

# KDT00030 Phototransistor Photo Detector

## Features

- Spectral response close to human eye
- Good output linearity across wide illumination range
- Small footprint: 1.7mm x 0.8mm
- Low profile: 0.6mm
- Phototransistor with filter technology

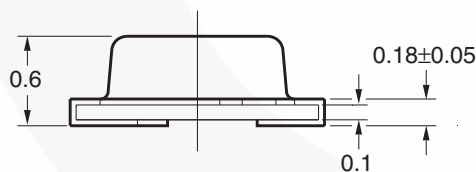
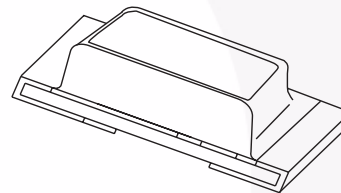
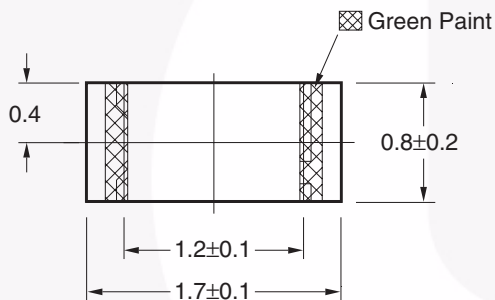
## Applications

- Cell Phones, Notebook PCs, PDAs, Digital Still Cameras

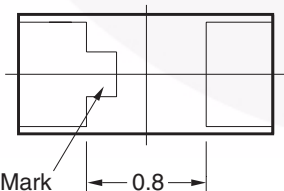
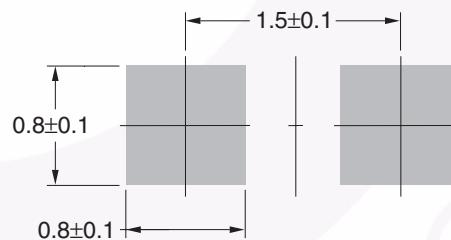
## Description

The KDT00030 is a small, low profile photo detector. It incorporates a phototransistor detector chip which makes it an ideal choice for low cost ambient light measurement applications like mobile appliances backlighting.

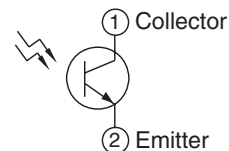
## Package Dimension



## Recommended Solder Screen Pattern (for reference only)



## Schematic



**Note:**  
All dimensions are in mm, tolerances are  $\pm 0.1$ mm unless otherwise specified.

### Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

Symbol	Parameter	Min.	Max.	Unit
$V_{CE}$	Collector-Emitter Voltage		60	V
$T_{OPR}$	Operating Temperature	-40	+85	°C
$T_{STG}$	Storage Temperature	-40	+100	°C

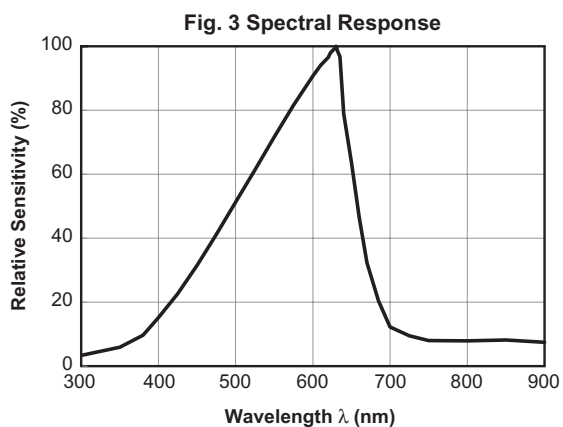
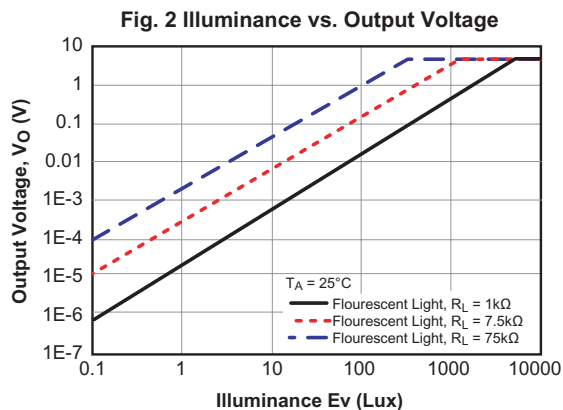
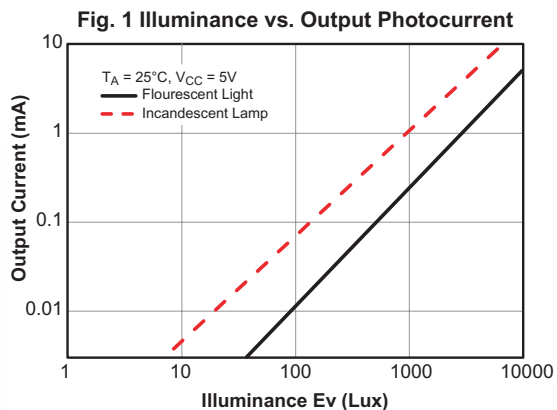
### Electrical/Optical Characteristics ( $T_A = 25^\circ\text{C}$ and $V_{CE} = 5.0\text{V}$ , unless specified otherwise)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
$I_L(1)$	Light Current (1)	$E_V = 100 \text{ Lx}^{(1)}$	7	10		$\mu\text{A}$
$I_L(2)$	Light Current (2)	$E_V = 1,000 \text{ Lx}^{(1)}$	200	230		$\mu\text{A}$
$I_L(3)$	Light Current (3)	$E_V = 1,000 \text{ Lx}^{(2)}$	950	1,100		$\mu\text{A}$
$I_L(3) / I_L(2)$	Light Current Ratio			4.8		
$I_{LEAK}$	Dark Current	$V_{CE} = 10\text{V}, E_V = 0$			0.1	$\mu\text{A}$
$V_O$	Saturation Output Voltage	$V_{CC} = 5\text{V}, E_V = 1000 \text{ Lx}, R_L = 75\text{k}\Omega$	4.5	4.6		V
$\lambda_p$	Peak Sensitivity, Wavelength			630		nm

#### Notes:

- White fluorescent light (color temperature = 6,500K)
- Illuminance by CIE standard illuminant-A / 2856K incandescent lamp.

## Typical Performance Characteristics




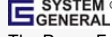



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