PRODUCT NEWS

Product Discontinuation Notices

Optical Sensors

OMRON

Issue Date
March 1, 2019

No. 2019021CE(ON)

Discontinuation Notice of Photomicro Sensors EE series (partially).

Product Discontinuation Photomicro Sensors		Recommended Replacement Photomicro Sensors
Model EE-SA113		**Model EE-SA105**
Model EE-SM8		**Model EE-SX1070**
Model EE-SPY414		**Model EE-SPY415**
Model EE-SX153-B		**Model EE-SG3 or Model EE-SG3-B**
Model EE-SX1049		**Model EE-SX1018**
Model EE-SX1061		**Model EE-SX1041**
Model EE-SX1071-RANKB		**Model EE-SX1071**
Model EE-SX1137-OMI		**Model EE-SX1041**
Model EE-SX460-P6 MID		**Model EE-SX4235A-P2**
Model EE-SX3157-P1		**Model EE-SX3162-P1**
Model EE-SX4157E-P1		**Model EE-SX4162-P1**
Model EE series (partially)		**No recommended replacement**

[Final order entry date]

The end of March, 2020

[Date of The Last Shipping]

The end of June, 2020

[Caution on recommended replacement]

Dimensions and specifications differ except for the body color. Therefore, it is not a complete compatible products. Please refer to the catalog or specifications for accurate content.

[Difference from discontinued product]

Recommended replacement Model	Body Color	Dimen-sions	Wire connection	Mounting Dimensions	Charac-teristics	Operation ratings	Operation methods
EE-SA105	**	*	**	**	*	-	-
EE-SX1070	**	--	**	*	*	-	-
EE-SPY415	**	**	**	**	*	-	-
EE-SG3, EE-SG3-B	**	--	**	--	*	-	-
EE-SX1018	**	*	**	*	**	-	-
EE-SX1071	**	**	**	**	*	-	-
EE-SX1041	**	*	**	*	*	-	-
EE-SX4235A-P2	**	*	*	*	*	-	-
EE-SX3162-P1	**	*	**	**	*	-	-
EE-SX4162-P1	**	*	**	**	*	-	-

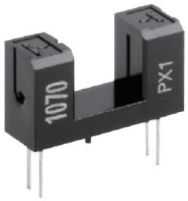
** : Compatible
* : The change is a little/Almost compatible
-- : Not compatible
- : No corresponding specification

[Product Discontinuation and recommended replacement]

Product discontinuation	Recommended replacement
EE-SA113	EE-SA105
EE-SM8	EE-SX1070
EE-SPY414	EE-SPY415
EE-SX153-B	EE-SG3
	EE-SG3-B
EE-SX1049	EE-SX1018
EE-SX1061	EE-SX1041
EE-SX1071-RANKB	EE-SX1071
EE-SX1137-OMI	EE-SX1041
EE-SX460-P6 MID	EE-SX4235A-P2
EE-SX3157-P1	EE-SX3162-P1
EE-SX4157E-P1	EE-SX4162-P1
EE-SX1054	No recommended replacement
EE-SX1082	No recommended replacement
EE-SX1098	No recommended replacement
EE-SX1235A-P2-CHN-1	No recommended replacement
EE-SX157	No recommended replacement
EE-SX4015-P3	No recommended replacement
EE-SX4019-P1 MID	No recommended replacement
EE-SX419-P12	No recommended replacement
EE-SX4235A-P2 MID	No recommended replacement
EE-SX1137-OMI-1	No recommended replacement
EE-SX1128-OMI-1	No recommended replacement
EE-SX4137	No recommended replacement

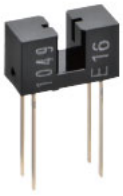
[Body color]

Product discontinuation Model EE-SA113	Recommendable replacement Model EE-SA105
Black 	Black 

Product discontinuation Model EE-SM8	Recommendable replacement Model EE-SX1070
Black	Black 

Product discontinuation Model EE-SPY414	Recommendable replacement Model EE-SPY415
Black	Black 

Product discontinuation Model EE-SX153-B	Recommendable replacement Model EE-SG3 / Model EE-SG3-B
Black	Black Model EE-SG3  Model EE-SG3-B 

Product discontinuation Model EE-SX1049	Recommendable replacement Model EE-SX1018
Black 	Black 

[Body color]

Product discontinuation Model EE-SX1061	Recommendable replacement Model EE-SX1041
Black	Black 

Product discontinuation Model EE-SX1071-RANKB	Recommendable replacement Model EE-SX1071
Black 	Black 

Product discontinuation Model EE-SX1137-OMI	Recommendable replacement Model EE-SX1041
Black 	Black 

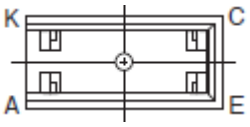
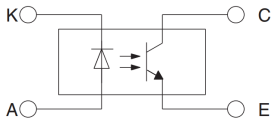
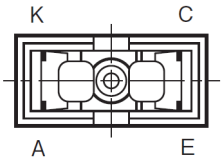
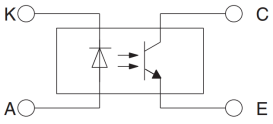
Product discontinuation Model EE-SX460-P6 MID	Recommendable replacement Model EE-SX4235A-P2
Black	Black 

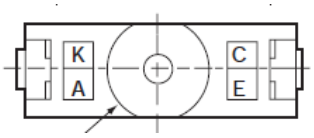
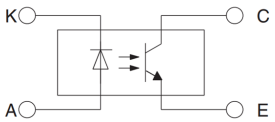
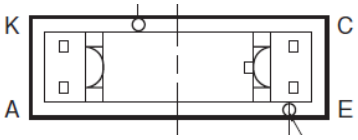
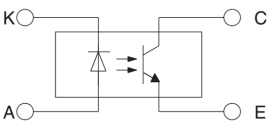
Product discontinuation Model EE-SX3157-P1	Recommendable replacement Model EE-SX3162-P1
Black 	Black 

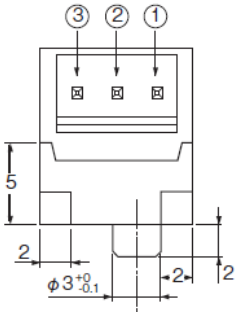
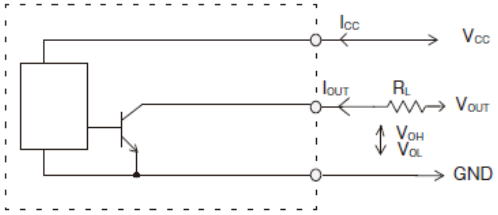
[Body color]

Product discontinuation Model EE-SX4157E-P1	Recommendable replacement Model EE-SX4162-P1
Black 	Black 

[Wire connection]

Product discontinuation Model EE-SA113	Recommendable replacement Model EE-SA105
Wire connection  **Internal Circuit**  Terminal No. / Name: A Anode; K Cathode; C Collector; E Emitter	**Wire connection**  **Internal Circuit**  Terminal No. / Name: A Anode; K Cathode; C Collector; E Emitter

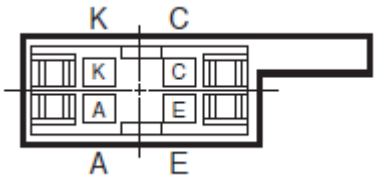
Product discontinuation Model EE-SM8	Recommendable replacement Model EE-SX1070
Wire connection  **Internal Circuit**  Terminal No. / Name: A Anode; K Cathode; C Collector; E Emitter	**Wire connection**  **Internal Circuit**  Terminal No. / Name: A Anode; K Cathode; C Collector; E Emitter

Product discontinuation Model EE-SPY414	Recommendable replacement Model EE-SPY415
Wire connection  ① Vcc ② OUTPUT ③ GND	

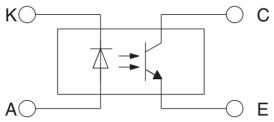
[Wire connection]

Product discontinuation Model EE-SX153-B

Wire connection



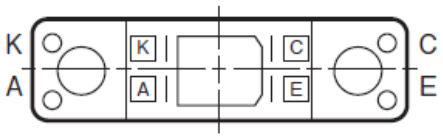
Internal Circuit



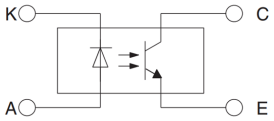
Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Recommendable replacement Model EE-SG3 / Model EE-SG3-B

Wire connection



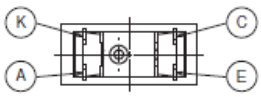
Internal Circuit



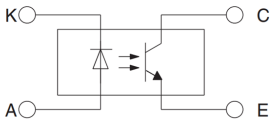
Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Product discontinuation Model EE-SX1049

Wire connection



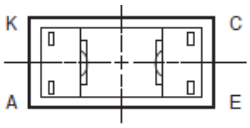
Internal Circuit



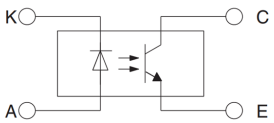
Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Recommendable replacement Model EE-SX1018

Wire connection



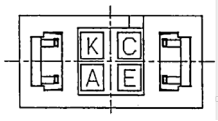
Internal Circuit



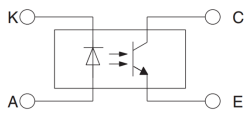
Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Product discontinuation Model EE-SX1061

Wire connection



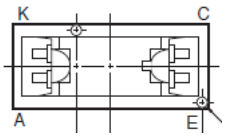
Internal Circuit



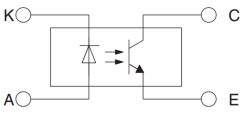
Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Recommendable replacement Model EE-SX1041

Wire connection



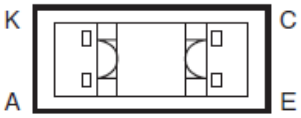
Internal Circuit



Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

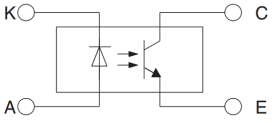
Product discontinuation Model EE-SX1071-RANKB

Wire connection



Recommendable replacement Model EE-SX1071

Internal Circuit

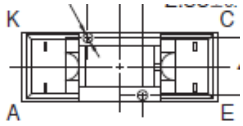


Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

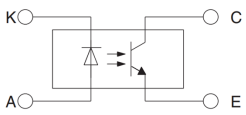
[Wire connection]

Product discontinuation Model EE-SX1137-OMI

Wire connection



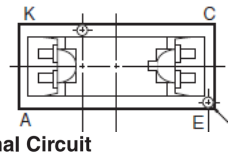
Internal Circuit



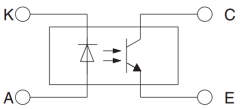
Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Recommendable replacement Model EE-SX1041

Wire connection



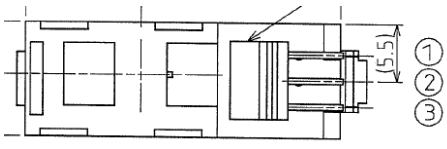
Internal Circuit

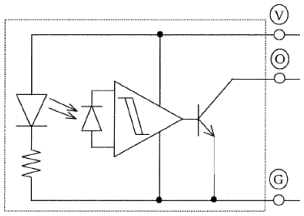


Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Product discontinuation Model EE-SX460-P6 MID

Wire connection

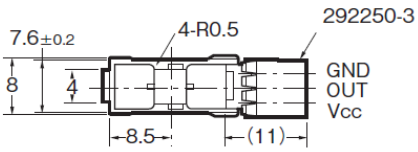


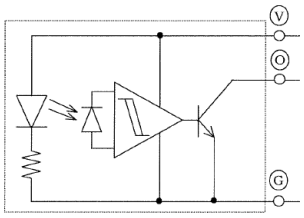


Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

Recommendable replacement Model EE-SX4235A-P2

Wire connection

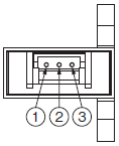




Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

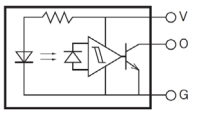
Product discontinuation Model EE-SX3157-P1

Wire connection



Terminal No.	Name
1	Power supply (Vcc)
2	Output (OUT)
3	Ground (GND)

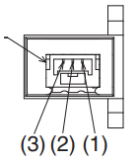
Internal Circuit



Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

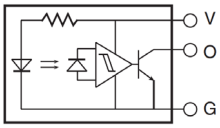
Recommendable replacement Model EE-SX3162-P1

Wire connection



Terminal No.	Name
(1)	Ground (GND)
(2)	Output (OUT)
(3)	Power supply (Vcc)

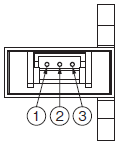
Internal Circuit



Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

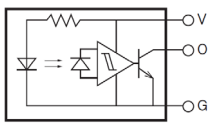
Product discontinuation Model EE-SX4157E-P1

Wire connection



Terminal No.	Name
1	Power supply (Vcc)
2	Output (OUT)
3	Ground (GND)

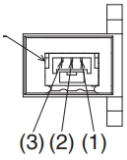
Internal Circuit



Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

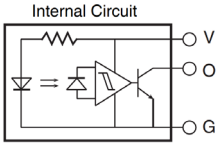
Recommendable replacement Model EE-SX4162-P1

Wire connection



Terminal No.	Name
(1)	Ground (GND)
(2)	Output (OUT)
(3)	Power supply (Vcc)

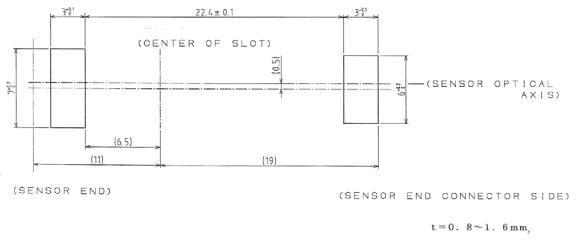
Internal Circuit

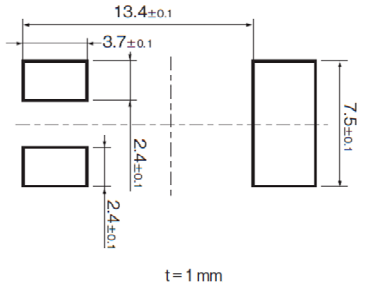


Terminal No.	Name
V	Power supply (Vcc)
O	Output (OUT)
G	Ground (GND)

[Mounting dimensions]

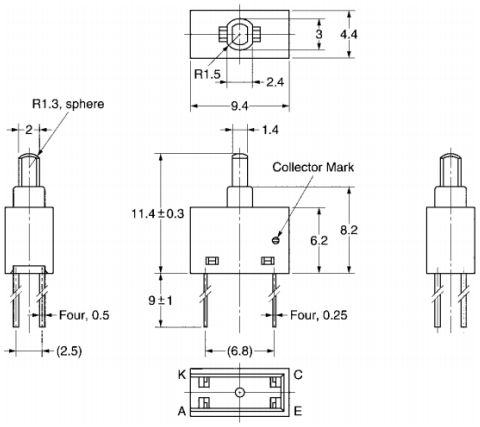
Product discontinuation Model EE-SX460-P6 MID	Recommendable replacement Model EE-SX4235A-P2
Recommended Mounting Holes	**Recommended Mounting Holes**

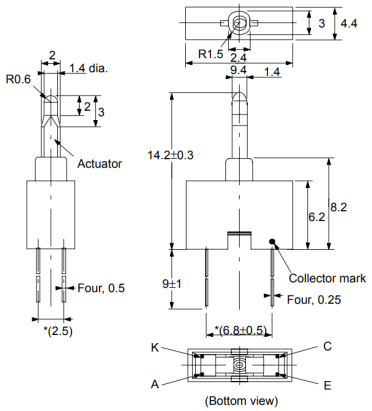




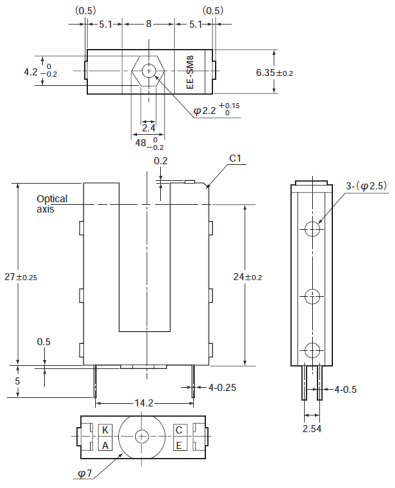
[Dimensions]

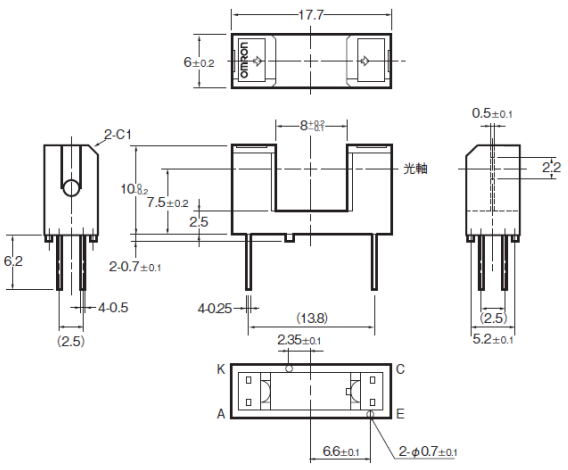
Product discontinuation Model EE-SA113	Recommendable replacement Model EE-SA105
Dimensions W × L × H: 4.4 mm × 9.4 mm × 11.4 mm	**Dimensions** W × L × H: 4.4 mm × 9.4 mm × 14.2 mm



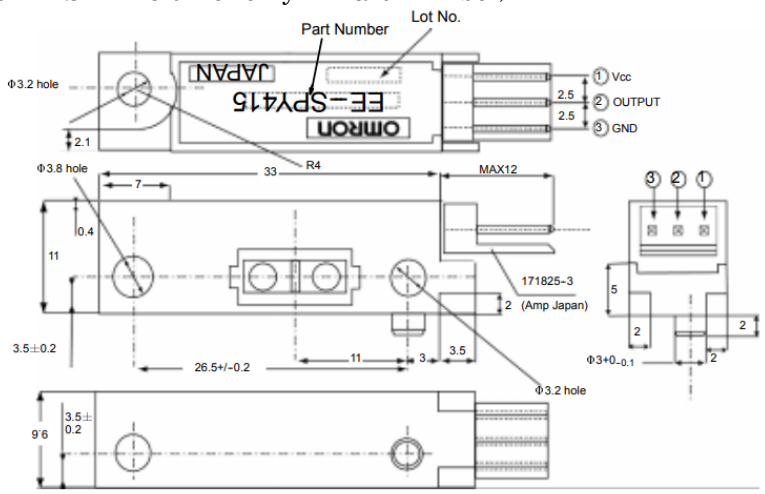


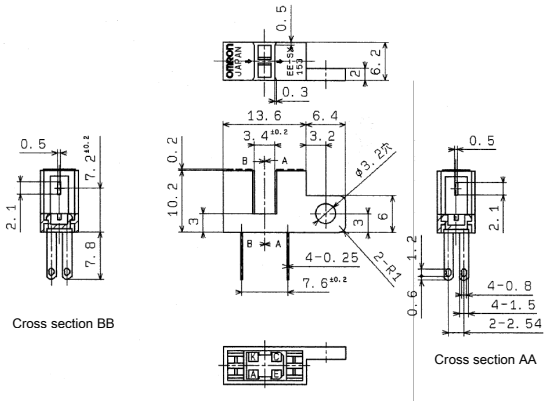
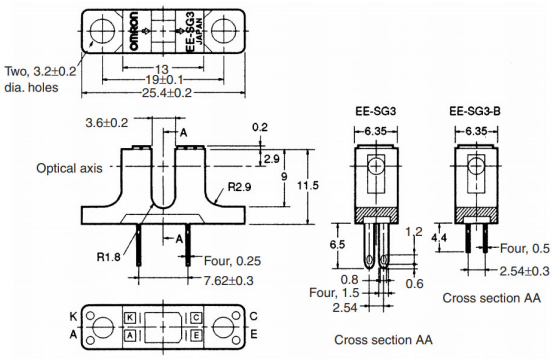
Product discontinuation Model EE-SM8	Recommendable replacement Model EE-SX1070
Dimensions W × L × H: 6.35 mm × 19.2 mm × 27 mm Slot width: 8 mm	**Dimensions** W × L × H: 6 mm × 17.7 mm × 10 mm Slot width: 8 mm

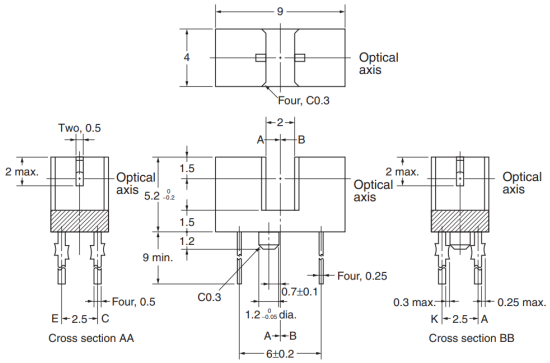
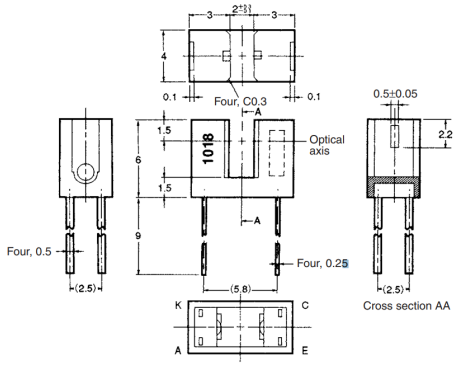




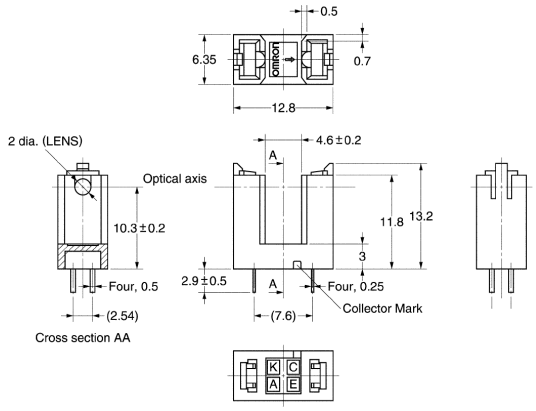
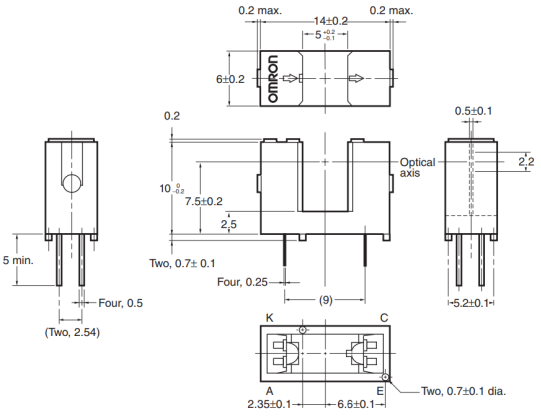
[Dimensions]

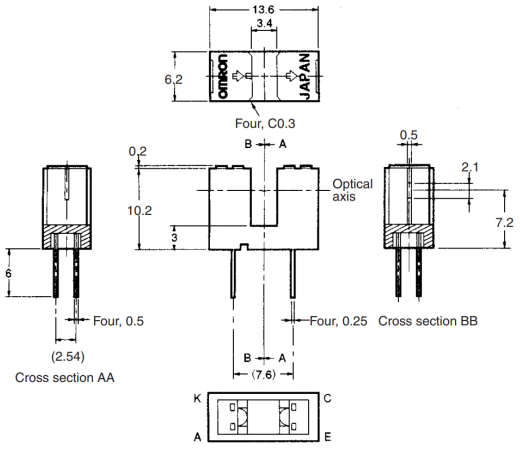
Product discontinuation Model EE-SPY414	Recommendable replacement Model EE-SPY415
Dimensions W × L × H: 52 mm × 9.6 mm × 11 mm (* EE-SPY414 and EE-SPY415 differ only in Part Number) 	

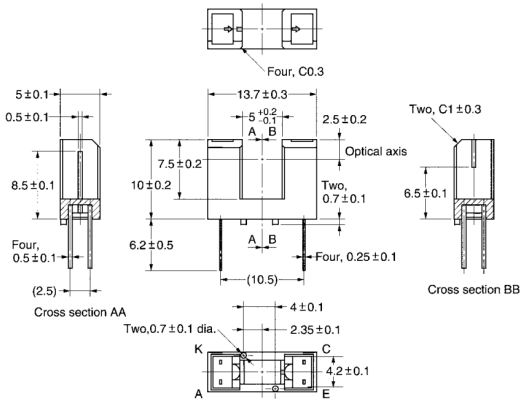
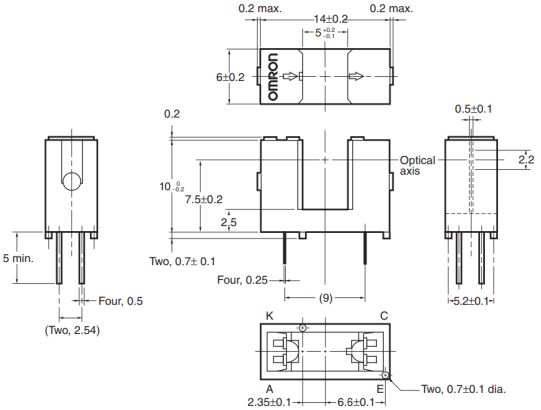
Product discontinuation Model EE-SX153-B	Recommendable replacement Model EE-SG3 / Model EE-SG3-B
Dimensions W × L × H: 6.2 mm × 20 mm × 10.4 mm Slot width: 3.4 mm 	**Dimensions** W × L × H: 6.35 mm × 25.4 mm × 11.7 mm Slot width: 3.6 mm 

Product discontinuation Model EE-SX1049	Recommendable replacement Model EE-SX1018
Dimensions W × L × H: 4 mm × 9 mm × 5.2 mm Slot width: 2 mm 	**Dimensions** W × L × H: 4 mm × 8 mm × 6 mm Slot width: 2 mm 

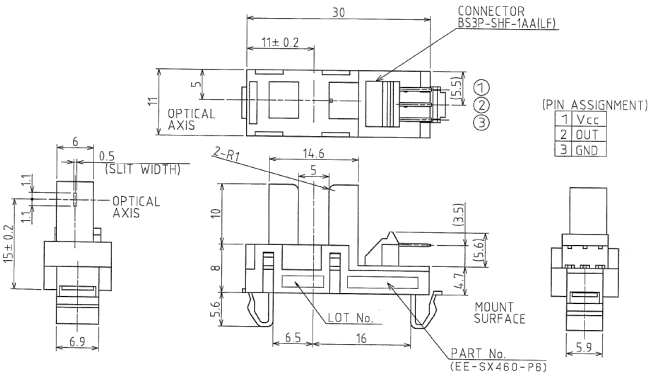
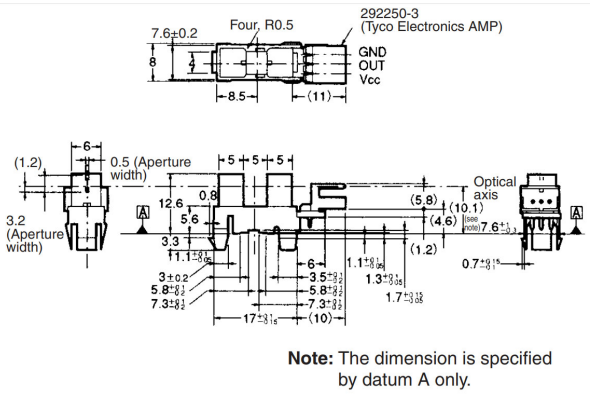
[Dimensions]

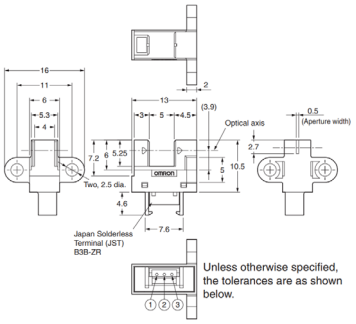
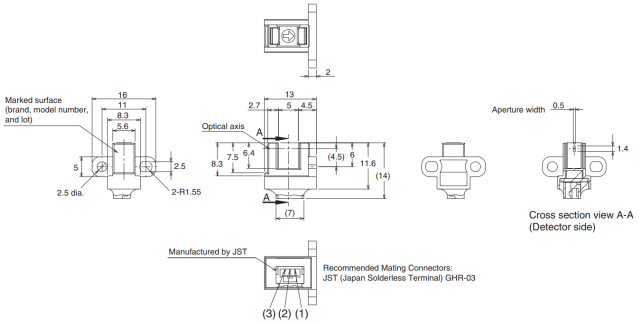
Product discontinuation Model EE-SX1061	Recommendable replacement Model EE-SX1041
Dimensions W × L × H: 6.35 mm × 12.8 mm × 13.2 mm Slot width: 4.6 mm 	**Dimensions** W × L × H: 6 mm × 14 mm × 10.2 mm Slot width: 5 mm 

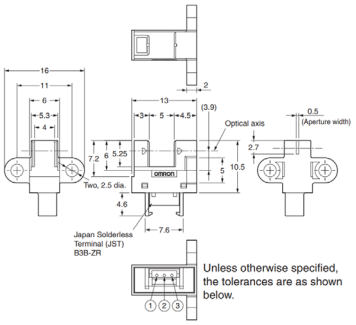
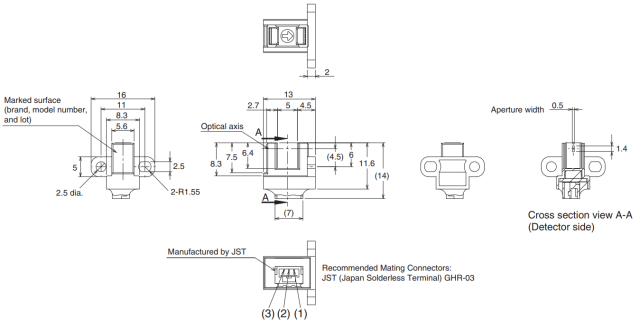
Product discontinuation Model EE-SX1071-RANKB	Recommendable replacement Model EE-SX1071
Dimensions W × L × H: 6.2 mm × 13.6 mm × 10.4 mm Slot width: 3.4 mm 	

Product discontinuation Model EE-SX1137-OMI	Recommendable replacement Model EE-SX1041
Dimensions W × L × H: 5 mm × 13.7 mm × 10 mm Slot width: 5 mm 	**Dimensions** W × L × H: 6 mm × 14 mm × 10.2 mm Slot width: 5 mm 

[Dimensions]

Product discontinuation Model EE-SX460-P6 MID	Recommendable replacement Model EE-SX4235A-P2
Dimensions W × L × H: 11 mm × 30 mm × 18 mm Slot width: 5 mm 	**Dimensions** W × L × H: 8 mm × 27 mm × 12.6 mm Slot width: 5 mm 

Product discontinuation Model EE-SX3157-P1	Recommendable replacement Model EE-SX3162-P1
Dimensions W × L × H: 6 mm × 13 mm × 10.5 mm Slot width: 5 mm 	**Dimensions** W × L × H: 8.3 mm × 13 mm × 11.6 mm Slot width: 5 mm 

Product discontinuation Model EE-SX4157E-P1	Recommendable replacement Model EE-SX4162-P1
Dimensions W × L × H: 6 mm × 13 mm × 10.5 mm Slot width: 5 mm 	**Dimensions** W × L × H: 8.3 mm × 13 mm × 11.6 mm Slot width: 5 mm 

[Characteristics]

Item	Product discontinuation Model EE-SA113	Recommendable replacement Model EE-SA105
Emitter Forward current	Maximum Ratings 50 mA	
Emitter Reverse voltage	Maximum Ratings 4 V	
Detector Collector-Emitter	Maximum Ratings 30 V	
Detector Collector current	Maximum Ratings 20mA	
Detector Collector dissipation	Maximum Ratings 100 mW	
Operating temperature	-25°C to 70°C	
Storage temperature	-40°C to 85°C	-40°C to 100°C
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF = 30 mA)	
Emitter Peak emission wavelength	TYP: 940 nm (Conditions IF = 20 mA)	
Detector Light current	MIN: 0.5 mA (Conditions IF = 20 mA, V_{CE} = 5 V, at free position (FP))	
Detector Dark current	TYP: 2 nA MAX: 200 nA (V_{CE} = 10 V, 0 lx)	
Detector Leakage current	MAX: 10 uA (Conditions IF = 20 mA, V_{CE} = 5 V, at operating position (OP))	
Detector Collector-Emitter saturated voltage	TYP: 0.15 V MAX: 0.4 V (Conditions IF = 20 mA, I_L = 0.1 mA)	
Detector Peak spectral sensitivity wavelength	TYP: 850 nm (Conditions V_{CE} = 10 V)	
Actuator operation (FP)	14.2±0.3 mm (Conditions IF = 20 mA, V_{CE} = 5 V)	11.4±0.3 mm (Conditions IF = 20 mA, V_{CE} = 5 V)
Actuator operation (OP)	MIN: 13 mm (Conditions IF = 20 mA, V_{CE} = 5 V)	MIN: 10.2 mm (Conditions IF = 20 mA, V_{CE} = 5 V)
Total travel position (TTP)	MAX: 12.1 mm (Conditions IF = 20 mA, V_{CE} = 5 V)	MAX: 9.3 mm (Conditions IF = 20 mA, V_{CE} = 5 V)
Operating temperature force	0.15 N (15 gf) max.	
Mechanical life expectancy	500,000 operations min. (The actuator traveling from its FP to FP via TTP is regarded as one operation.)	

[Characteristics]

Item	Product discontinuation Model EE-SM8	Recommendable replacement Model EE-SX1070
Emitter Forward current	Maximum Ratings 50 mA	
Emitter Reverse voltage	Maximum Ratings 4 V	
Detector Collector-Emitter	Maximum Ratings 30 V	
Detector Collector current	Maximum Ratings 20mA	
Detector Collector dissipation	Maximum Ratings 100 mW	
Operating temperature	-25°C to 85°C	-25°C to 95°C
Storage temperature	-30°C to 100°C	-30°C to 100°C
Emitter Forward voltage	TYP: 1.15 V MAX: 1.5 V (Conditions IF = 30 mA)	TYP: 1.2 V MAX: 1.5 V (Conditions IF = 30 mA)
Emitter Peak emission wavelength	TYP: 940nm (Conditions IF = 15 mA)	TYP: 940nm (Conditions IF = 20 mA)
Detector Light current	MIN: 1.0 mA TYP: 5.0 mA (Conditions IF = 15 mA, V_{CE} = 10 V)	MIN: 0.5 mA MAX: 14 mA (Conditions IF = 20 mA, V_{CE} = 10 V)
Detector Dark current	TYP: 2 nA MAX: 200 nA (V_{CE} = 10 V, 0 lx)	
Detector Collector-Emitter saturated voltage	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 30 mA, I_L = 0.5 mA)	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 20 mA, I_L = 0.1 mA)
Detector Peak spectral sensitivity wavelength	TYP: 850 nm (Conditions V_{CE} = 10 V)	
Rising time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	
Falling time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	

[Characteristics]

Item	Product discontinuation Model EE-SPY414	Recommendable replacement Model EE-SPY415
Power supply voltage	Maximum Ratings 7 VDC	
Output voltage	Maximum Ratings 16 V	
Output current	Maximum Ratings 30 mA	
Permissible output dissipation	Maximum Ratings 250 mW	
Operating temperature	-10°C to 60°C	
Storage temperature	-40°C to 85°C	
Current consumption	MAX: 40 mA (Conditions With and without incident)	MAX: 25 mA (Conditions With and without incident)
Low-level output voltage	MAX: 0.4 V (Conditions I_{OUT} = 20 mA, With incident)	
High-level output voltage	MIN: (V_{CC} × 0.9) (Conditions V_{OUT} = V_{CC}, R_L = 1 kΩ, Without incident)	
Response delay time	MAX: 1 msec (Conditions V_{OUT} = V_{CC}, R_L = 1 kΩ)	
Detectable distance	11±5 mm (Black paper and OHP paper), 12±10 mm (White paper)	11±2 mm (Black paper and OHP paper), 11±8 mm (White paper)
Non-detectable distance	25 mm (Black sponge)	20 mm (Black sponge), 45 mm (White paper)
Usable ambient illumination	3,000 Lx max. at Receiver surface (incandescent lamp, fluorescent lamp)	

[Characteristics]

Item	Product discontinuation Model EE-SX153-B	Recommendable replacement Model EE-SG3 / Model EE-SG3-B
Emitter Forward current	Maximum Ratings 50 mA	
Emitter Reverse voltage	Maximum Ratings 4 V	
Detector Collector-Emitter	Maximum Ratings 30 V	
Detector Collector current	Maximum Ratings 20 mA	
Detector Collector dissipation	Maximum Ratings 100 mW	
Operating temperature	-25°C to 85°C	
Storage temperature	-40°C to 100°C	-30°C to 100°C
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF = 30 mA)	
Emitter Peak emission wavelength	TYP: 940 nm (Conditions IF = 20 mA)	
Detector Light current	MIN: 0.5 mA MAX: 1.4 mA (Conditions IF = 20 mA, V_{CE} = 10 V)	MIN: 2 mA MAX: 40 mA (Conditions IF = 15 mA, V_{CE} = 10 V)
Detector Dark current	TYP: 2 nA MAX: 200 nA (V_{CE} = 10 V, 0 lx)	
Detector Collector-Emitter saturated voltage	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 20 mA, I_L = 0.1 mA)	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 30 mA, I_L = 1 mA)
Detector Peak spectral sensitivity wavelength	TYP: 850 nm (Conditions V_{CE} = 10 V)	
Rising time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	
Falling time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	

[Characteristics]

Item	Product discontinuation Model EE-SX1049	Recommendable replacement Model EE-SX1018
Emitter Forward current	Maximum Ratings 50 mA	
Emitter Reverse voltage	Maximum Ratings 4 V	
Detector Collector-Emitter	Maximum Ratings 30 V	
Detector Collector current	Maximum Ratings 20 mA	
Detector Collector dissipation	Maximum Ratings 100 mW	
Operating temperature	-25°C to 85°C	
Storage temperature	-30°C to 100°C	
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF = 30 mA)	
Emitter Peak emission wavelength	TYP: 940 nm (Conditions IF = 20 mA)	
Detector Light current	MIN: 0.5 mA MAX: 14 mA (Conditions IF = 20 mA, V_{CE} = 10 V)	
Detector Dark current	TYP: 2 nA MAX: 200 nA (V_{CE} = 10 V, 0 lx)	
Detector Collector-Emitter saturated voltage	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 20 mA, I_L = 0.1 mA)	
Detector Peak spectral sensitivity wavelength	TYP: 850 nm (Conditions V_{CE} = 10 V)	
Rising time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	
Falling time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	

[Characteristics]

Item	Product discontinuation Model EE-SX1061	Recommendable replacement Model EE-SX1041
Emitter Forward current	Maximum Ratings 50 mA	
Emitter Reverse voltage	Maximum Ratings 4 V	
Detector Collector-Emitter	Maximum Ratings 30 V	
Detector Collector current	Maximum Ratings 20 mA	
Detector Collector dissipation	Maximum Ratings 100 mW	
Operating temperature	-40°C to 85°C	-25°C to 95°C
Storage temperature	-40°C to 100°C	-30°C to 100°C
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF = 30 mA)	
Emitter Peak emission wavelength	TYP: 940 nm (Conditions IF = 20 mA)	
Detector Light current	MIN: 1.3 mA MAX: 26 mA (Conditions IF = 20 mA, V_{CE} = 12 V)	MIN: 0.5 mA MAX: 14 mA (Conditions IF = 20 mA, V_{CE} = 10 V)
Detector Dark current	TYP: 2 nA MAX: 200 nA (V_{CE} = 10 V, 0 lx)	
Detector Collector-Emitter saturated voltage	MAX: 0.8 V (Conditions IF = 10 mA, V_{CC} = 12 V, R_L = 22 kΩ)	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 20 mA, I_L = 0.1 mA)
Detector Peak spectral sensitivity wavelength	TYP: 850 nm (Conditions V_{CE} = 10 V)	
Rising time	MAX: 1000 us (Conditions Vcc = 12 V, R_L = 22 kΩ, I_L = 10 mA)	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)
Falling time	MAX: 1000 us (Conditions Vcc = 12 V, R_L = 22 kΩ, I_L = 10 mA)	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)

[Characteristics]

Item	Product discontinuation Model EE-SX1071-RANKB	Recommendable replacement Model EE-SX1071
Emitter Forward current	Maximum Ratings 50 mA	
Emitter Reverse voltage	Maximum Ratings 4 V	
Detector Collector-Emitter	Maximum Ratings 30 V	
Detector Collector current	Maximum Ratings 20mA	
Detector Collector dissipation	Maximum Ratings 100 mW	
Operating temperature	-25°C to 85°C	
Storage temperature	-30°C to 100°C	
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF = 30 mA)	
Emitter Peak emission wavelength	TYP: 940 nm (Conditions IF = 20 mA)	
Detector Light current	MIN: 1.0 mA MAX: 14 mA (Conditions IF = 20 mA, V_{CE} = 10 V)	MIN: 0.5 mA MAX: 14 mA (Conditions IF = 20 mA, V_{CE} = 10 V)
Detector Dark current	TYP: 2 nA MAX: 200 nA (V_{CE} = 10 V, 0 lx)	
Detector Collector-Emitter saturated voltage	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 20 mA, I_L = 0.1 mA)	
Detector Peak spectral sensitivity wavelength	TYP: 850 nm (Conditions V_{CE} = 10 V)	
Rising time	TYP: 4 us (Conditions V_{CC} = 5 V, R_L = 100Ω, I_L = 5 mA)	
Falling time	TYP: 4 us (Conditions V_{CC} = 5 V, R_L = 100Ω, I_L = 5 mA)	

[Characteristics]

Item	Product discontinuation Model EE-SX1137-OMI	Recommendable replacement Model EE-SX1041
Emitter Forward current	Maximum Ratings 50 mA	
Emitter Reverse voltage	Maximum Ratings 4 V	
Detector Collector-Emitter	Maximum Ratings 30 V	
Detector Collector current	Maximum Ratings 20 mA	
Detector Collector dissipation	Maximum Ratings 100 mW	
Operating temperature	-25°C to 85°C	-25°C to 95°C
Storage temperature	-30°C to 100°C	-30°C to 100°C
Emitter Forward voltage	TYP: 1.2 V MAX: 1.5 V (Conditions IF = 30 mA)	
Emitter Peak emission wavelength	TYP: 940 nm (Conditions IF = 20 mA)	
Detector Light current	MIN: 0.5 mA MAX: 14 mA (Conditions IF = 20 mA, V_{CE} = 10 V)	
Detector Dark current	TYP: 2 nA MAX: 200 nA (V_{CE} = 10 V, 0 lx)	
Detector Collector-Emitter saturated voltage	TYP: 0.1 V MAX: 0.4 V (Conditions IF = 20 mA, I_L = 0.1 mA)	
Detector Peak spectral sensitivity wavelength	TYP: 850 nm (Conditions V_{CE} = 10 V)	
Rising time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	
Falling time	TYP: 4 us (Conditions Vcc = 5 V, R_L = 100Ω, I_L = 5 mA)	

[Characteristics]

Item	Product discontinuation Model EE-SX460-P6 MID	Recommendable replacement Model EE-SX4235A-P2
Power supply voltage	Maximum Ratings 7 VDC	
Output voltage	Maximum Ratings 28 V	
Output current	Maximum Ratings 16 mA	
Permissible output dissipation	Maximum Ratings 250 mW	
Operating temperature	-20°C to 75°C	
Storage temperature	-40°C to 85°C	
Current consumption	MAX: 30 mA (Conditions With and without incident)	MAX: 16.5 mA (Conditions With and without incident)
Low-level output voltage	MAX: 0.3 V (Conditions I_{OUT} = 16 mA, With incident)	MAX: 0.35 V (Conditions I_{OUT} = 16 mA, With incident)
High-level output voltage	MIN: (V_{CC} × 0.9) (Conditions V_{OUT} = V_{CC}, R_L = 1 kΩ, Without incident)	
Response frequency	MIN: 3 kHz (Conditions V_{OUT} = V_{CC}, R_L = 47 kΩ)	

Item	Product discontinuation Model EE-SX3157-P1	Recommendable replacement Model EE-SX3162-P1
Power supply voltage	Maximum Ratings 13.2 V	
Output voltage	Maximum Ratings 13.2 V	
Output current	Maximum Ratings 16 mA	
Permissible output dissipation	Maximum Ratings 250 mW	Maximum Ratings 80 mW
Operating temperature	-20°C to 85°C	
Storage temperature	-30°C to 85°C	
Current consumption	MAX: 25 mA (Conditions With and without incident)	
Low-level output voltage	MAX: 0.3 V (Conditions I_{OUT} = 16 mA, Without incident)	
High-level output voltage	MIN: (V_{CC} × 0.9) (Conditions V_{OUT} = V_{CC}, R_L = 47 kΩ, With incident)	
Response frequency	MIN: 3 kHz (Conditions V_{OUT} = V_{CC}, R_L = 47 kΩ)	MIN: 3 kHz (Conditions V_{OUT} = V_{CC}, I_{OUT} = 16 mA)

[Characteristics]

Item	Product discontinuation Model EE-SX4157E-P1	Recommendable replacement Model EE-SX4162-P1
Power supply voltage	Maximum Ratings 13.2 V	
Output voltage	Maximum Ratings 13.2 V	
Output current	Maximum Ratings 16 mA	
Permissible output dissipation	Maximum Ratings 250 mW	Maximum Ratings 80 mW
Operating temperature	-20°C to 85°C	
Storage temperature	-30°C to 85°C	
Current consumption	MAX: 25 mA (Conditions With and without incident)	
Low-level output voltage	MAX: 0.3 V (Conditions I_{OUT} = 16 mA, With incident)	
High-level output voltage	MIN: (V_{CC} × 0.9) (Conditions V_{OUT} = V_{CC}, R_L = 47 kΩ, Without incident)	
Response frequency	MIN: 3 kHz (Conditions V_{OUT} = V_{CC}, R_L = 47 kΩ)	MIN: 3 kHz (Conditions V_{OUT} = V_{CC}, I_{OUT} = 16 mA)

Specifications and prices 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.