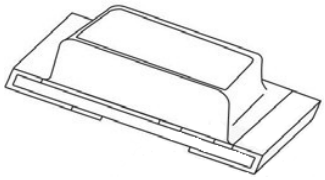
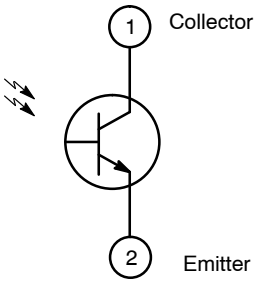
Phototransistor Photo Detector

KDT00030, KDT00030A



CHIPLED ALS
CASE 100CP



Description

The KDT00030/KDT00030A are small, low−profile photo detectors. They incorporate a phototransistor detector chip, which makes them an ideal choice for low−cost ambient light measurement applications, like mobile appliances backlighting.

Features

- Spectral Response Close to Human Eye
- Good Output Linearity Across Wide Illumination Range
- Small Footprint: 1.7 mm x 0.8 mm
- Low Profile: 0.6 mm
- Phototransistor with Filter Technology
- These Devices are Pb−Free and Halogen Free

Applications

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

ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Min.	Max.	Unit
V_{CE}	Collector − Emitter Voltage	−	6	V
T_{OPR}	Operating Temperature	−40	+85	°C
T_{STG}	Storage Temperature	−40	+100	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ELECTRICAL CHARACTERISTICS

Values are at T_A = 25°C and V_{CE} = 5.0 V, unless specified otherwise.

Symbol	Parameter	Conditions		Min.	Typ.	Max.	Unit
I_{L1}	Light Current 1	E_V = 100 lux (Note1)		7	10	−	μA
I_{L2}	Light Current 2	E_V = 1000 lux (Note1)		200	230	−	μA
I_{L3}	Light Current 3	E_V = 1000 lux (Note 2)		950	1100	−	μA
I_{L3} / I_{L2}	Light Current Ratio			−	4.8	−	−
I_{LEAK}	Dark Current	V_{CE} = 10 V, E_V = 0	KDT00030	−	−	100	nA
			KDT00030A	−	−	40	
V_O	Saturation Output Voltage	V_{CC} = 5 V, E_V = 1000 lux, R_L = 75 kΩ		4.5	4.6	−	V
Δ_P	Peak Sensitivity, Wavelength			−	630	−	nm

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. White fluorescent light (color temperature = 6.500 K).
2. Illuminance by CIE standard illuminant−A/2856K incandescent lamp.

TYPICAL PERFORMANCE CHARACTERISTICS

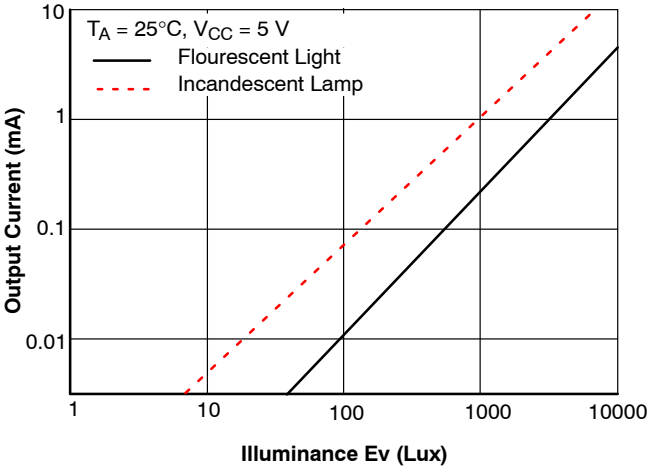


Figure 1. Illuminance vs. Output Photo Current

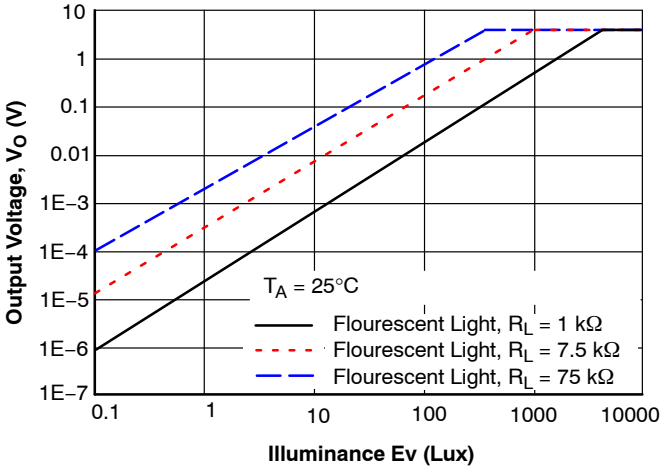


Figure 2. Illuminance vs. Output Voltage

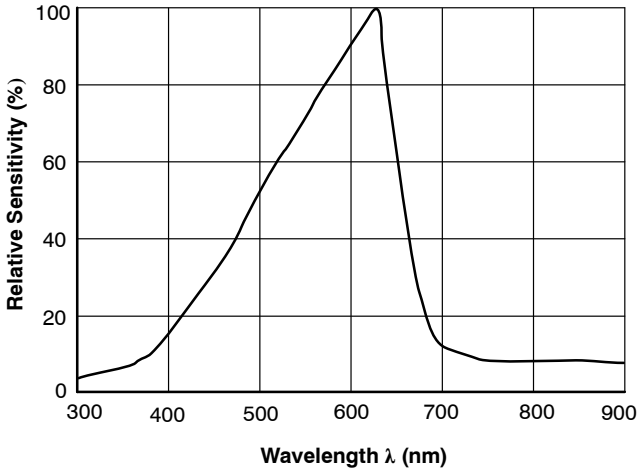


Figure 3. Spectral Response

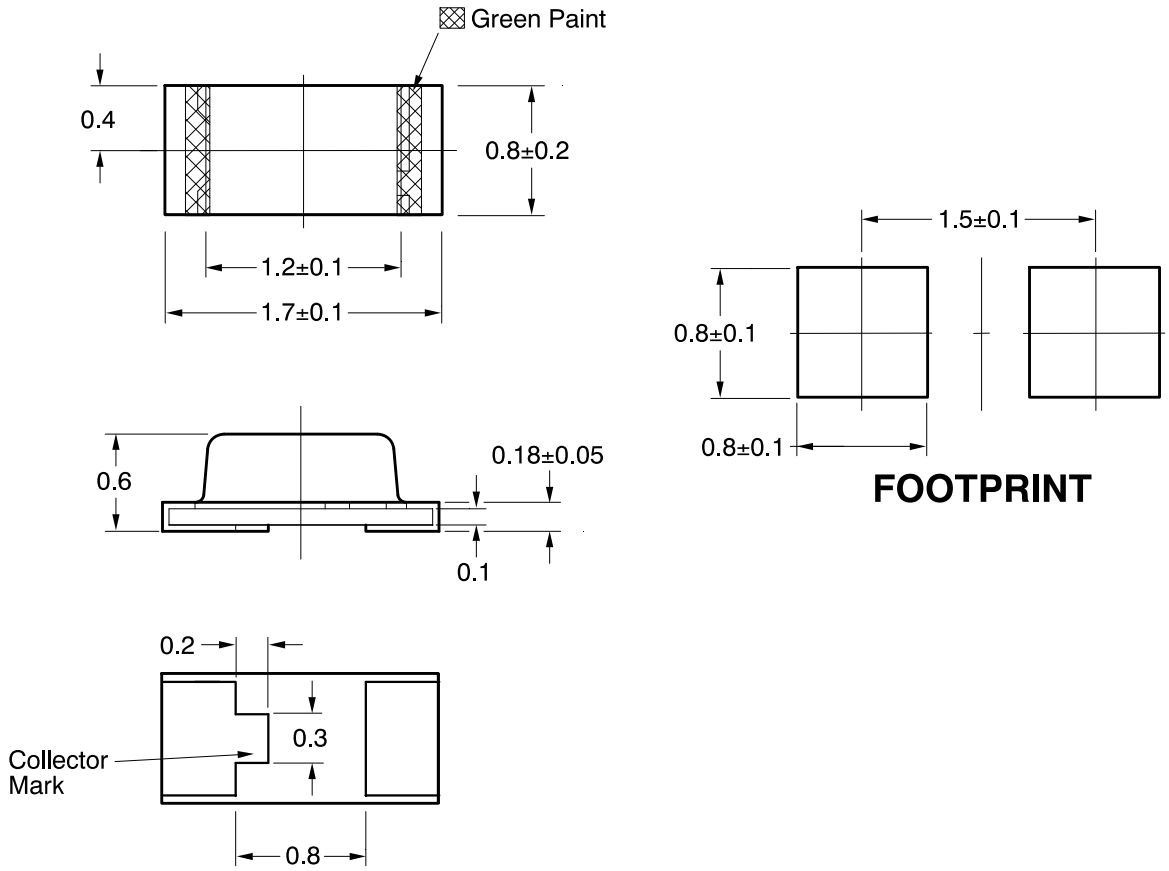
ORDERING INFORMATION

Part Number	Operating Temperature	Package	Shipping†
KDT00030TR	−40 to +85°C	CHIPLED ALS (Pb−Free / Halogen Free)	3000 / Tape and Reel
KDT00030ATR			3000 / Tape and Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

CHIPLED ALS
CASE 100CP
ISSUE O

DATE 30 NOV 2016



Note:
All dimensions are in mm, tolerances are ±0.1mm unless otherwise specified.

DOCUMENT NUMBER:	**98AON13423G**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	**CHIPLED ALS**	**PAGE 1 OF 1**

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales