response delay time</b>	MAX:1 ms (Conditions VOUT= VCC, RL=1kΩ )	MAX:1 ms (Conditions VOUT= VCC )

\* Sales teams should communicate this discontinuation with their OEM's and CEM's.  
For further technical support and any questions, please communicate with Product Marketing.

Specifications in this product news are as of the issue date and are subject to change without notice.  
Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.  
This PCN is intended for use in the Americas  
Last time buy dates are subject to change based on availability