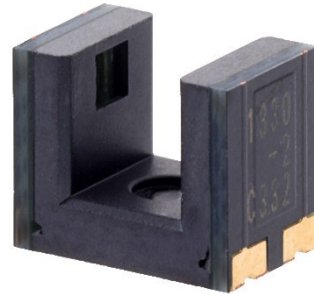


NPI

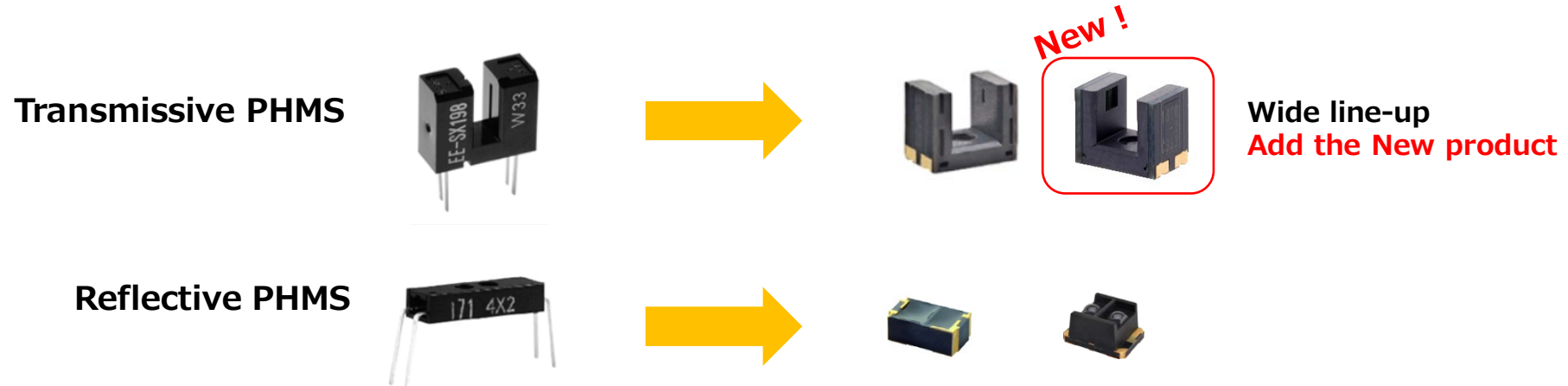
New Transmissive SMD type PHotoMicroSensor (PHMS)
EE-SX1330-2 (High-speed response type)



OMRON

Background of Product Launch

Focus on SMD type PHMS and target to Automation Equipment.



- ① We focus on trending SMD types PHMS, and target to Automation Equipment.
- ② Our transmissive SMD type PHMS are growing year by year.
- ③ We would like to expand transmissive PHMS variation.

Market Trends

SMD Market is growing with CAGR over 109%.



SMD market expansion factors

- Progressing downsizing the Home appliances
- Increasing the Electric vehicles
- Increasing the flex circuits in Mobile equipment

SMD market shrinking factors

- High cost
- High quality control about mounting
(Thermal, Frequency)

Reference : SDKI Inc.「表面実装技術（SMT）市場—世界的な予測2030年」

New Product Main Spec

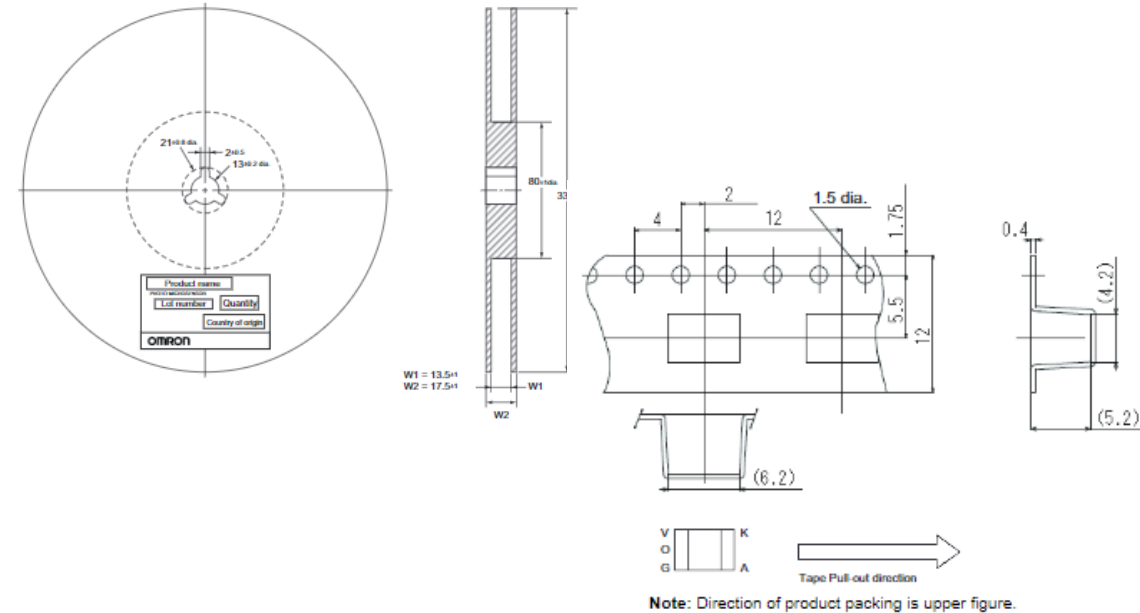
3-mm slot width x SMD x High-speed response type

Description : EE-SX1330-2

Tape and Reel of EE-SX1330-2



項目	EE-SX1330-2
Outline Size W×D×H	
Slot width	3mm
Mounting	SMD
Output	Phototransistor (Analog Output)
Tape and Reel	1,000 pcs/reel



New Product Features & Benefits

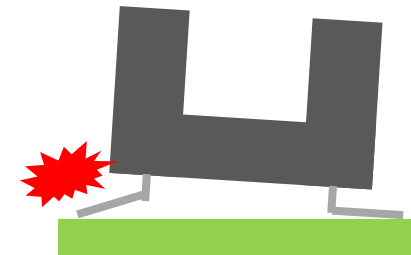
Features

- Hi speed response
- Surface Mount
- Outline 5×6×4mm
- Side Pad



Benefits

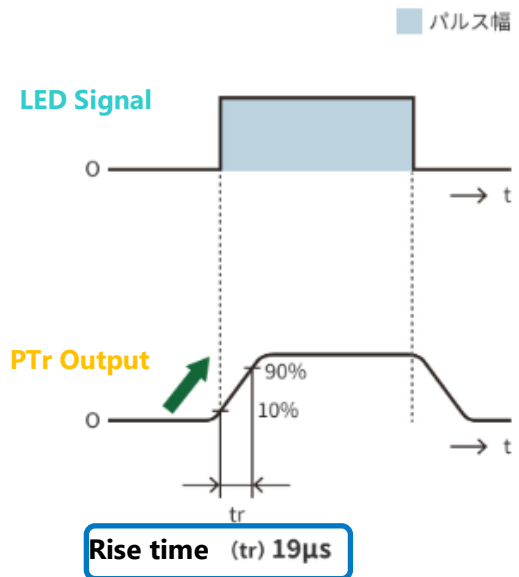
- Rise/Fall time is shorter than standard type.
To reduce Power Consumption in PWM.
- Reflow Soldering
- Miniaturization
- Good Mounting stability
(compared with Lead terminal bending)



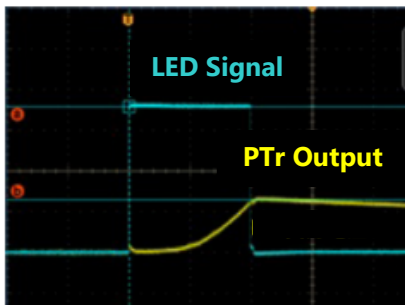
New Product Features & Benefits

EE-SX1330-2 is higher speed response vs standard EE-SX1330.

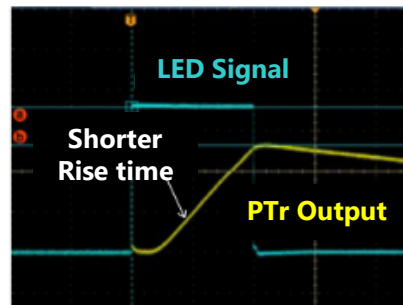
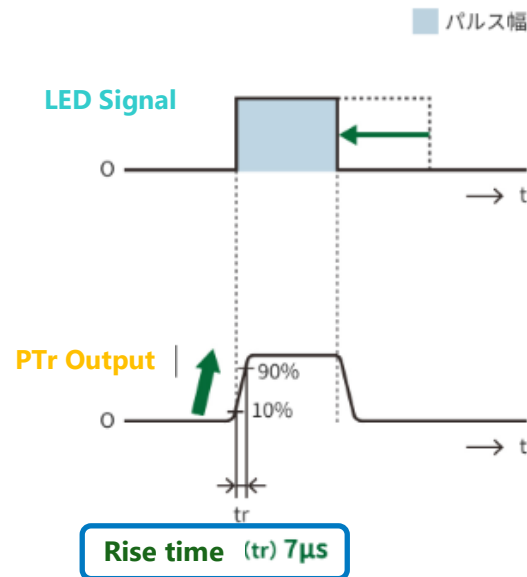
Standard (形EE-SX1330)



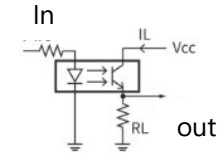
PTr出力電圧の計測波形 (パルス幅を小さくした場合)



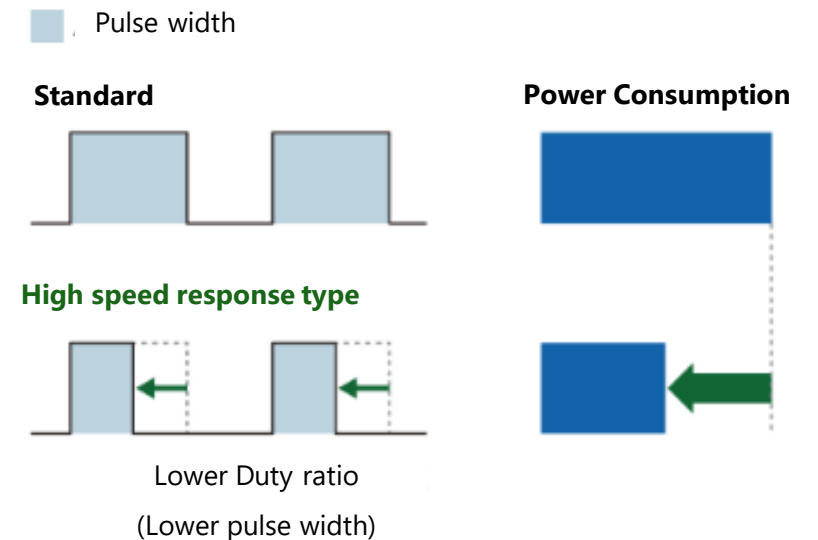
High speed response (形EE-SX1330-2)



項目	記号	特性値			単位	条件
		MIN.	TYP.	MAX.		
標準タイプ (形EE-SX1330)						
Rise time	t_r	—	19	—	μ s	$V_{cc}=5V, R_L=100\Omega, I_L=500\mu A$
Fall time	t_f	—	26	—	μ s	
高速応答タイプ (形EE-SX1330-2)						
Rise time	t_r	—	7	—	μ s	$V_{cc}=5V, R_L=100\Omega, I_L=500\mu A$
Fall time	t_f	—	11	—	μ s	



Reduce the power consumption using Pulse Width Modulation(PWM).



Product Positioning

Competitor doesn't have Transmissive SMD Hi-speed response type.
Omron target to 3-5mm slot width and special type.

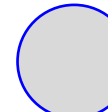
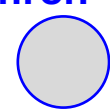
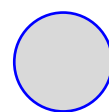
Slot width		1mm		2mm		3mm		4mm		5mm	
Output		PTr	PIC	PTr	PIC	PTr	PIC	PTr	PIC	PTr	PIC
Competitor	S*	√	x	√	x	x	x	x	x	x	x
	R*	√	x	√	x	√	x	√ 4.5mm	x	x	x
	K*	x	x	√	x	√	x	x	x	x	x
	V*	x	x	x	x	√ 2ch/4ch	x	x	x	x	x
	O*	x	x	x	x	x	x	x	x	√	x
Omron (EE-SX series)		x	x	SX1320 SX1321(2ch)	SX4320	SX1330 SX1330-2	SX4330	SX1340	SX3340 SX4340	SX1350	SX3350 SX4350

x = no product
√ = product available

Competitor Target

Omron Target

Market
POT



Automation Equipment



Competitor Info/Cross Reference



x = no product
√ = product available

SMD Type Transmissive

Slot Width		2mm	3mm	4mm	5mm	
Competitor	S*	PTr	√	x	x	x
		PIC	x	x	x	x
	R*	PTr	√	√	√	x
		PIC	x	x	x	x
	K*	PTr	√	√	x	x
		PIC	x	x	x	x
	V*	PTr	x	√	x	x
		PIC	x	x	x	x
	Omron	PTr	EE-SX1320 /SX1321	EE-SX1330/ 1330-2	EE-SX1340	EE-SX1350
		PIC	EE-SX4320	EE-SX4330	EE-SX3340 /4340	EE-SX3350 /4350

ADVANTAGES OF PIC vs PTr



- Amplification of signal
- Digital output signal (ON/OFF)
- Stronger against noise (more stability)
- Two output polarities
- High speed of operation



Details of Target Application Examples

Smart Meter Gas/Water Meter



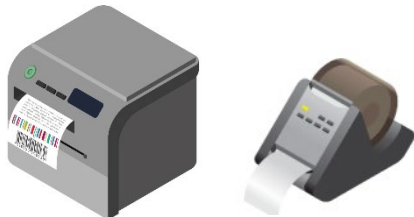
Function : Rotor rotation detection
for flow rate detection
Needs : Low electric consumption
=>PWM efficiency
Hi speed response time

Automation Equipment IP Camera



Function : Moving Position detection
Needs : Miniaturize
Low electric consumption

Automation Equipment Mini-Printers



Function : Unit detection
Needs : Miniaturize

Automation Equipment Laser Level line tool



Function : Rotation detection
Needs : Miniaturize



Thank You