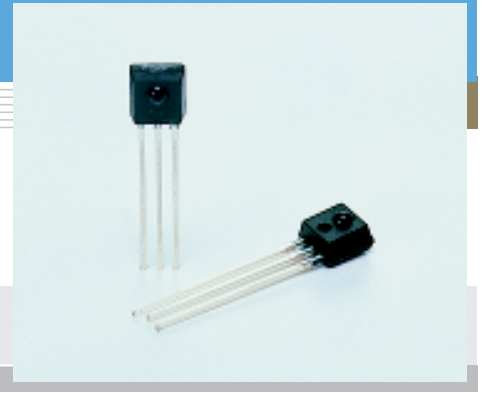


Photo IC S4825, S4826

Miniature package photo IC



S4825 and S4826 are digital output photo ICs consisting of a high-sensitivity photodiode, an amplifier, a schmitt trigger circuit and an output transistor, all integrated on one chip molded into a miniature visible-cut plastic package.

Features

- Miniature plastic package with lens
- Transistor output with built-in pull-up resistor
- S4825: "H" level output at light input
S4826: "L" level output at light input

Applications

- Paper detection in printers and copiers, etc.
- Optical switches
- Rotary encoders

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Supply voltage	Vcc	-0.5 to +12	V
Output voltage	Vo	-0.5 to Vcc	V
Low level output current	Io Max.	50	mA
Power dissipation	P	300	mW
Operating temperature	Topr	-25 to +85	°C
Storage temperature	Tstg	-40 to +100	°C
Soldering	-	260 °C, 3 s, at least 2.5 mm away from package surface	-

■ Electrical and optical characteristics (Ta=25 °C, Vcc=5 V, light source: λp=950 nm LED, unless otherwise noted)

Parameter	Symbol	Condition	S4825			S4826			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Supply voltage	Vcc		4.5	-	12	4.5	-	12	V
Low level output voltage	VOL	IOL=16 mA *1	-	0.1	0.4	-	0.1	0.4	V
High level output voltage	VOH	Vo=5 V *2	4.9	-	-	4.9	-	-	V
Low level current consumption	ICCL	*1	-	5.6	12	-	5.4	12	mA
High level current consumption	ICCH	*2	-	3.2	10	-	3.6	10	mA
L→H Threshold illuminance	ELH	RL=280 Ω	-	1	3	-	-	-	μW/mm²
H→L Threshold illuminance	EHL	RL=280 Ω	-	-	-	-	1	3	μW/mm²
Hysteresis	-	*3	-	0.9	-	-	0.9	-	-
L→H Propagation delay time	tPLH	E=8 μW/mm² RL=280 Ω	-	2.0	9	-	4.5	15	μs
H→L Propagation delay time	tPHL		-	3.5	15	-	1.0	9	μs
Rise time	tr		-	0.15	-	-	0.15	-	μs
Fall time	tf		-	0.03	-	-	0.03	-	μs
Peak sensitivity wavelength	λp		-	850	-	-	850	-	nm

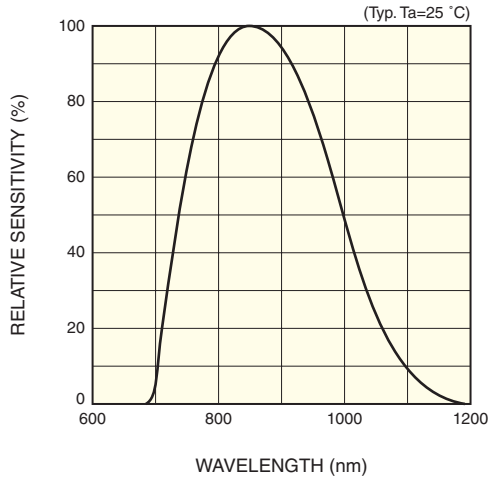
*1: S4825: E (illuminance) =0 μW/mm², S4826: E=8 μW/mm²

*2: S4825: E=8 μW/mm², S4826: E=0 μW/mm²

*3: S4825: EHL/ELH, S4826: ELH/EHL

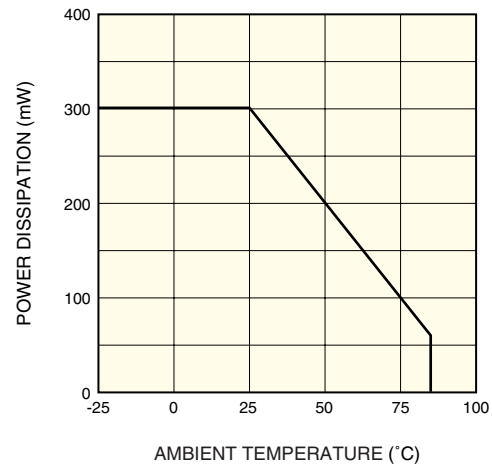
Note) Connect a 0.01 μF capacitor or larger between Vcc and GND.

Spectral response



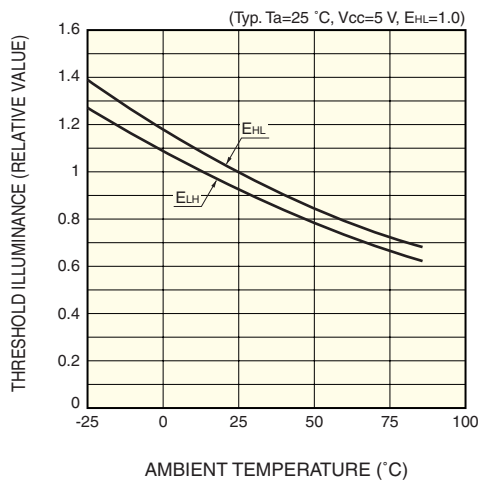
KPICB0028EA

Power dissipation vs. ambient temperature



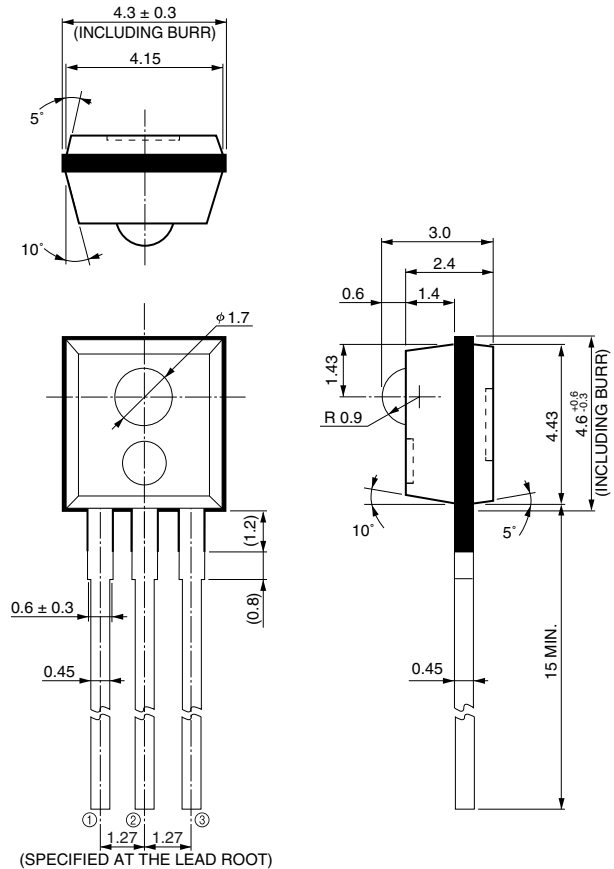
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Threshold illuminance vs. ambient temperature (S4826)



KPICB0031EA

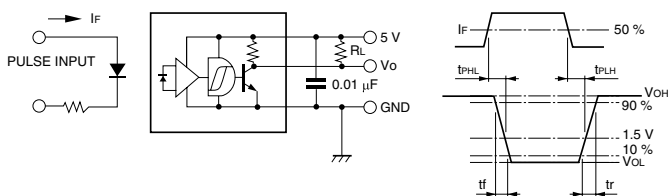
Dimensional outline (unit: mm)



Tolerance unless otherwise noted: ±0.2, ±2°
Shaded area indicates burr.
Values in parentheses are not guaranteed, but for reference.

KPICA0022EA

Response time measurement circuit (S4826)



KPICC0038EA

HAMAMATSU

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