

NO: PMS - 038
DATE: July 2025

PRODUCT: Miscellaneous – Photomicrosensors
TYPE: DISCONTINUATION – Partial (not all)

Partial Discontinuation Miscellaneous - Photomicrosensors

In an effort to streamline our product offering, Omron will discontinue select models of Non-Amplified Photomicrosensors; effective March 31, 2026. The suggested replacements will have differences with electrical characteristics and various dimensions including; Case dimensions, Slot Width and Depth (transmissive versions), Sensing Distance (reflective versions), Aperture Size and Orientation, PCB layout and Connectorization (wired models). As such, redesign of existing applications and circuits likely will be required and is recommended. Also, for new circuit designs, please consider Omron's suggested Surface Mount alternatives. The following notice will list the models affected by the partial discontinuation; should you have any questions, however, please communicate with the Sensor Product Manager.

Last Order Date (Last Time Buy Date)

End of March 2026 (March 31, 2026)

NOTE 1: Only the listed models of Non-Amplified Photomicrosensors are being discontinued.

NOTE 2: Please use careful consideration when evaluating the suggested replacements.

List of Discontinued Models

Discontinued Models	Suggested Replacements (For new designs)	Suggested Models – Alternate (For new designs)
EE-SJ3-C	EE-SX1071	EE-SX1350
EE-SJ3-D	EE-SX1071	
EE-SJ3-G	EE-SX1071	
EE-SJ5-B	EE-SX1081	
EE-SJ8-B	EE-SX1070	
EE-SV3-C	EE-SV3-B	
EE-SV3-CS	EE-SV3	
EE-SV3-D	EE-SV3-B	
EE-SV3-DS	EE-SV3	
EE-SV3-G	EE-SV3-B	
EE-SV3-GS	EE-SV3	
EE-SX199	EE-SX198	
EE-SX493	EE-SX1046	EE-SX4350
EE-SX1031	EE-SX1321	EE-SX1321
EE-SX1160-W11	EE-SX1070	EE-SX3163-P1 EE-SX4163-P1
EE-SX3160-W11	EE-SX3070	EE-SX3163-P1
EE-SX4160-W11	EE-SX4070	EE-SX4163-P1
EE-SY169	EE-SY169B	EE-SY1201
EE-SY169A-D	EE-SY169A	
EE-SY171	EE-SY110	
EE-SY310	EE-SY110	
EE-SY410	EE-SY110	

Suggested Replacements

Discontinued Models	Suggested Replacements	Body Color	Dimensions	Wire connection	Mounting Dimensions	Charac-teristics	Operation ratings	Operation methods
EE-SJ3-C / -D / -G	EE-SX1071	**	*	**	**	**	-	-
EE-SJ5-B	EE-SX1081	**	--	**	*	**	-	-
EE-SJ8-B EE-SX1160-W11	EE-SX1070	**	--	*	--	*	-	-
EE-SV3-C / -D / -G	EE-SV3-B	**	**	**	**	**	-	-
EE-SV3-CS / -DS / -GS	EE-SV3	**	**	**	**	**	-	-
EE-SX199	EE-SX198	**	**	**	**	**	-	-
EE-SX493	EE-SX1046	**	*	--	--	*	-	-
EE-SX1031	EE-SX1321	**	--	--	--	*	-	-
EE-SX3160-W11	EE-SX3070	**	--	*	--	*	-	-
EE-SX4160-W11	EE-SX4070	**	--	*	--	*	-	-
EE-SY169	EE-SY169B	**	**	**	**	**	-	-
EE-SY169A-D	EE-SY169A	**	**	**	**	**	-	-
EE-SY171 EE-SY310 / EE-SY410	EE-SY110	**	*	*	*	*	-	-

Suggested Replacements - Alternate

Discontinued Models	Suggested Replacements	Body Color	Dimensions	Wire connection	Mounting Dimensions	Charac-teristics	Operation ratings	Operation methods
EE-SJ3-C / -D / -G EE-SJ5-B EE-SJ8-B EE-SV3-C / -D / -G EE-SV3-CS / -DS / -GS EE-SX199	EE-SX1350	**	--	*	--	*	-	-
EE-SX493	EE-SX4350	**	--	*	--	*	-	-
EE-SX1160-W11 EE-SX3160-W11	EE-SX3163-P1	**	--	--	*	*	-	-
EE-SX1160-W11 EE-SX4160-W11	EE-SX4163-P1	**	--	--	*	*	-	-
EE-SY169 / SY169A-D EE-SY171 EE-SY310 / EE-SY410	EE-SY1201	**	--	--	--	*	-	-

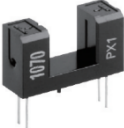
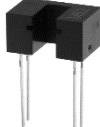
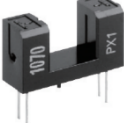
** : Compatible

* : The change is a little/Almost compatible

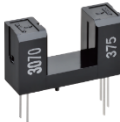
-- : Not compatible

- : No corresponding specification

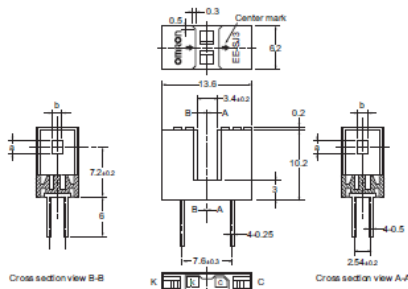
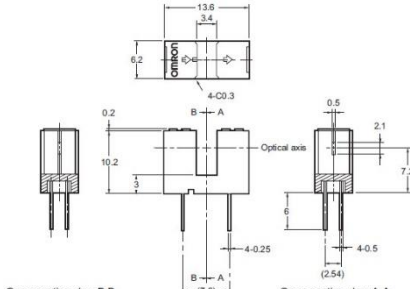
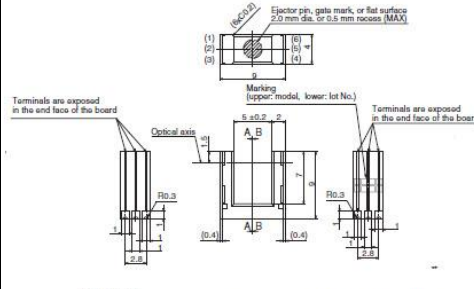
Appearance (Not shown to scale or actual size)

Discontinued Models	Suggested Replacements (For new designs)	Suggested Models – Alternate (For new designs)
EE-SJ3-C / EE-SJ3-D / EE-SJ3-G 	EE-SX1071 	
EE-SJ5-B 	EE-SX1081 	
EE-SJ8-B 	EE-SX1070 	
EE-SV3-C / EE-SV3-D / EE-SV3-G 	EE-SV3-B 	
EE-SV3-CS / EE-SV3-DS / EE-SV3-GS 	EE-SV3 	
EE-SX199 	EE-SX198 	
EE-SX493 	EE-SX1046 	EE-SX4350 
EE-SX1031 	EE-SX1321 	
EE-SX1160-W11 	EE-SX1070 	EE-SX3163-P1 / EE-SX4163-P1 

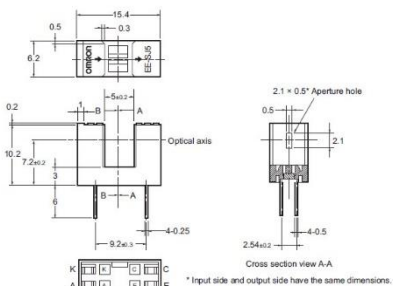
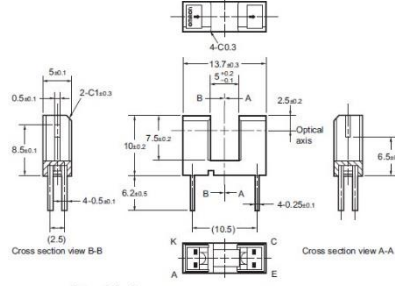
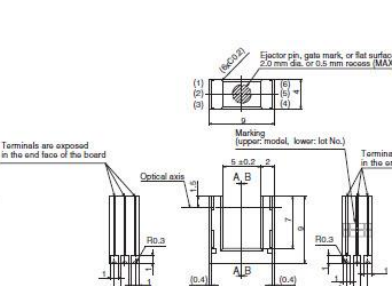
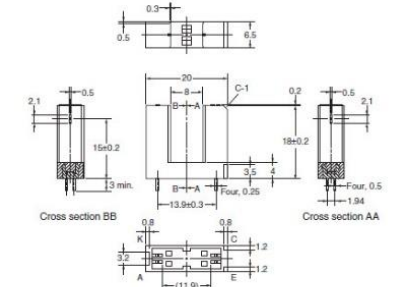
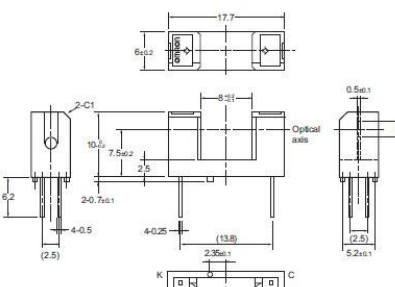
Appearance (Not shown to scale or actual size) - - continued.

Discontinued Models	Suggested Replacements (For new designs)	Suggested Models – Alternate (For new designs)	
EE-SX3160-W11 / EE-SX4160-W11 	EE-SX3070 / EE-SX4070 	EE-SX3163-P1 / EE-SX4163-P1 	
EE-SY169 / EE-SY169A-D 	EE-SY169B / EE-SY169A 	EE-SY1201 	
EE-SY171 	EE-SY110 		
EE-SY310 / EE-SY410 			

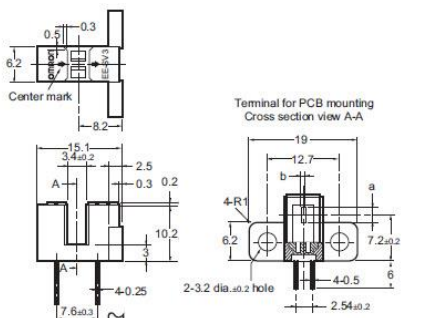
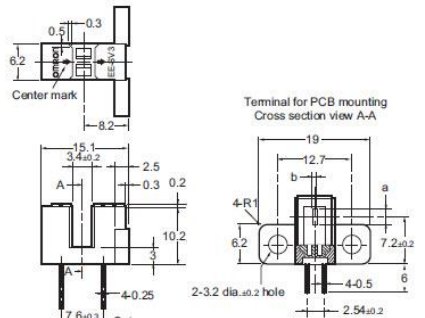
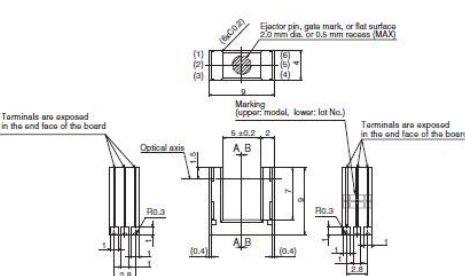
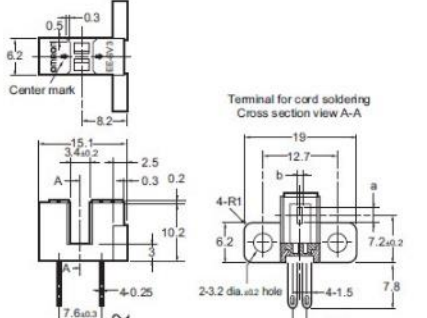
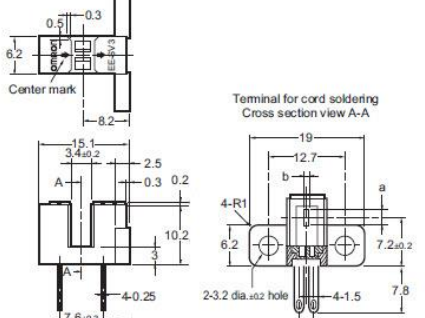
Dimensions and Connections

Discontinued Models	Suggested Replacement (For new designs)	Suggested Models – Alternate (For new designs)
EE-SJ3-C / EE-SJ3-D / EE-SJ3-G	EE-SX1071	EE-SX1350
Dimensions W×L×H : 13.6mm×6.2mm×10.2mm Slot width : 3.4mm	Dimensions W×L×H : 13.6mm×6.2mm×10.2mm Slot width : 3.4mm	Dimensions W×L×H : 9mm×4mm×9mm Slot width : 5mm
 Technical drawing of EE-SJ3-C / EE-SJ3-D / EE-SJ3-G showing dimensions and internal circuit. Dimensions include 0.3, 0.5, 0.2, 13.6, 3.4, 10.2, 7.2, 4.0, 2.5, 4.0, 2.5, 7.6, 4.0, 2.5. Internal circuit shows a PNP transistor with terminals K, C, A, and E.	 Technical drawing of EE-SX1071 showing dimensions and internal circuit. Dimensions include 13.6, 3.4, 6.2, 0.2, 10.2, 4.0, 2.5, 7.2, 4.0, 2.5, 7.6, 4.0, 2.5. Internal circuit shows a PNP transistor with terminals K, C, A, and E.	 Technical drawing of EE-SX1350 showing dimensions and internal circuit. Dimensions include 9, 4, 9, 5, 0.2, 2, 0.4, 0.3, 0.5, 0.2, 0.3, 0.5

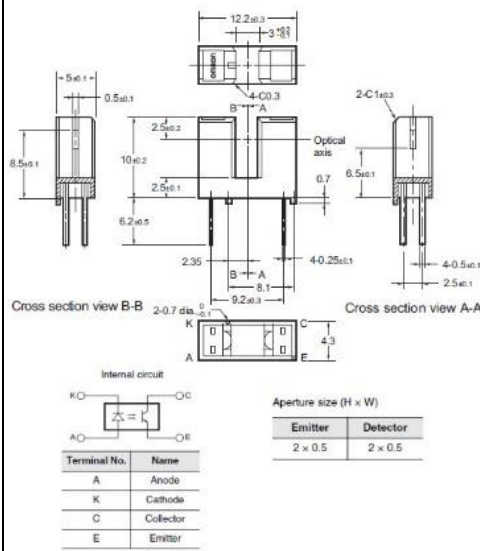
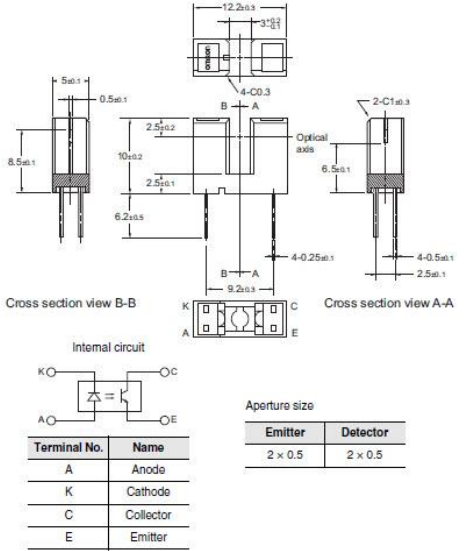
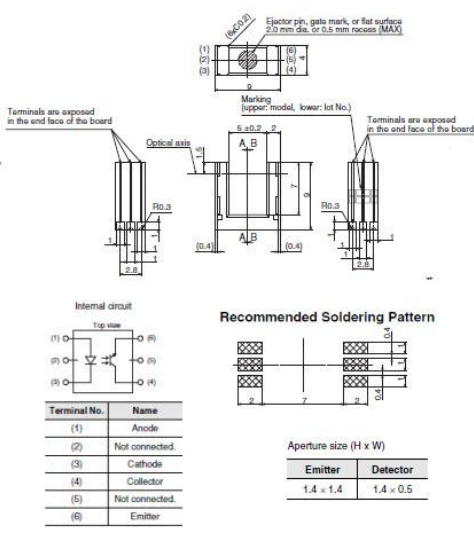
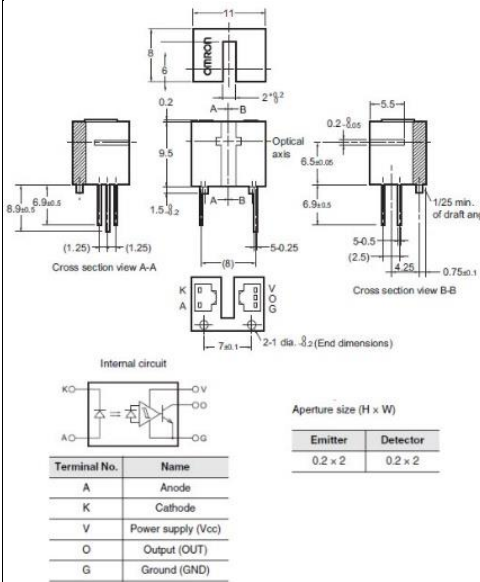
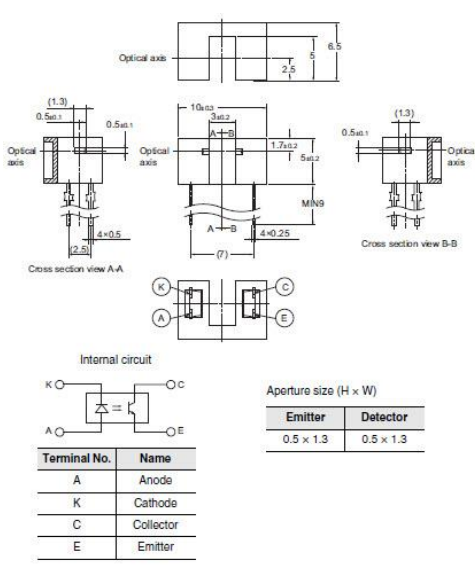
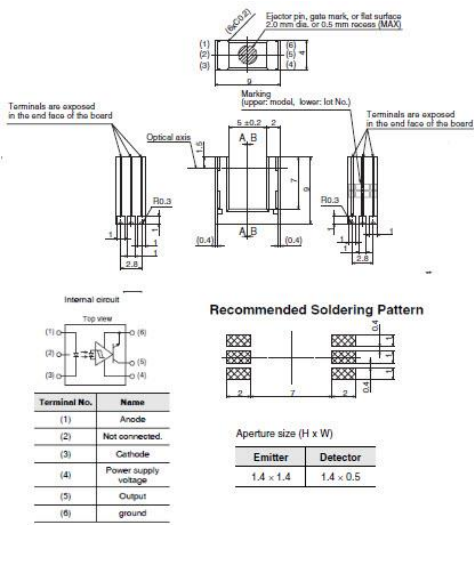
Dimensions and Connections - - continued.

Discontinued Models	Suggested Replacement (For new designs)	Suggested Models – Alternate (For new designs)																																														
EE-SJ5-B Dimensions W×L×H : 15.4mm×6.2mm×10.2mm Slot width : 5mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>2.1 × 0.5</td><td>2.1 × 0.5</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Emitter	Detector	2.1 × 0.5	2.1 × 0.5	EE-SX1081 Dimensions W×L×H : 13.7mm×5mm×10mm Slot width : 5mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>2 × 0.5</td><td>2 × 0.5</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Emitter	Detector	2 × 0.5	2 × 0.5	EE-SX1350 Dimensions W×L×H : 9mm×4mm×9mm Slot width : 5mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>(1)</td><td>Anode</td></tr><tr><td>(2)</td><td>Not connected</td></tr><tr><td>(3)</td><td>Cathode</td></tr><tr><td>(4)</td><td>Collector</td></tr><tr><td>(5)</td><td>Not connected</td></tr><tr><td>(6)</td><td>Emitter</td></tr></table> Recommended Soldering Pattern Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>1.4 × 1.4</td><td>1.4 × 0.5</td></tr></table>	Terminal No.	Name	(1)	Anode	(2)	Not connected	(3)	Cathode	(4)	Collector	(5)	Not connected	(6)	Emitter	Emitter	Detector	1.4 × 1.4	1.4 × 0.5
Terminal No.	Name																																															
A	Anode																																															
K	Cathode																																															
C	Collector																																															
E	Emitter																																															
Emitter	Detector																																															
2.1 × 0.5	2.1 × 0.5																																															
Terminal No.	Name																																															
A	Anode																																															
K	Cathode																																															
C	Collector																																															
E	Emitter																																															
Emitter	Detector																																															
2 × 0.5	2 × 0.5																																															
Terminal No.	Name																																															
(1)	Anode																																															
(2)	Not connected																																															
(3)	Cathode																																															
(4)	Collector																																															
(5)	Not connected																																															
(6)	Emitter																																															
Emitter	Detector																																															
1.4 × 1.4	1.4 × 0.5																																															
EE-SJ8-B Dimensions W×L×H : 20mm×6.5mm×18mm Slot width : 8mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Aperture size (H×W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>2.1 × 0.5</td><td>2.1 × 0.5</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Emitter	Detector	2.1 × 0.5	2.1 × 0.5	EE-SX1070 Dimensions W×L×H : 17.7mm×6mm×10mm Slot width : 8mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Aperture size <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>2.2 × 0.5</td><td>2.2 × 0.5</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Emitter	Detector	2.2 × 0.5	2.2 × 0.5																			
Terminal No.	Name																																															
A	Anode																																															
K	Cathode																																															
C	Collector																																															
E	Emitter																																															
Emitter	Detector																																															
2.1 × 0.5	2.1 × 0.5																																															
Terminal No.	Name																																															
A	Anode																																															
K	Cathode																																															
C	Collector																																															
E	Emitter																																															
Emitter	Detector																																															
2.2 × 0.5	2.2 × 0.5																																															

Dimensions and Connections - - continued.

Discontinued Models	Suggested Replacement (For new designs)	Suggested Models – Alternate (For new designs)																																																		
EE-SV3-C / EE-SV3-D / EE-SV3-G	EE-SV3-B	EE-SX1350																																																		
Dimensions W×L×H : 15.1mm×6.2mm×10.2mm Slot width : 3.4mm	Dimensions W×L×H : 15.1mm×6.2mm×10.2mm Slot width : 3.4mm	Dimensions W×L×H : 9mm×4mm×9mm Slot width : 5mm																																																		
 Center mark Terminal for PCB mounting Cross section view A-A Internal circuit Aperture size <table><tr><th>Model</th><th>Aperture hole (a×b)</th></tr><tr><td>EE-SV3-C</td><td>2.1 × 1</td></tr><tr><td>EE-SV3-D</td><td>2.1 × 0.2</td></tr><tr><td>EE-SV3-G</td><td>0.5 × 2.1</td></tr></table> <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Model	Aperture hole (a×b)	EE-SV3-C	2.1 × 1	EE-SV3-D	2.1 × 0.2	EE-SV3-G	0.5 × 2.1	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	 Center mark Terminal for PCB mounting Cross section view A-A Internal circuit Aperture size <table><tr><th>Model</th><th>Aperture hole (a×b)</th></tr><tr><td>EE-SV3-B</td><td>2.1 × 0.5</td></tr></table> <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Model	Aperture hole (a×b)	EE-SV3-B	2.1 × 0.5	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	 Ejector pin, gate mark, or flat surface 2.0 mm dia. or 0.5 mm recess (MAX) Marking (upper model, lower lot No.) Terminals are exposed in the end face of the board Optical axis Internal circuit Recommended Soldering Pattern <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>(1)</td><td>Anode</td></tr><tr><td>(2)</td><td>Not connected</td></tr><tr><td>(3)</td><td>Cathode</td></tr><tr><td>(4)</td><td>Collector</td></tr><tr><td>(5)</td><td>Not connected</td></tr><tr><td>(6)</td><td>Emitter</td></tr></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>1.4 × 1.4</td><td>1.4 × 0.5</td></tr></table>	Terminal No.	Name	(1)	Anode	(2)	Not connected	(3)	Cathode	(4)	Collector	(5)	Not connected	(6)	Emitter	Emitter	Detector	1.4 × 1.4	1.4 × 0.5
Model	Aperture hole (a×b)																																																			
EE-SV3-C	2.1 × 1																																																			
EE-SV3-D	2.1 × 0.2																																																			
EE-SV3-G	0.5 × 2.1																																																			
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
C	Collector																																																			
E	Emitter																																																			
Model	Aperture hole (a×b)																																																			
EE-SV3-B	2.1 × 0.5																																																			
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
C	Collector																																																			
E	Emitter																																																			
Terminal No.	Name																																																			
(1)	Anode																																																			
(2)	Not connected																																																			
(3)	Cathode																																																			
(4)	Collector																																																			
(5)	Not connected																																																			
(6)	Emitter																																																			
Emitter	Detector																																																			
1.4 × 1.4	1.4 × 0.5																																																			
EE-SV3-CS / EE-SV3-DS / EE-SV3-GS	EE-SV3																																																			
Dimensions W×L×H : 15.1mm×6.2mm×10.2mm Slot width : 3.4mm	Dimensions W×L×H : 15.1mm×6.2mm×10.2mm Slot width : 3.4mm																																																			
 Center mark Terminal for cord soldering Cross section view A-A Internal circuit Aperture size <table><tr><th>Model</th><th>Aperture hole (a×b)</th></tr><tr><td>EE-SV3-CS</td><td>2.1 × 1</td></tr><tr><td>EE-SV3-DS</td><td>2.1 × 0.2</td></tr><tr><td>EE-SV3-GS</td><td>0.5 × 2.1</td></tr></table> <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Model	Aperture hole (a×b)	EE-SV3-CS	2.1 × 1	EE-SV3-DS	2.1 × 0.2	EE-SV3-GS	0.5 × 2.1	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	 Center mark Terminal for cord soldering Cross section view A-A Internal circuit Aperture size <table><tr><th>Model</th><th>Aperture hole (a×b)</th></tr><tr><td>EE-SV3</td><td>2.1 × 0.5</td></tr></table> <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Model	Aperture hole (a×b)	EE-SV3	2.1 × 0.5	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter																			
Model	Aperture hole (a×b)																																																			
EE-SV3-CS	2.1 × 1																																																			
EE-SV3-DS	2.1 × 0.2																																																			
EE-SV3-GS	0.5 × 2.1																																																			
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
C	Collector																																																			
E	Emitter																																																			
Model	Aperture hole (a×b)																																																			
EE-SV3	2.1 × 0.5																																																			
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
C	Collector																																																			
E	Emitter																																																			

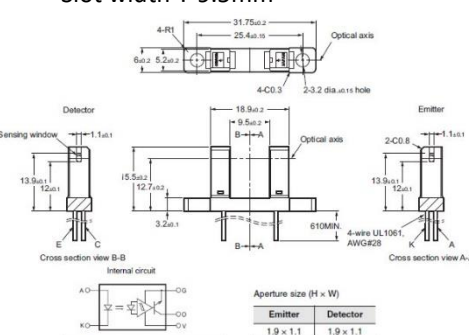
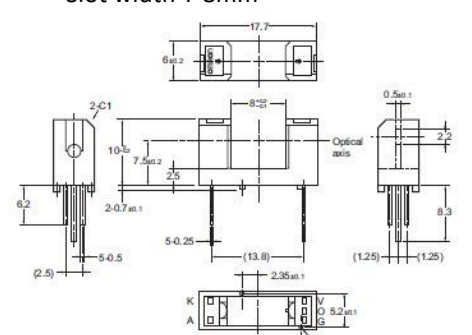
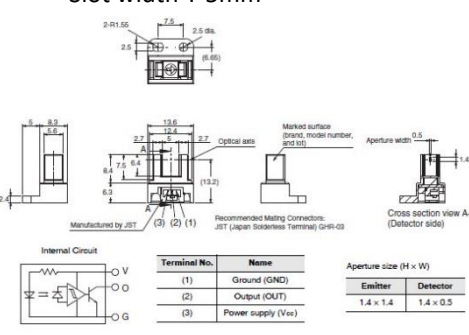
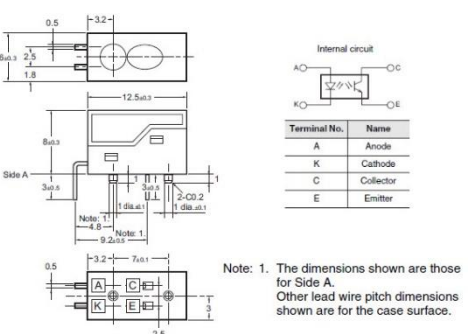
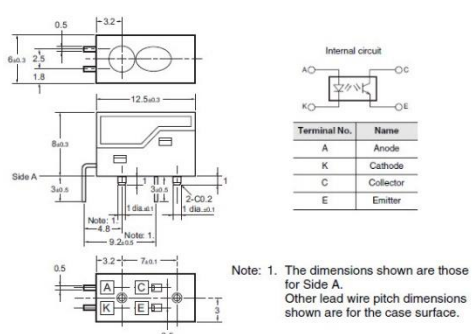
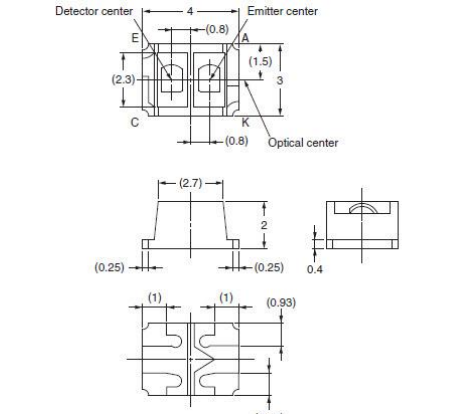
Dimensions and Connections - - continued.

Discontinued Models	Suggested Replacement (For new designs)	Suggested Models – Alternate (For new designs)																																				
EE-SX199 Dimensions W×L×H : 12.2mm×4.3mm×10mm Slot width : 3mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	EE-SX198 Dimensions W×L×H : 12.2mm×4.3mm×10mm Slot width : 3mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	EE-SX1350 Dimensions W×L×H : 9mm×4mm×9mm Slot width : 5mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>(1)</td><td>Anode</td></tr><tr><td>(2)</td><td>Not connected.</td></tr><tr><td>(3)</td><td>Cathode</td></tr><tr><td>(4)</td><td>Collector</td></tr><tr><td>(5)</td><td>Not connected.</td></tr><tr><td>(6)</td><td>Emitter</td></tr></table>	Terminal No.	Name	(1)	Anode	(2)	Not connected.	(3)	Cathode	(4)	Collector	(5)	Not connected.	(6)	Emitter		
Terminal No.	Name																																					
A	Anode																																					
K	Cathode																																					
C	Collector																																					
E	Emitter																																					
Terminal No.	Name																																					
A	Anode																																					
K	Cathode																																					
C	Collector																																					
E	Emitter																																					
Terminal No.	Name																																					
(1)	Anode																																					
(2)	Not connected.																																					
(3)	Cathode																																					
(4)	Collector																																					
(5)	Not connected.																																					
(6)	Emitter																																					
EE-SX493 Dimensions W×L×H : 11mm×8mm×9.5mm Slot width : 2mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><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></table>	Terminal No.	Name	A	Anode	K	Cathode	V	Power supply (Vcc)	O	Output (OUT)	G	Ground (GND)	EE-SX1046 Dimensions W×L×H : 10mm×6.5mm×5mm Slot width : 3mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	EE-SX4350 Dimensions W×L×H : 9mm×4mm×9mm Slot width : 5mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>(1)</td><td>Anode</td></tr><tr><td>(2)</td><td>Not connected.</td></tr><tr><td>(3)</td><td>Cathode</td></tr><tr><td>(4)</td><td>Power supply voltage</td></tr><tr><td>(5)</td><td>Output</td></tr><tr><td>(6)</td><td>ground</td></tr></table>	Terminal No.	Name	(1)	Anode	(2)	Not connected.	(3)	Cathode	(4)	Power supply voltage	(5)	Output	(6)	ground
Terminal No.	Name																																					
A	Anode																																					
K	Cathode																																					
V	Power supply (Vcc)																																					
O	Output (OUT)																																					
G	Ground (GND)																																					
Terminal No.	Name																																					
A	Anode																																					
K	Cathode																																					
C	Collector																																					
E	Emitter																																					
Terminal No.	Name																																					
(1)	Anode																																					
(2)	Not connected.																																					
(3)	Cathode																																					
(4)	Power supply voltage																																					
(5)	Output																																					
(6)	ground																																					

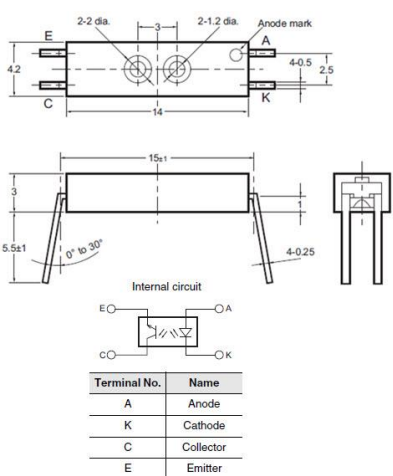
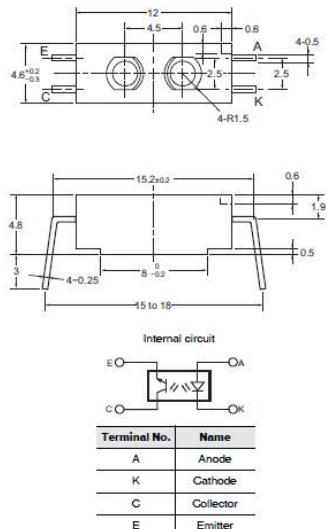
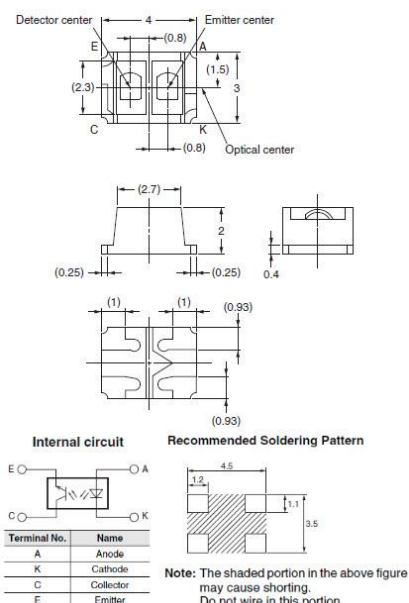
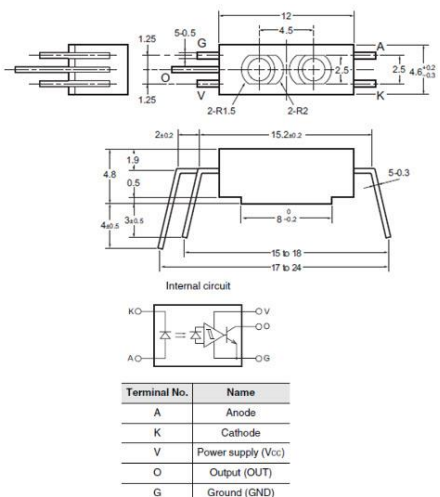
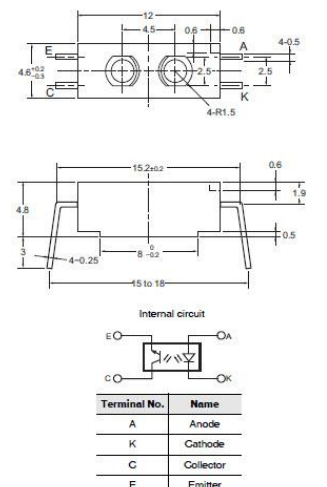
Dimensions and Connections - - continued.

Discontinued Models	Suggested Replacement (For new designs)	Suggested Models – Alternate (For new designs)																																																																					
EE-SX1031 Dimensions W×L×H : 13.6mm×13.6mm×10.2mm Slot width : 3.4mm Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>2.1 × 0.5</td><td>2.1 × 0.5</td></tr><tr><td>2ch</td><td>2ch</td></tr></table> <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Emitter	Detector	2.1 × 0.5	2.1 × 0.5	2ch	2ch	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	EE-SX1321 Dimensions W×L×H : 5.2mm×4mm×4mm Slot width : 2mm Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>(1)</td><td>Anode</td></tr><tr><td>(2)(3)</td><td>Cathode</td></tr><tr><td>(4)(5)</td><td>Emitter</td></tr><tr><td>(6)</td><td>Collector</td></tr></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>1.4×1.4</td><td>1×0.3</td></tr><tr><td></td><td>2ch</td></tr></table> Recommended Soldering Pattern	Terminal No.	Name	(1)	Anode	(2)(3)	Cathode	(4)(5)	Emitter	(6)	Collector	Emitter	Detector	1.4×1.4	1×0.3		2ch	EE-SX1160-W11 Dimensions W×L×H : 18.9mm×6mm×15.5mm Slot width : 9.5mm Internal circuit Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>1.9 × 1.1</td><td>1.9 × 1.1</td></tr></table> <table><tr><th>Terminal No.</th><th>Color</th><th>Name</th></tr><tr><td>A</td><td>Red</td><td>Anode</td></tr><tr><td>K</td><td>Black</td><td>Cathode</td></tr><tr><td>C</td><td>White</td><td>Collector</td></tr><tr><td>E</td><td>Green</td><td>Emitter</td></tr></table>	Emitter	Detector	1.9 × 1.1	1.9 × 1.1	Terminal No.	Color	Name	A	Red	Anode	K	Black	Cathode	C	White	Collector	E	Green	Emitter	EE-SX1070 Dimensions W×L×H : 17.7mm×6mm×10mm Slot width : 8mm Internal circuit Aperture size <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>2.2 × 0.5</td><td>2.2 × 0.5</td></tr></table>	Emitter	Detector	2.2 × 0.5	2.2 × 0.5	EE-SX3163-P1 / EE-SX4163-P1 Dimensions W×L×H : 13.6mm×8.3mm×14.7mm Slot width : 5mm Internal Circuit Terminal No. <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>(1)</td><td>Ground (GND)</td></tr><tr><td>(2)</td><td>Output (OUT)</td></tr><tr><td>(3)</td><td>Power supply (Vcc)</td></tr></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>1.4 × 1.4</td><td>1.4 × 0.5</td></tr></table>	Terminal No.	Name	(1)	Ground (GND)	(2)	Output (OUT)	(3)	Power supply (Vcc)	Emitter	Detector	1.4 × 1.4	1.4 × 0.5
Emitter	Detector																																																																						
2.1 × 0.5	2.1 × 0.5																																																																						
2ch	2ch																																																																						
Terminal No.	Name																																																																						
A	Anode																																																																						
K	Cathode																																																																						
C	Collector																																																																						
E	Emitter																																																																						
Terminal No.	Name																																																																						
(1)	Anode																																																																						
(2)(3)	Cathode																																																																						
(4)(5)	Emitter																																																																						
(6)	Collector																																																																						
Emitter	Detector																																																																						
1.4×1.4	1×0.3																																																																						
	2ch																																																																						
Emitter	Detector																																																																						
1.9 × 1.1	1.9 × 1.1																																																																						
Terminal No.	Color	Name																																																																					
A	Red	Anode																																																																					
K	Black	Cathode																																																																					
C	White	Collector																																																																					
E	Green	Emitter																																																																					
Emitter	Detector																																																																						
2.2 × 0.5	2.2 × 0.5																																																																						
Terminal No.	Name																																																																						
(1)	Ground (GND)																																																																						
(2)	Output (OUT)																																																																						
(3)	Power supply (Vcc)																																																																						
Emitter	Detector																																																																						
1.4 × 1.4	1.4 × 0.5																																																																						

Dimensions and Connections - - continued.

Discontinued Models	Suggested Replacement (For new designs)	Suggested Models – Alternate (For new designs)																																																		
EE-SX3160-W11 / EE-SX4160-W11	EE-SX3070 / EE-SX4070	EE-SX3163-P1 / EE-SX4163-P1																																																		
Dimensions W×L×H : 18.9mm×6mm×15.5mm Slot width : 9.5mm  Internal circuit <table><tr><th>Terminal No.</th><th>Color</th><th>Name</th></tr><tr><td>A</td><td>Red</td><td>Anode</td></tr><tr><td>K</td><td>Black</td><td>Cathode</td></tr><tr><td>V</td><td>White</td><td>Power supply (Vcc)</td></tr><tr><td>O</td><td>Blue</td><td>Output (OUT)</td></tr><tr><td>G</td><td>Green</td><td>Ground (GND)</td></tr></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>1.9 × 1.1</td><td>1.9 × 1.1</td></tr></table>	Terminal No.	Color	Name	A	Red	Anode	K	Black	Cathode	V	White	Power supply (Vcc)	O	Blue	Output (OUT)	G	Green	Ground (GND)	Emitter	Detector	1.9 × 1.1	1.9 × 1.1	Dimensions W×L×H : 17.7mm×6mm×10mm Slot width : 8mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><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></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>2.2 × 0.5</td><td>2.2 × 0.5</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	V	Power supply (Vcc)	O	Output (OUT)	G	Ground (GND)	Emitter	Detector	2.2 × 0.5	2.2 × 0.5	Dimensions W×L×H : 13.6mm×8.3mm×14.7mm Slot width : 5mm  Internal Circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>(1)</td><td>Ground (GND)</td></tr><tr><td>(2)</td><td>Output (OUT)</td></tr><tr><td>(3)</td><td>Power supply (Vcc)</td></tr></table> Aperture size (H × W) <table><tr><th>Emitter</th><th>Detector</th></tr><tr><td>1.4 × 1.4</td><td>1.4 × 0.5</td></tr></table>	Terminal No.	Name	(1)	Ground (GND)	(2)	Output (OUT)	(3)	Power supply (Vcc)	Emitter	Detector	1.4 × 1.4	1.4 × 0.5
Terminal No.	Color	Name																																																		
A	Red	Anode																																																		
K	Black	Cathode																																																		
V	White	Power supply (Vcc)																																																		
O	Blue	Output (OUT)																																																		
G	Green	Ground (GND)																																																		
Emitter	Detector																																																			
1.9 × 1.1	1.9 × 1.1																																																			
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
V	Power supply (Vcc)																																																			
O	Output (OUT)																																																			
G	Ground (GND)																																																			
Emitter	Detector																																																			
2.2 × 0.5	2.2 × 0.5																																																			
Terminal No.	Name																																																			
(1)	Ground (GND)																																																			
(2)	Output (OUT)																																																			
(3)	Power supply (Vcc)																																																			
Emitter	Detector																																																			
1.4 × 1.4	1.4 × 0.5																																																			
EE-SY169 / EE-SY169A-D	EE-SY169B / EE-SY169A	EE-SY1201																																																		
Dimensions W×L×H : 12.5mm×6mm×8mm Standard sensing distance : 4mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Note: 1. The dimensions shown are those for Side A. Other lead wire pitch dimensions shown are for the case surface.	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Dimensions W×L×H : 12.5mm×6mm×8mm Standard sensing distance : 4mm  Internal circuit <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Note: 1. The dimensions shown are those for Side A. Other lead wire pitch dimensions shown are for the case surface.	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Dimensions W×L×H : 4mm×3mm×2mm Standard sensing distance : 3mm  Internal circuit Recommended Soldering Pattern <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Note: The shaded portion in the above figure may cause shorting. Do not wire in this portion.	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter																				
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
C	Collector																																																			
E	Emitter																																																			
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
C	Collector																																																			
E	Emitter																																																			
Terminal No.	Name																																																			
A	Anode																																																			
K	Cathode																																																			
C	Collector																																																			
E	Emitter																																																			

Dimensions and Connections
- - continued.

Discontinued Models	Suggested Replacement (For new designs)	Suggested Models – Alternate (For new designs)																														
EE-SY171	EE-SY110	EE-SY1201																														
Dimensions W×L×H : 15mm×4.2mm×3mm Standard sensing distance : 3.5mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Dimensions W×L×H : 12mm×4.6mm×4.8mm Standard sensing distance : 5mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter	Dimensions W×L×H : 4mm×3mm×2mm Standard sensing distance : 3mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table> Note: The shaded portion in the above figure may cause shorting. Do not wire in this portion.	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter
Terminal No.	Name																															
A	Anode																															
K	Cathode																															
C	Collector																															
E	Emitter																															
Terminal No.	Name																															
A	Anode																															
K	Cathode																															
C	Collector																															
E	Emitter																															
Terminal No.	Name																															
A	Anode																															
K	Cathode																															
C	Collector																															
E	Emitter																															
EE-SY310 / EE-SY410	EE-SY110																															
Dimensions W×L×H : 12mm×4.6mm×4.8mm Standard sensing distance : 5mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><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></table>	Terminal No.	Name	A	Anode	K	Cathode	V	Power supply (Vcc)	O	Output (OUT)	G	Ground (GND)	Dimensions W×L×H : 12mm×4.6mm×4.8mm Standard sensing distance : 5mm  <table><tr><th>Terminal No.</th><th>Name</th></tr><tr><td>A</td><td>Anode</td></tr><tr><td>K</td><td>Cathode</td></tr><tr><td>C</td><td>Collector</td></tr><tr><td>E</td><td>Emitter</td></tr></table>	Terminal No.	Name	A	Anode	K	Cathode	C	Collector	E	Emitter									
Terminal No.	Name																															
A	Anode																															
K	Cathode																															
V	Power supply (Vcc)																															
O	Output (OUT)																															
G	Ground (GND)																															
Terminal No.	Name																															
A	Anode																															
K	Cathode																															
C	Collector																															
E	Emitter																															

* 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

Partial Discontinuation– non-Amplified Photomicrosensors

EE-SJ, EE-SV, EE-SX and EE-SY (select models)

Appendix A: Comparison of Operating Characteristics

Item	Product discontinuation EE-SJ3-C / EE-SJ3-D / EE-SJ3-G	Suggested Replacement EE-SX1071	Alternate Suggested Replacement EE-SX1350
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	Maximum rating 30 mA
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 100mA (Duty ratio 1%, Pulse width $\leq$ 0.1msec)
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	Maximum rating 4 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 12 V
Detector Emitter–Collector voltage	—	—	Maximum rating 5V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 50 mW
Operating temp	-25°C~85°C	-25°C~85°C	-30°C~85°C
Storage temp	-30°C~100°C	-30°C~100°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 255°C (Within 10 seconds)
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)
Emitter Peak emission wavelength	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)
Detector Light current (EE-SJ3-C)	MIN : 1 mA MAX : 28 mA (IF=20mA、VCE=10V)	MIN : 0.5 mA MAX : 14 mA (IF=20mA、VCE=10V)	MIN : 0.4 mA MAX : 4 mA (IF=20mA、VCE=10V)
Detector Light current (EE-SJ3-D)	MIN : 0.1 mA (IF=20mA、VCE=10V)		
Detector Light current (EE-SJ3-G)	MIN : 0.5 mA MAX : 14mA (IF=20mA、VCE=10V)		
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=10V、0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V、0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V、0lx)
Detector Collector–Emitter saturated voltage (EE-SJ3-C)	TYP : 0.1 V MAX: 0.4 V (IF=20mA、IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA、IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA、IL=0.1mA)
Detector Collector–Emitter saturated voltage (EE-SJ3-D)	—		
Detector Collector–Emitter saturated voltage (EE-SJ3-G)	TYP : 0.1 V MAX: 0.4 V (IF=20mA、IL=0.1mA)		
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (Conditions VCE=10V)	TYP : 850 nm (Conditions VCE=10V)	TYP : 900 nm (Conditions VCE=5V)
Rising time	TYP : 4 μ s (Conditions Vcc=5V、RL=100 Ω 、 IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V、RL=100 Ω 、 IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V、RL=100 Ω 、 IL=1mA)
Falling time	TYP : 4 μ s (Conditions Vcc=5V、RL=100 Ω 、 IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V、RL=100 Ω 、 IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V、RL=100 Ω 、 IL=1mA)

Item	Discontinued Models EE-SJ5-B	Suggested Replacement EE-SX1081	Alternate Suggested Replacement EE-SX1350
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	Maximum rating 30 mA
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq 10\mu s$, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq 10\mu s$, Repeated 100Hz)	Maximum rating 100mA (Duty ratio 1%, Pulse width $\leq 0.1\text{msec}$)
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	Maximum rating 4 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 12 V
Detector Emitter–Collector voltage	—	—	Maximum rating 5V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 50 mW
Operating temp	-25°C~85°C	-25°C~85°C	-30°C~85°C
Storage temp	-30°C~100°C	-30°C~100°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 255°C (Within 10 seconds)
Emitter Forward voltage	TYP : 1.2 V MAX : 1.5 V (Conditions IF=30mA)	TYP : 1.2 V MAX : 1.5 V (Conditions IF=30mA)	TYP : 1.2 V MAX : 1.5 V (Conditions IF=30mA)
Emitter reverse current	TYP : 0.01 μA MAX : 10 μA (Conditions VR=4V)	TYP : 0.01 μA MAX : 10 μA (Conditions VR=4V)	TYP : 0.01 μA MAX : 10 μA (Conditions VR=4V)
Emitter Peak emission wavelength	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)
Detector Light current	MIN : 0.5 mA MAX : 14mA (IF=20mA, VCE=10V)	MIN : 0.5 mA MAX : 14mA (IF=20mA, VCE=10V)	MIN : 0.4 mA MAX : 4mA (IF=20mA, VCE=10V)
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)
Detector Collector–Emitter saturated voltage	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (Conditions VCE=10V)	TYP : 850 nm (Conditions VCE=10V)	TYP : 900 nm (Conditions VCE=5V)
Rising time	TYP : 4 μs (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μs (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μs (Conditions Vcc=5V, RL=100 Ω , IL=1mA)
Falling time	TYP : 4 μs (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μs (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μs (Conditions Vcc=5V, RL=100 Ω , IL=1mA)

Item	Discontinued Models EE-SJ8-B	Suggested Replacement EE-SX1070	Alternate Suggested Replacement EE-SX1350
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	Maximum rating 30 mA
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 100mA (Duty ratio 1%, Pulse width $\leq$ 0.1msec)
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	Maximum rating 4 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 12 V
Detector Emitter–Collector voltage	—	—	Maximum rating 5V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 50 mW
Operating temp	-25°C~85°C	-25°C~95°C	-30°C~85°C
Storage temp	-30°C~100°C	-30°C~100°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 255°C (Within 10 seconds)
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)
Emitter Peak emission wavelength	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)
Detector Light current	MIN : 0.05 mA MAX : 5 mA (IF=20mA, VCE=10V)	MIN : 0.5 mA MAX : 14 mA (IF=20mA, VCE=10V)	MIN : 0.4 mA MAX : 4 mA (IF=20mA, VCE=10V)
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)
Detector Collector–Emitter saturated voltage	—	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (Conditions VCE=10V)	TYP : 850 nm (Conditions VCE=10V)	TYP : 900 nm (Conditions VCE=5V)
Rising time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=1mA)
Falling time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=1mA)

Item	Discontinued Models EE-SV3-C / EE-SV3-D / EE-SV3-G EE-SV3-CS / EE-SV3-DS / EE-SV3-GS	Suggested Replacement EE-SV3-B EE-SV3	Alternate Suggested Replacement EE-SX1350
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	Maximum rating 30 mA
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10us, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq$ 10us, Repeated 100Hz)	Maximum rating 100mA (Duty ratio 1%, Pulse width $\leq$ 0.1msec)
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	Maximum rating 4 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 12 V
Detector Emitter–Collector voltage	—	—	Maximum rating 5V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 50 mW
Operating temp	-25°C~85°C	-25°C~85°C	-30°C~85°C
Storage temp	-30°C~100°C	-30°C~100°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 255°C (Within 10 seconds)
Emitter Forward voltage	TYP : 1.2 V MAX : 1.5 V (Conditions IF=30mA)	TYP : 1.2 V MAX : 1.5 V (Conditions IF=30mA)	TYP : 1.2 V MAX : 1.5 V (Conditions IF=30mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)
Emitter Peak emission wavelength	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)
Detector Light current (EE-SV3-C / EE-SV3-CS)	MIN : 1 mA MAX : 28 mA (IF=20mA, VCE=10V)	MIN : 0.5 mA MAX : 14 mA (IF=20mA, VCE=10V)	MIN : 0.4 mA MAX : 4 mA (IF=20mA, VCE=10V)
Detector Light current (EE-SV3-D) (EE-SV3-DS)	MIN : 0.1 mA (IF=20mA, VCE=10V)		
Detector Light current (EE-SV3-G) (EE-SV3-GS)	MIN : 0.5 mA MAX : 14mA (IF=20mA, VCE=10V)		
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)
Detector Collector–Emitter saturated voltage (EE-SV3-C) (EE-SV3-CS)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)
Detector Collector–Emitter saturated voltage (EE-SV3-D) (EE-SV3-DS)	—		
Detector Collector–Emitter saturated voltage (EE-SV3-G / EE-SV3-GS)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)		
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (Conditions VCE=10V)	TYP : 850 nm (Conditions VCE=10V)	TYP : 900 nm (Conditions VCE=5V)
Rising time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=1mA)
Falling time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=1mA)

Item	Discontinued Models EE-SX199	Suggested Replacement EE-SX198	Alternate Suggested Replacement EE-SX1350
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	Maximum rating 30 mA
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 100mA (Duty ratio 1%, Pulse width $\leq$ 0.1msec)
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	Maximum rating 4 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 12 V
Detector Emitter–Collector voltage	—	—	Maximum rating 5V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 50 mW
Operating temp	-25°C~85°C	-25°C~85°C	-30°C~85°C
Storage temp	-40°C~100°C	-30°C~100°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 255°C (Within 10 seconds)
Emitter Forward voltage	TYP: 1.2 V MAX: 1.4 V (Conditions IF=30mA)	TYP: 1.2 V MAX: 1.4 V (Conditions IF=30mA)	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)
Emitter Peak emission wavelength	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)
Detector Light current	MIN : 0.5 mA MAX : 14mA (IF=20mA, VCE=5V)	MIN : 0.5 mA MAX : 14mA (IF=20mA, VCE=5V)	MIN : 0.4 mA MAX : 4mA (IF=20mA, VCE=10V)
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=20V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=20V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)
Detector Collector–Emitter saturated voltage	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.5mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.5mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (Conditions VCE=10V)	TYP : 850 nm (Conditions VCE=10V)	TYP : 900 nm (Conditions VCE=5V)
Rising time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=1mA)
Falling time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=1mA)

Item	Discontinued Models EE-SX493		Suggested Replacement EE-SX1046		Alternate Suggested Replacement EE-SX4350	
Emitter Forward current	Maximum rating 50 mA		Maximum rating 50 mA		Maximum rating 30 mA	
Emitter Pulse forward current	—		Maximum rating 1A (Pulse width $\leq 10\mu s$, Repeated 100Hz)		—	
Emitter Reverse voltage	Maximum rating 4 V		Maximum rating 4 V		Maximum rating 4 V	
Detector Collector–Emitter voltage	—		Maximum rating 30 V		—	
Detector Collector current	—		Maximum rating 20 mA		—	
Detector Collector dissipation	—		Maximum rating 100 mW		—	
Detector Power supply voltage	Maximum rating 16V		—		Maximum rating 16V	
Detector Output voltage	Maximum rating 28V		—		Maximum rating 28V	
Detector Output current	Maximum rating 16mA		—		Maximum rating 16mA	
Detector Permissible output dissipation	Maximum rating 250mW		—		Maximum rating 80mW	
Operating temp	-40°C~60°C		-25°C~85°C		-30°C~85°C	
Storage temp	-40°C~85°C		-30°C~100°C		-40°C~100°C	
Soldering temp	Maximum rating 260°C (Within 10 seconds)		Maximum rating 260°C (Within 10 seconds)		—	
Reflow soldering temp	—		—		Maximum rating 255°C (Within 10 seconds)	
Emitter Forward voltage	TYP : 1.2 V MAX : 1.5 V	(Conditions IF=20mA)	TYP : 1.2 V MAX : 1.5 V	(Conditions IF=30mA)	TYP : 1.2 V MAX : 1.5 V	(Conditions IF=20mA)
Emitter reverse current	TYP : 0.01 μA MAX : 10 μA	(Conditions VR=4V)	TYP : 0.01 μA MAX : 10 μA	(Conditions VR=4V)	TYP : 0.01 μA MAX : 10 μA	(Conditions VR=4V)
Emitter Peak emission wavelength	TYP : 940 nm	(Conditions IF=20mA)	TYP : 940 nm	(Conditions IF=20mA)	TYP : 940 nm	(Conditions IF=20mA)
Detector Light current	—		MIN : 1.2 mA MAX : 14 mA	(IF=20mA, VCE=5V)	—	
Detector Dark current	—		TYP : 2 nA MAX: 200 nA	(VCE=20V, 0Ix)	—	
Detector Collector–Emitter saturated voltage	—		TYP : 0.1 V MAX: 0.4 V	(IF=20mA, IL=0.1mA)	—	
Low-level output voltage	TYP : 0.12 V MAX : 0.4 V	(Vcc=4.5~16V, I _{OL} =16mA, I _F =15mA)	—		TYP : 0.12 V MAX : 0.4 V	(Vcc=4.5~16V, I _{OL} =16mA, I _F =10mA)
High-level output voltage	MIN : 15 V	(Vcc=16V, R _L =1k Ω , I _F =0mA)	—		—	
High-level output current	—		—		MAX : 100 μA	(Vcc=4.5~16V, V _{OH} =28V, I _F =0mA)
Current consumption	TYP : 5 mA MAX : 10 mA	(Conditions Vcc=16V)	—		TYP : 54mA MAX : 10 mA	(Conditions Vcc=4.5~16V)
Detector Peak spectral sensitivity wavelength	TYP : 870 nm	(Conditions Vcc=4.5~16V)	TYP : 850 nm	(Conditions VCE=10V)	TYP : 870 nm	(Conditions Vcc=4.5~16V)
LED current when output is ON	TYP : 10 mA MAX : 15 mA	(Conditions Vcc=4.5~16V)	MAX : 15 mA	(Conditions Vcc=4.5~16V)		
Hysteresis	TYP : 15 %	(Conditions Vcc=4.5~16V)	—		TYP : 15 %	(Conditions Vcc=4.5~16V)
Response frequency	MIN : 3 kHz	(Conditions Vcc=4.5~16V, I _F =15mA, I _{OL} =16mA)	—		MIN : 3 kHz	(Conditions Vcc=4.5~16V, I _F =20mA, I _{OL} =16mA)
Rising time Response delay time	TYP : 3 μs	(Conditions Vcc=4.5~16V, I _F =15mA, I _{OL} =16mA)	TYP : 4 μs	(Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 6 μs	(Conditions Vcc=4.5~16V, I _F =20mA, I _{OL} =16mA)
Falling time Response delay time	TYP : 20 μs	(Conditions Vcc=4.5~16V, I _F =15mA, I _{OL} = 16mA)	TYP : 4 μs	(Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 10 μs	(Conditions Vcc=4.5~16V I _F =20mA, I _{OL} =16mA)

Item	Discontinued Models EE-SX1031	Suggested Replacement EE-SX1321
Emitter Forward current	Maximum rating 50 mA	Maximum rating 25 mA
Emitter Pulse forward current	—	Maximum rating 100mA (Duty ratio 1%, Pulse width $\leq$ 0.1msec)
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 5 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 12 V
Detector Emitter–Collector voltage	—	Maximum rating 5V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 75 mW
Operating temp	-25°C~85°C	-30°C~85°C
Storage temp	-30°C~100°C	-40°C~90°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	Maximum rating 255°C (Within 10 seconds)
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)	TYP: 1.1 V MAX: 1.3 V (Conditions IF=5mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	MAX : 10 μ A (Conditions VR=5V)
Emitter Peak emission wavelength	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)
Detector Light current	MIN : 0.5 mA MAX : 14 mA (IF=20mA, VCE=10V)	MIN : 150 μ A MAX : 1500 μ A (IF=5mA, VCE=5V)
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 10 nA MAX: 100 nA (VCE=10V, 0lx)
Detector Collector–Emitter saturated voltage	TYP : 0.15 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=50 μ A)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (Conditions VCE=10V)	TYP : 900 nm (Conditions VCE=5V)
Rising time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 19 μ s (Conditions Vcc=5V, RL=100 Ω , IL=500 μ A)
Falling time	TYP : 4 μ s (Conditions Vcc=5V, RL=100 Ω , IL=5mA)	TYP : 26 μ s (Conditions Vcc=5V, RL=100 Ω , IL=500 μ A)

Item	Discontinued Models EE-SX1160-W11	Suggested Replacement EE-SX1070	Alternate Suggested Replacement EE-SX3163-P1 / EE-SX4163-P1
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	—
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	—
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	—
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	—
Detector Emitter–Collector voltage	Maximum rating 5 V	—	—
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	—
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	—
Power supply voltage	—	—	Maximum rating 13.2V
Output voltage	—	—	Maximum rating 13.2V
Output current	—	—	Maximum rating 16mA
Permissible output dissipation	—	—	Maximum rating 80mW
Operating temp	-25°C~80°C	-25°C~95°C	-20°C~85°C
Storage temp	-25°C~85°C	-30°C~100°C	-30°C~85°C
Soldering temp	—	Maximum rating 260°C (Within 10 seconds)	—
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF=20mA)	TYP: 1.2 V MAX: 1.5 V (Conditions IF=30mA)	—
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	—
Emitter Peak emission wavelength	TYP : 920 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)	—
Detector Light current	MIN : 3.5 mA MAX : 16 mA (IF=20mA, VCE=10V)	MIN : 0.5 mA MAX : 14 mA (IF=20mA, VCE=10V)	—
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	—
Detector Collector–Emitter saturated voltage	TYP : 0.15 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	TYP : 0.1 V MAX: 0.4 V (IF=20mA, IL=0.1mA)	—
Low-level output voltage	—	—	MAX : 0.3 V (I _{OUT} =16mA) (EE-SX3163-P1 : without incident) (EE-SX4163-P1 : with incident)
High-level output voltage	—	—	MIN : (V _{CC} ×0.9) V (V _{OUT} =V _{CC} , R _L =47k Ω) (EE-SX3163-P1 : with incident) (EE-SX4163-P1 : without incident)
Current consumption	—	—	MAX : 25 mA (Conditions: with and without incident)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (Conditions VCE=10V)	TYP : 800 nm (Conditions VCE=10V)	—
Response frequency	—	—	MIN : 3 kHz (Conditions V _{OUT} =V _{CC} , I _{OUT} =16mA)
Rising time Response delay time	TYP : 3 μ s (Conditions V _{CC} =4.5~16V, I _F =15mA, I _{OL} =16mA)	TYP : 4 μ s (Conditions V _{CC} =5V, R _L =100 Ω , I _L =5mA)	—
Falling time Response delay time	TYP : 20 μ s (Conditions V _{CC} =4.5~16V, I _F =15mA, I _{OL} =16mA)	TYP : 4 μ s (Conditions V _{CC} =5V, R _L =100 Ω , I _L =5mA)	—

Item	Discontinued Models EE-SX3160-W11 / EE-SX4160-W11	Suggested Replacement EE-SX3070 / EE-SX4070	Alternate Suggested Replacement EE-SX3163-P1 / EE-SX4163-P1
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	—
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	—
Detector Power supply voltage	Maximum rating 16V	Maximum rating 16V	—
Detector Output voltage	Maximum rating 28V	Maximum rating 28V	—
Detector Output current	Maximum rating 16mA	Maximum rating 16mA	—
Detector Permissible output dissipation	Maximum rating 250mW	Maximum rating 250mW	—
Power supply voltage	—	—	Maximum rating 13.2V
Output voltage	—	—	Maximum rating 13.2V
Output current	—	—	Maximum rating 16mA
Permissible output dissipation	—	—	Maximum rating 80mW
Operating temp	-25°C~75°C	-40°C~75°C	-20°C~85°C
Storage temp	-25°C~85°C	-40°C~85°C	-30°C~85°C
Soldering temp	—	Maximum rating 260°C (Within 10 seconds)	—
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions $I_F=20\text{mA}$)	TYP: 1.2 V MAX: 1.5 V (Conditions $I_F=20\text{mA}$)	—
Emitter reverse current	TYP : 0.01 μA MAX : 10 μA (Conditions $V_R=4\text{V}$)	TYP : 0.01 μA MAX : 10 μA (Conditions $V_R=4\text{V}$)	—
Emitter Peak emission wavelength	TYP : 920 nm (Conditions $I_F=20\text{mA}$)	TYP : 940 nm (Conditions $I_F=20\text{mA}$)	—
Low-level output voltage	TYP : 0.12 V MAX : 0.4 V (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_{OL}=16\text{mA}$, $I_F=0\text{mA}$)	TYP : 0.12 V MAX : 0.4 V (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_{OL}=16\text{mA}$, $I_F=0\text{mA}$)	MAX : 0.3 V (Conditions $I_{OUT}=16\text{mA}$, without incident)
High-level output voltage	MIN : 15 V (Conditions $V_{CC}=16\text{V}$, $R_L=1\text{k}\Omega$, $I_F=10\text{mA}$)	MIN : 15 V (Conditions $V_{CC}=16\text{V}$, $R_L=1\text{k}\Omega$, $I_F=10\text{mA}$)	MIN : ($V_{CC}\times 0.9$) V (Conditions $V_{OUT}=V_{CC}$, $R_L=47\text{k}\Omega$, with incident)
Current consumption	TYP : 3.2 mA MAX : 10 mA (Conditions $V_{CC}=16\text{V}$)	TYP : 3.2 mA MAX : 10 mA (Conditions $V_{CC}=16\text{V}$)	MAX : 25 mA (Conditions: with and without incident)
Detector Peak spectral sensitivity wavelength	TYP : 870 nm (Conditions $V_{CC}=4.5\sim 16\text{V}$)	TYP : 870 nm (Conditions $V_{CC}=4.5\sim 16\text{V}$)	—
LED current when output is OFF	TYP : 2 mA MAX : 10 mA (Conditions $V_{CC}=4.5\sim 16\text{V}$)	MAX : 10 mA (Conditions $V_{CC}=4.5\sim 16\text{V}$)	—
Hysteresis	TYP : 15 % (Conditions $V_{CC}=4.5\sim 16\text{V}$)	TYP : 15 % (Conditions $V_{CC}=4.5\sim 16\text{V}$)	—
Response frequency	MIN : 3 kHz (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_F=15\text{mA}$, $I_{OL}=16\text{mA}$)	MIN : 3 kHz (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_F=20\text{mA}$, $I_{OL}=16\text{mA}$)	MIN : 3 kHz (Conditions $V_{OUT}=V_{CC}$, $I_{OUT}=16\text{mA}$)
Rising time Response delay time	TYP : 3 μs (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_F=15\text{mA}$, $I_{OL}=16\text{mA}$)	TYP : 3 μs (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_F=20\text{mA}$, $I_{OL}=16\text{mA}$)	—
Falling time Response delay time	TYP : 3 μs (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_F=15\text{mA}$, $I_{OL}=16\text{mA}$)	TYP : 20 μs (Conditions $V_{CC}=4.5\sim 16\text{V}$, $I_F=20\text{mA}$, $I_{OL}=16\text{mA}$)	—

Item	Discontinued Models EE-SY171	Suggested Replacement EE-SY110	Alternate Suggested Replacement EE-SY1201
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	Maximum rating 50 mA
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	—
Emitter Reverse voltage	Maximum rating 4 V	Maximum rating 4 V	Maximum rating 6 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 35V
Detector Emitter–Collector voltage	—	—	Maximum rating 6V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 75 mW
Total allowance loss	—	—	Maximum rating 100 mW
Operating temp	-40°C~85°C	-40°C~85°C	-25°C~85°C
Storage temp	-40°C~85°C	-40°C~85°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 260°C (Within 5 seconds)
Emitter Forward voltage	TYP : 1.2 V MAX: 1.5 V (Conditions IF=30mA)	TYP : 1.2 V MAX: 1.5 V (Conditions IF=30mA)	TYP : 1.2 V MAX: 1.4 V (Conditions IF=20mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=4V)	MAX : 10 μ A (Conditions VR=6V)
Emitter Peak emission wavelength	TYP : 940 nm (Conditions IF=20mA)	TYP : 940 nm (Conditions IF=20mA)	TYP : 950 nm
Detector Light current	MIN : 50 μ A MAX : 500 μ A (Conditions IF=20mA, VCE=10V, Reflectance 90% white paper, d=3.5mm)	MIN : 200 μ A MAX : 2000 μ A (Conditions IF=20mA, VCE=10V, Reflectance 90% white paper, d=5mm)	MIN : 60 μ A MAX : 410 μ A (Conditions IF=4mA, VCE=2V, Aluminum-deposited, d=4mm)
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=10V, 0lx)	TYP : 1 nA MAX: 100 nA (VCE=20V, 0lx)
Leakage current	MAX : 200 nA (Conditions IF=20mA, VCE=10V, with no reflection)	MAX : 2 μ A (Conditions IF=20mA, VCE=10V, with no reflection)	MAX : 700 nA (Conditions IF=4mA, VCE=2V, with no reflection)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (VCE=10V)	TYP : 850 nm (VCE=10V)	TYP : 930 nm
Rising time	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, RL=1k Ω , IL=100 μ A, d=4mm)
Falling time	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, RL=1k Ω , IL=100 μ A, d=4mm)

Item	Discontinued Models EE-SY310 / EE-SY410		Suggested Replacement EE-SY110		Alternate Suggested Replacement EE-SY1201	
Emitter Forward current	Maximum rating 50 mA		Maximum rating 50 mA		Maximum rating 50 mA	
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)		Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)		—	
Emitter Reverse voltage	Maximum rating 4 V		Maximum rating 4 V		Maximum rating 6 V	
Detector Collector–Emitter voltage	—		Maximum rating 30 V		Maximum rating 35V	
Detector Emitter–Collector voltage	—		—		Maximum rating 6V	
Detector Collector current	—		Maximum rating 20 mA		Maximum rating 20 mA	
Detector Collector dissipation	—		Maximum rating 100 mW		Maximum rating 75 mW	
Detector Power supply voltage	Maximum rating 16V		—		—	
Detector Output voltage	Maximum rating 28V		—		—	
Detector Output current	Maximum rating 16mA		—		—	
Detector Permissible output dissipation	Maximum rating 250mW		—		—	
Total allowance loss	—		—		Maximum rating 100 mW	
Operating temp	-40°C~75°C		-40°C~85°C		-25°C~85°C	
Storage temp	-40°C~85°C		-40°C~85°C		-40°C~100°C	
Soldering temp	Maximum rating 260°C (Within 10 sec.)		Maximum rating 260°C (Within 10 sec.)		—	
Reflow soldering temp	—		—		Maximum rating 260°C (Within 5 sec.)	
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V	(Conditions IF=20mA)	TYP: 1.2 V MAX: 1.5 V	(Conditions IF=30mA)	TYP: 1.2 V MAX: 1.4 V	(Conditions IF=20mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A	(Conditions VR=4V)	TYP : 0.01 μ A MAX : 10 μ A	(Conditions VR=4V)	MAX : 10 μ A	(Conditions VR=6V)
Emitter Peak emission wavelength	TYP : 920 nm	(Conditions IF=20mA)	TYP : 940 nm	(Conditions IF=20mA)	TYP : 950 nm	
Detector Light current	—		MIN : 200 μ A MAX : 2000 μ A (Conditions IF=20mA, VCE=10V, Reflectance 90% white paper, d=5mm)		MIN : 60 μ A MAX : 410 μ A (Conditions IF=4mA, VCE=2V, Aluminum-deposited, d=4mm)	
Detector Dark current	—		TYP : 2 nA MAX: 200 nA	(VCE=10V, 0lx)	TYP : 1 nA MAX: 100 nA	(VCE=20V, 0lx)
Leakage current	—		MAX : 2 μ A (Conditions IF=20mA, VCE=10V, with no reflection)		MAX : 700 nA (Conditions IF=4mA, VCE=2V, with no reflection)	
Low-level output voltage	TYP : 0.12 V MAX : 0.4 V (Conditions Vcc=4.5~16V, I _{OL} =16mA) (EE-SY310: without incident) (EE-SY410: with incident)		—		—	
High-level output voltage	MIN : 15 V (Conditions Vcc=16V, R _L =1k Ω) (EE-SY310: with incident) (EE-SY410: without incident)		—		—	
Current consumption	TYP : 3.2 mA MAX : 10 mA	(Conditions Vcc=16V)	—		—	
Detector Peak spectral sensitivity wavelength	TYP : 870 nm	(Conditions Vcc=4.5~16V)	TYP : 850 nm	(Conditions VCE=10V)	TYP : 930 nm	
LED current - When output is OFF (EE-SY310) - When output is ON (EE-SY410)	TYP : 6 mA MAX : 15 mA	(Conditions Vcc=4.5~16V)	—		—	
Hysteresis	TYP : 17 %	(Conditions Vcc=4.5~16V)	—		—	
Response frequency	MIN : 50 P.P.S (Conditions Vcc=4.5~16V, I _F =15mA, I _{OL} =16mA)		—		—	
Rising time Response delay time	TYP : 3 μ s (Conditions: Vcc=4.5~16V I _F =15mA, I _{OL} =16mA)		TYP : 30 μ s (Conditions Vcc=5V, R _L =1k Ω , I _L =1mA)		TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, R _L =1k Ω , I _L =100 μ A, d=4mm)	
Falling time Response delay time	TYP : 20 μ s (Conditions Vcc=4.5~16V, I _F =15mA, I _{OL} =16mA)		TYP : 30 μ s (Conditions Vcc=5V, R _L =1k Ω , I _L =1mA)		TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, R _L =1k Ω , I _L =100 μ A, d=4mm)	

Item	Discontinued Models EE-SY169	Suggested Replacement EE-SY169B	Alternate Suggested Replacement EE-SY1201
Emitter Forward current	Maximum rating 40 mA	Maximum rating 40 mA	Maximum rating 50 mA
Emitter Pulse forward current	Maximum rating 300mA (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 300mA (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	—
Emitter Reverse voltage	Maximum rating 3 V	Maximum rating 3 V	Maximum rating 6 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 35V
Detector Emitter–Collector voltage	—	—	Maximum rating 6V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 75 mW
Total allowance loss	—	—	Maximum rating 100 mW
Operating temp	0°C~70°C	0°C~70°C	-25°C~85°C
Storage temp	-20°C~80°C	-20°C~80°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 260°C (Within 5 seconds)
Emitter Forward voltage	TYP : 1.85 V MAX : 2.3 V (Conditions IF=20mA)	TYP : 1.85 V MAX : 2.3 V (Conditions IF=20mA)	TYP : 1.2 V MAX : 1.4 V (Conditions IF=20mA)
Emitter reverse current	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=3V)	TYP : 0.01 μ A MAX : 10 μ A (Conditions VR=3V)	MAX : 10 μ A (Conditions VR=6V)
Emitter Peak emission wavelength	TYP : 660 nm (Conditions IF=20mA)	TYP : 660 nm (Conditions IF=20mA)	TYP : 950 nm
Detector Light current	MIN : 160 μ A MAX : 2000 μ A (Conditions IF=20mA, VCE=5V, Reflectance 90% white paper, d=4mm)	MIN : 160 μ A MAX : 2000 μ A (Conditions IF=20mA, VCE=5V, Reflectance 90% white paper, d=4mm)	MIN : 60 μ A MAX : 410 μ A (Conditions IF=4mA, VCE=2V, Aluminum-deposited, d=4mm)
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=5V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=5V, 0lx)	TYP : 1 nA MAX: 100 nA (VCE=20V, 0lx)
Leakage current	MAX : 2 μ A (Conditions IF=20mA, VCE=5V, with no reflection)	MAX : 2 μ A (Conditions IF=20mA, VCE=5V, with no reflection)	MAX : 700 nA (Conditions IF=4mA, VCE=2V, with no reflection)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (VCE=5V)	TYP : 850 nm (VCE=5V)	TYP : 930 nm
Rising time	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, RL=1k Ω , IL=100 μ A, d=4mm)
Falling time	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, RL=1k Ω , IL=100 μ A, d=4mm)

Item	Discontinued Models EE-SY169A-D	Suggested Replacement EE-SY169A	Alternate Suggested Replacement EE-SY1201
Emitter Forward current	Maximum rating 50 mA	Maximum rating 50 mA	Maximum rating 50 mA
Emitter Pulse forward current	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	Maximum rating 1A (Pulse width $\leq$ 10 μ s, Repeated 100Hz)	—
Emitter Reverse voltage	Maximum rating 3 V	Maximum rating 3 V	Maximum rating 6 V
Detector Collector–Emitter voltage	Maximum rating 30 V	Maximum rating 30 V	Maximum rating 35V
Detector Emitter–Collector voltage	—	—	Maximum rating 6V
Detector Collector current	Maximum rating 20 mA	Maximum rating 20 mA	Maximum rating 20 mA
Detector Collector dissipation	Maximum rating 100 mW	Maximum rating 100 mW	Maximum rating 75 mW
Total allowance loss	—	—	Maximum rating 100 mW
Operating temp	0°C~70°C	0°C~70°C	-25°C~85°C
Storage temp	-20°C~80°C	-20°C~80°C	-40°C~100°C
Soldering temp	Maximum rating 260°C (Within 10 seconds)	Maximum rating 260°C (Within 10 seconds)	—
Reflow soldering temp	—	—	Maximum rating 260°C (Within 5 seconds)
Emitter Forward voltage	TYP : 1.2 V MAX : 1.5 V (Conditions IF=20mA)	TYP : 1.2 V MAX : 1.5 V (Conditions IF=20mA)	TYP : 1.2 V MAX : 1.4 V (Conditions IF=20mA)
Emitter reverse current	MAX : 10 μ A (Conditions VR=4V)	MAX : 10 μ A (Conditions VR=4V)	MAX : 10 μ A (Conditions VR=6V)
Emitter Peak emission wavelength	TYP : 920 nm (Conditions IF=20mA)	TYP : 920 nm (Conditions IF=20mA)	TYP : 950 nm
Detector Light current	MIN : 130 μ A MAX : 1600 μ A (Conditions IF=20mA, VCE=5V, Reflectance 90% white paper, d=4mm)	MIN : 160 μ A MAX : 2000 μ A (Conditions IF=20mA, VCE=5V, Reflectance 90% white paper, d=4mm)	MIN : 60 μ A MAX : 410 μ A (Conditions IF=4mA, VCE=2V, Aluminum-deposited, d=4mm)
Detector Dark current	TYP : 2 nA MAX: 200 nA (VCE=5V, 0lx)	TYP : 2 nA MAX: 200 nA (VCE=5V, 0lx)	TYP : 1 nA MAX: 100 nA (VCE=20V, 0lx)
Leakage current	MAX : 2 μ A (Conditions IF=20mA, VCE=5V, with no reflection)	MAX : 2 μ A (Conditions IF=20mA, VCE=5V, with no reflection)	MAX : 700 nA (Conditions IF=4mA, VCE=2V, with no reflection)
Detector Peak spectral sensitivity wavelength	TYP : 850 nm (VCE=5V)	TYP : 850 nm (VCE=5V)	TYP : 930 nm
Rising time	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, RL=1k Ω , IL=100 μ A, d=4mm)
Falling time	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 30 μ s (Conditions Vcc=5V, RL=1k Ω , IL=1mA)	TYP : 20 μ s MAX: 100 μ s (Conditions Vcc=2V, RL=1k Ω , IL=100 μ A, d=4mm)

* 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