

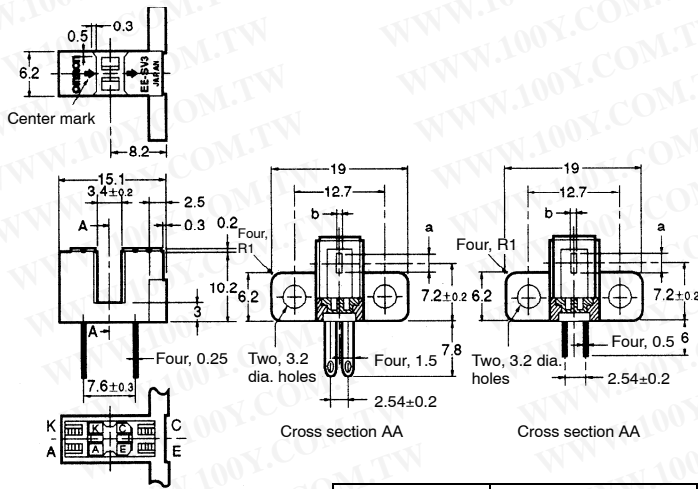
OMRON

# EE-SV3 Series

# Photomicrosensor (Transmissive)

## ■ Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

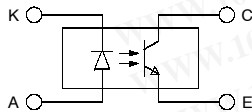


Model	Aperture (a x b)
EE-SV3(-B)	2.1 x 0.5
EE-SV3-C(S)	2.1 x 1.0
EE-SV3-D(S)	2.1 x 0.2
EE-SV3-G(S)	0.5 x 2.1

Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.2
3 < mm ≤ 6	±0.24
6 < mm ≤ 10	±0.29
10 < mm ≤ 18	±0.35
18 < mm ≤ 30	±0.42

### Internal Circuit



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

## ■ Features

- All models have a 3.4 mm wide slot.
- Solder terminal models:  
EE-SV3/-SV3-CS/-SV3-DS/-SV3-GS
- PCB terminal models  
EE-SV3-B/-SV3-C/-SV3-D/-SV3-G

## ■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value
Emitter	Forward current	$I_F$ 50 mA (see note 1)
	Pulse forward current	$I_{FP}$ 1 A (see note 2)
	Reverse voltage	$V_R$ 4 V
Detector	Collector-Emitter voltage	$V_{CEO}$ 30 V
	Emitter-Collector voltage	$V_{ECO}$ ---
	Collector current	$I_C$ 20 mA
	Collector dissipation	$P_C$ 100 mW (see note 1)
Ambient temperature	Operating	$T_{opr}$ -25°C to 85°C
	Storage	$T_{stg}$ -30°C to 100°C
Soldering temperature	$T_{sol}$	260°C (see note 3)

- Note:**
- Refer to the temperature rating chart if the ambient temperature exceeds 25°C.
  - Pulse width is 10 μs max. with a frequency of 100 Hz.
  - Complete soldering within 10 seconds.

## ■ Ordering Information

Description	Part number
Photomicrosensor (Transmissive)	EE-SV3(-B)
	EE-SV3-C(S)
	EE-SV3-D(S)
	EE-SV3-G(S)
	EE-SV3-G(S)

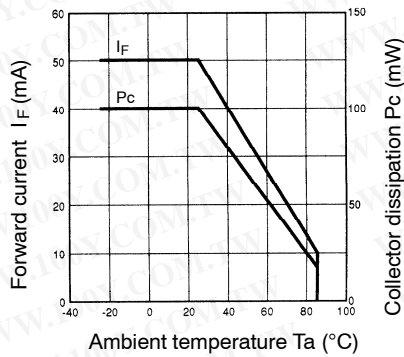
勝特力材料 886-3-5753170  
 胜特力电子(上海) 86-21-54151736  
 胜特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## ■ Electrical and Optical Characteristics (Ta = 25°C)

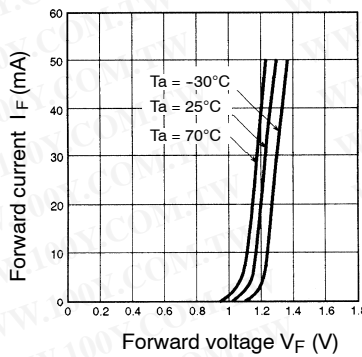
Item	Symbol	Value				Condition	
		EE-SV3(-B)	EE-SV3-C(S)	EE-SV3-D(S)	EE-SV3-G(S)		
Emitter	Forward voltage	$V_F$	1.2 V typ., 1.5 V max.			$I_F = 30$ mA	
	Reverse current	$I_R$	0.01 μA typ., 10 μA max.			$V_R = 4$ V	
	Peak emission wavelength	$\lambda_P$	940 nm typ.			$I_F = 20$ mA	
Detector	Light current	$I_L$	0.5 to 14 mA	1 to 28 mA	0.1 mA min.	0.5 to 14 mA	$I_F = 20$ mA, $V_{CE} = 10$ V
	Dark current	$I_D$	2 nA typ., 200 nA max.			$V_{CE} = 10$ V, 0 lx	
	Leakage current	$I_{LEAK}$	---			---	
	Collector-Emitter saturated voltage	$V_{CE(sat)}$	0.1 V typ., 0.4 V max.		---	0.1 V typ., 0.4 V max.	$I_F = 20$ mA, $I_L = 0.1$ mA
	Peak spectral sensitivity wavelength	$\lambda_P$	850 nm typ.			$V_{CE} = 10$ V	
Rising time	$t_r$	4 μs typ.				$V_{CC} = 5$ V, $R_L = 100 \Omega$ , $I_L = 5$ mA	
Falling time	$t_f$	4 μs typ.					

Engineering Data

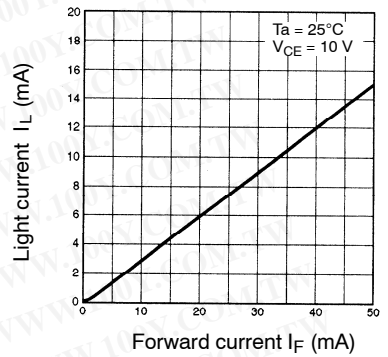
Forward Current vs. Collector Dissipation Temperature Rating



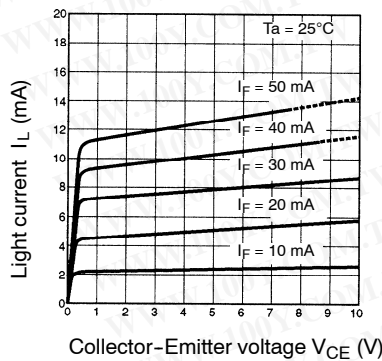
Forward Current vs. Forward Voltage Characteristics (Typical)



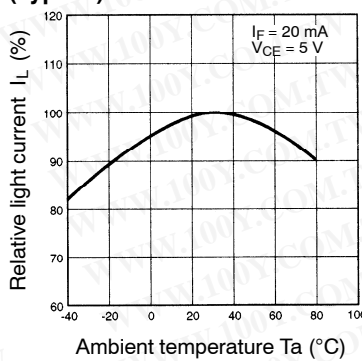
Light Current vs. Forward Current Characteristics (Typical)



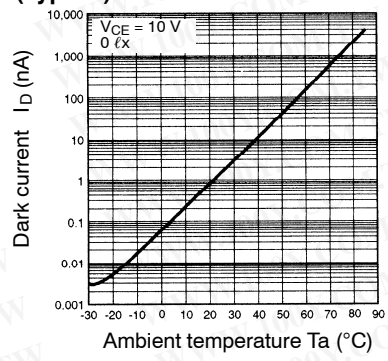
Light Current vs. Collector-Emitter Voltage Characteristics (EE-SV3(B))



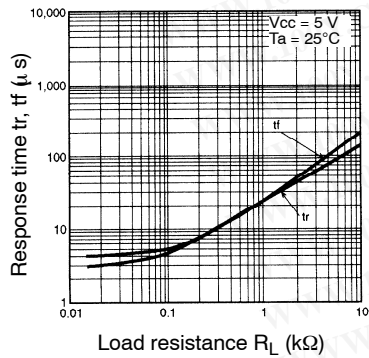
Relative Light Current vs. Ambient Temperature Characteristics (Typical)



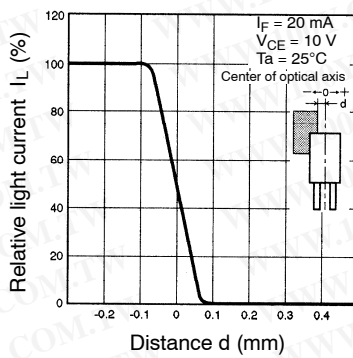
Dark Current vs. Ambient Temperature Characteristics (Typical)



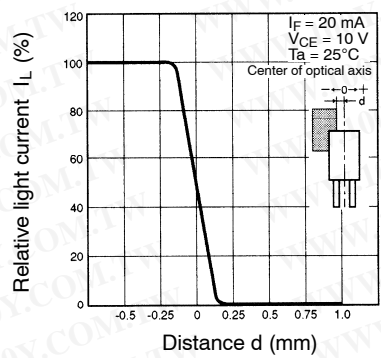
Response Time vs. Load Resistance Characteristics (Typical)



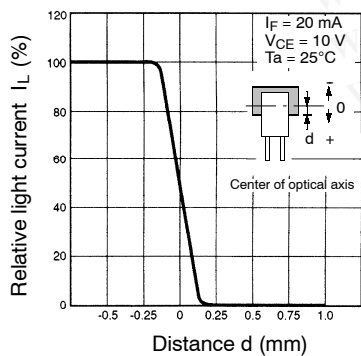
Sensing Position Characteristics (EE-SV3(D(S)))



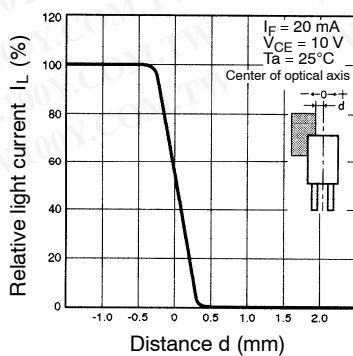
Sensing Position Characteristics (EE-SV3(B))



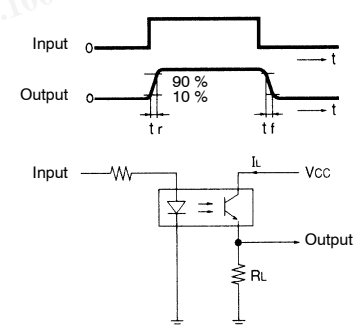
Sensing Position Characteristics (EE-SV3-G(S))



Sensing Position Characteristics (EE-SV3-C(S))



Response Time Measurement Circuit



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