Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Reflective Object Sensor

OPB700Z, OPB700ALZ
OPB701Z, OPB701ALZ

Features:

- Low profile to facilitate stacking
- Low cost plastic housing
- Choice of phototransistor or photodarlington output
- #26 AWG lead wire in 4” (101 mm), or 18” (457 mm) lengths

Description:

OPB700 and **OPB700ALZ** sensors consist of an infrared emitting diode and a NPN silicon phototransistor, mounted side-by-side on converging optical axes in a black plastic housing.

OPB701 and **OPB701ALZ** sensors consist of an infrared emitting diode and a NPN silicon photodarlington, mounted side-by-side on converging optical axes in a black plastic housing.

The interconnect wires for these devices are are UL approved #26 AWG, with Teflon insulation, stripped and tinned. The **OPB700 and OPB701** have 4” (101 mm) wire length while the **OPB700ALZ and OPB701ALZ** have 18” (457 mm) wire length.

Custom electrical, wire, cabling and connectors are available. Contact your local representative or OPTEK for more information.

Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End of travel sensor
- Door sensor

Ordering Information				
Part Number	**LED Peak Wavelength**	**Sensor**	**Reflection Distance Inch (mm)**	**Lead Length / Spacing**
OPB700Z	890 nm	Transistor	0.200" (5.08mm)	4" / 26 AWG Wire
OPB700ALZ				18" / 26 AWG Wire
OPB701Z		Darlington		4" / 26 AWG Wire
OPB701ALZ				18" / 26 AWG Wire

RoHS

General Note
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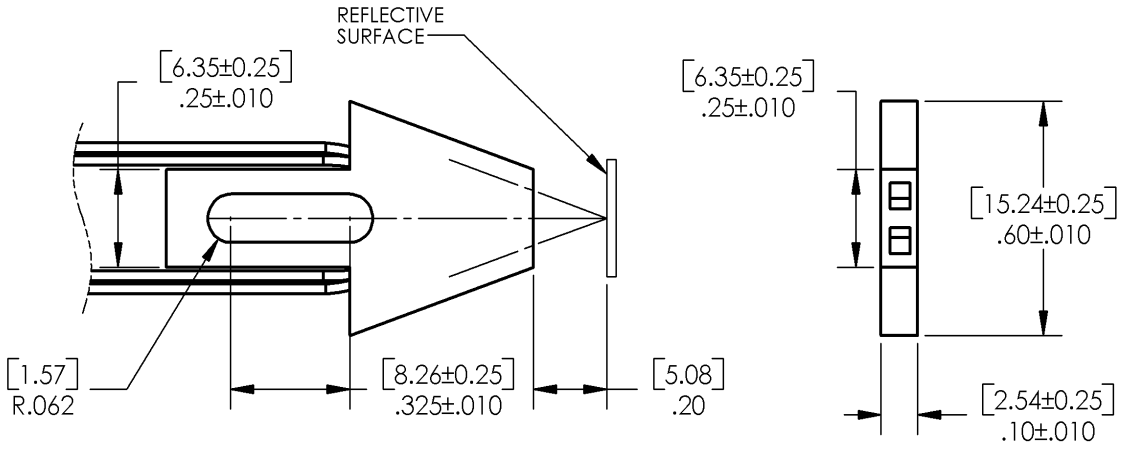
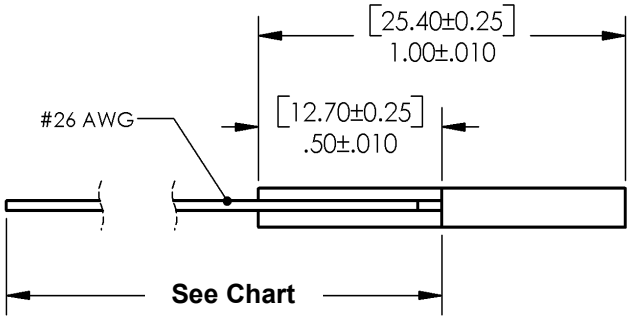
Reflective Object Sensor

OPB700Z, OPB700ALZ

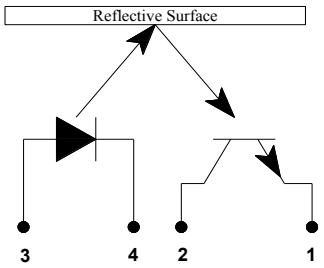
OPB701Z, OPB701ALZ

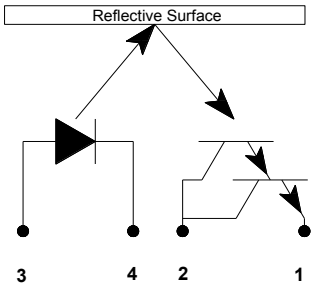
OPB700Z, OPB701Z





DIMENSIONS ARE IN: **[MILLIMETERS]**
INCHES





Part Number	Wire Length
OPB700Z	4” Min
OPB700ALZ	18” Min
OPB701Z	4” Min
OPB701ALZ	18” Min

OPB701			
Color/Pin #	**LED**	**Color/Pin #**	**LED**
Red-3	Anode	White-2	Collector
Black-4	Cathode	Green-1	Emitter

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Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)	
Storage Temperature Range	-40° C to + 125° C
Operating Temperature Range	-40° C to + 100° C
Lead Soldering Temperature	260° C
Input Diode	
Continuous Forward Current	100 mA
Reverse Voltage	2 V
Power Dissipation(1)	80 mW
Output Phototransistor	
Collector-Emitter Voltage OPB700Z, OPB700ALZ OPB70Z1, OPB701ALZ	 24 V 15 V
Emitter-Collector Voltage	5 V
Power Dissipation(1)	50 mW

Notes:

(1) Derate linearly 1.07 mW/°C above 25 ° C.

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
V_F	Forward Voltage	-	-	1.7	V	I_F = 50 mA
I_R	Reverse Current	-	-	100	µA	V_R = 2 V
Output Phototransistor						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage OPB700Z, OPB700ALZ OPB701Z, OPB701ALZ	 25 15	 - -	 - -	 V V	 I_C = 100 µA I_C = 100 µA
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	-	V	I_E = 100 µA
I_{CEO}	Collector Dark Current OPB700Z, OPB700ALZ OPB701Z, OPB701ALZ	 - -	 - -	 100 250	 nA nA	 V_{CE} = 10 V, I_F = 0, E_E = ≤0.1 µW/cm^2 V_{CE} = 10 V, I_F = 0, E_E = ≤0.1 µW/cm^2

Notes:

(1) Measured using Eastman Kodak neutral white test card with 90% diffuse reflectance as a reflecting surface. Reference: Eastman Kodak, Catalog # E 152 7795.

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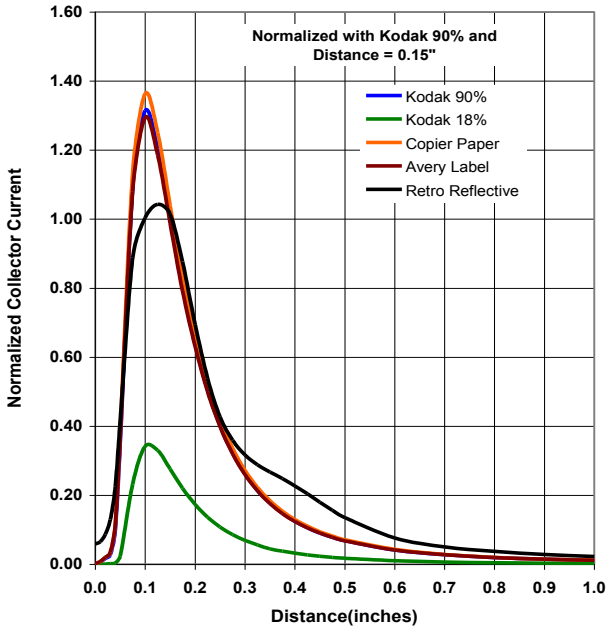
Electrical Characteristics (T_A = 25° C unless otherwise noted)						
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Coupled Parameters OPB700Z, OPB700ALZ (Phototransistor)						
$I_{C(ON)}$	Collector current	0.10	-	2.50	mA	V_{CE} = 5.0V(1), I_F = 40mA
$V_{CE(SAT)}$	Saturation Voltage	-	-	0.40	V	I_C = 10µA, I_F = 40mA
I_{CX}	Leakage Current	-	-	2.00	µA	V_{CE} = 5.0V, I_F = 40mA, NO Reflective Surface
Coupled Parameters OPB701Z, OPB701ALZ (Photodarlington)						
$I_{C(ON)}$	Collector current	2.50	-	43.00	mA	V_{CE} = 5.0V(1)
$V_{CE(SAT)}$	Saturation Voltage	-	-	1.10	V	I_C = 10µA, I_F = 40mA
I_{CX}	Leakage Current	-	-	20.0	µA	V_{CE} = 5.0V, I_F = 40mA, NO Reflective Surface

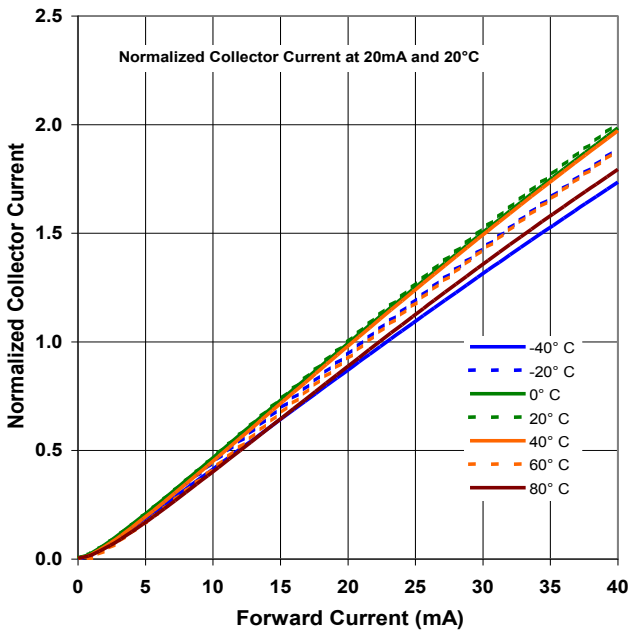
Notes:

(1) Measured using Eastman Kodak neutral white test card with 90% diffuse reflectance as a reflecting surface. Reference: Eastman Kodak, Catalog # E 152 7795.

OPB700 - Normalized Collector Current vs Distance



OPB700 - Normalized Collector Current vs Forward Current vs Temperature



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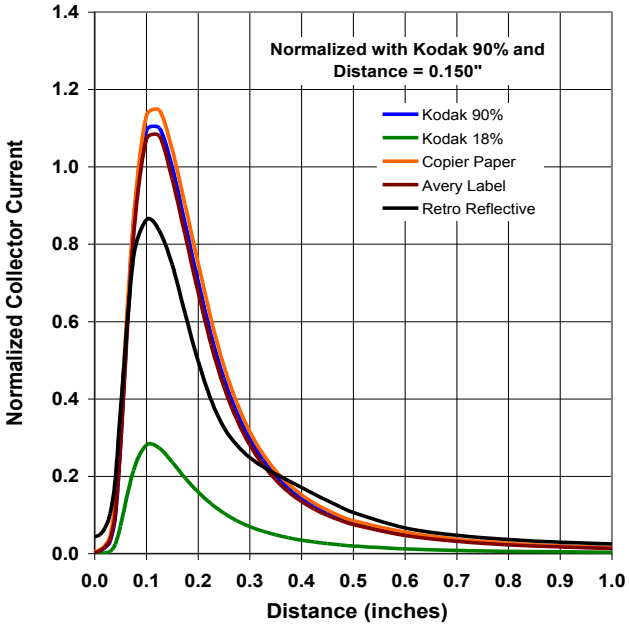
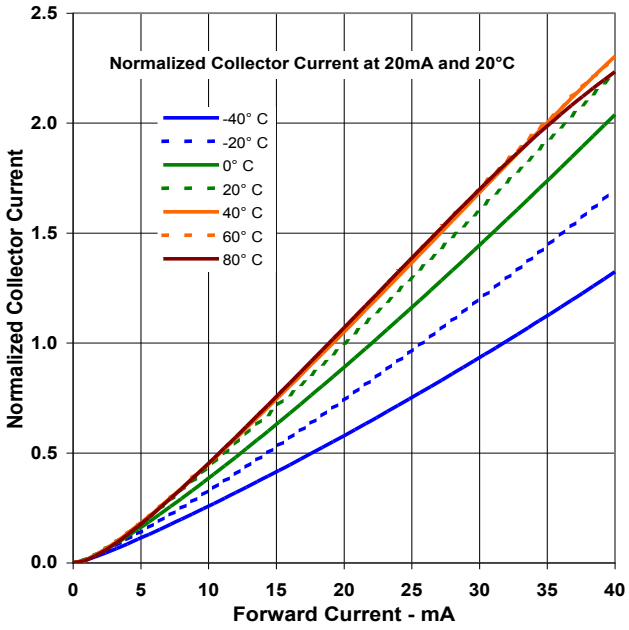
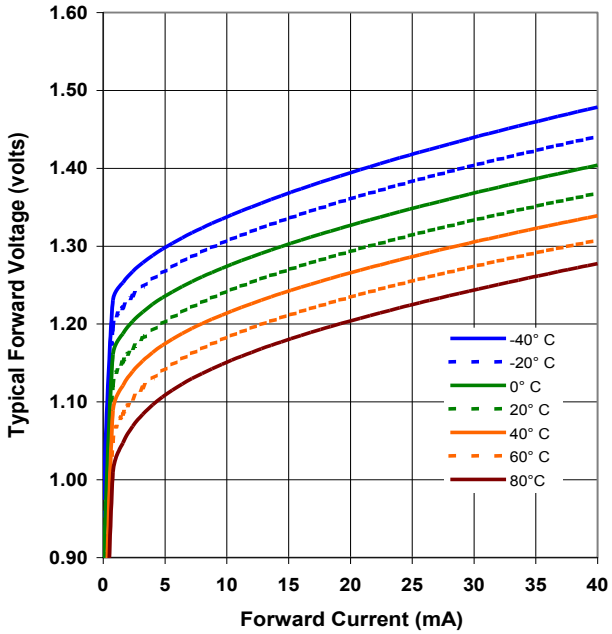
OPB701 - Normalized Collector Current vs Distance



OPB701 - Normalized Collector Current vs Forward Current vs Temperature



LED—Forward Voltage vs Forward Current vs Temperature



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Issue	Change Description	Approval	Date
A	Initial Release—New Format		03/08/06
A.1	Fixed pin-out. Fixed Kodak # E 152 7795, Updated mechanical drawing, added coupled specifications	Mark Miller	02/15/07
B	Transferred to the new TT Electronics template	L. Timpa	10/12/2016

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