

Reflective Object Sensor

OPB608A, OPB608B, OPB608C, OPB608R, OPB608V



Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
--------	-----------	-----	-----	-----	-------	-----------------

Infrared-LED (880 nm) (See OP240 for additional information)

V_F	Forward Voltage	-	-	1.7	V	$I_F = 20\text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2\text{ V}$

Infrared-LED (650 nm)

V_F	Forward Voltage	-	1.9	2.5	V	$I_F = 20\text{ mA}$
V_R	Reverse Voltage	5	-	-	V	$I_R = 10\text{ }\mu\text{A}$

Infrared VCSEL (850 nm) (See OPV330 for additional information)

V_F	Forward Voltage	-	-	2.2	V	$I_F = 7\text{ mA}$
I_R	Reverse Current	-	-	30	nA	$V_R = 5\text{ V}$
I_{TH}	Threshold Current	2	-	5.5	mA	-
Θ	Beam Divergence	-	12	-	Deg.	$I_F = 12\text{ mA}$

Phototransistor (See OP705 for additional information)

$V_{(BR)CEO}$	Collector Emitter Breakdown Voltage	30	-	-	V	$I_C = 100\text{ }\mu\text{A}$, $E_E = 0\text{ }\mu\text{W}/\text{cm}^2$
$V_{(BR)ECO}$	Emitter Collector Breakdown Voltage	0.4	-	-	V	$I_E = 100\text{ }\mu\text{A}$, $E_E = 0\text{ }\mu\text{W}/\text{cm}^2$
$V_{CE(SAT)}$	Saturation Voltage	-	-	.40	V	$I_C = 100\text{ }\mu\text{A}$, $I_F = 20\text{ mA}$, $d = 0.053''$
I_{CEO}	Collector Emitter Dark Current	-	-	100	nA	$V_{CE} = 5\text{ V}$, $E_E = \leq .10\text{ }\mu\text{W}/\text{cm}^2$, $I_F = 0$

Combined

$I_{C(ON)}$	On-State Collector Current OPB608A OPB608B OPB608C OPB608R	2 1 0.5 1	- - - -	- 4 - 6	mA	$V_{CE} = 5\text{ V}$, $I_F = 20\text{ mA}$, $d = 0.053\text{ inch (1.35 mm)}^{(1)(2)}$
	OPB608V	5	-	-		$V_{CE} = 5\text{ V}$, $I_F = 10\text{ mA}$, $d = 0.053\text{ inch (1.35 mm)}^{(1)(2)}$
$I_{C(OFF)}$	Off-State Collector Current LED VCSEL	- -	- -	100 100	nA	No reflective surface, $V_{CE} = 5\text{ V}$ $I_F = 20\text{ mA}$ $I_F = 10\text{ mA}$

Notes:

- (1) Distance from the front of the lens to reflective surface.
- (2) Measured using Eastman Kodak gray card. The white side of the card is used as a 90% diffuse reflective surface. Reference Eastman Kodak catalog #E152 7795
- (3) All parameters are tested using pulse techniques.

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

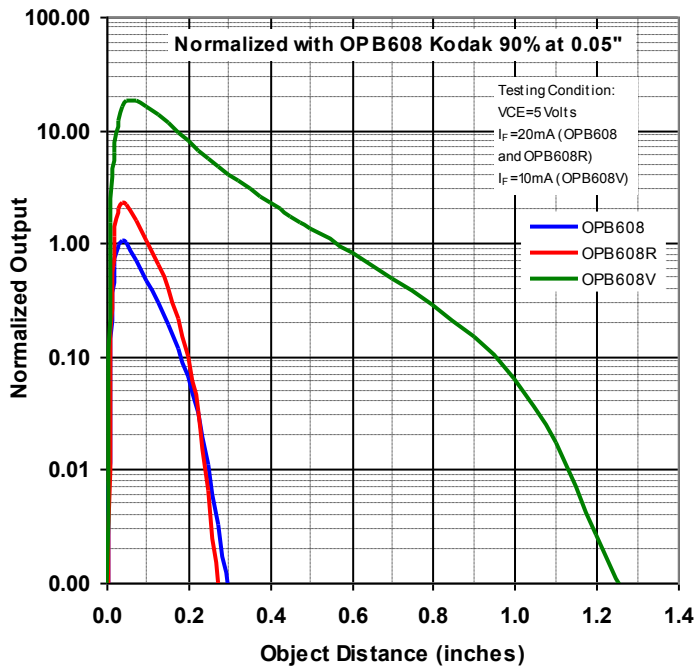
TT Electronics | Optek Technology, Inc.
1645 Wallace Drive, Ste. 130, Carrollton, TX USA 75006 | Ph: +1 972 323 2200
www.ttelectronics.com | sensors@ttelectronics.com

Reflective Object Sensor

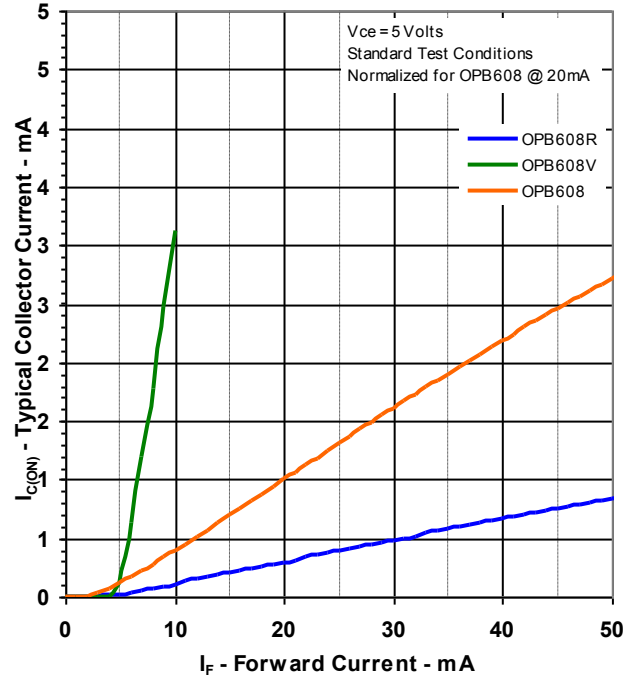
OPB608A, OPB608B, OPB608C, OPB608R, OPB608V



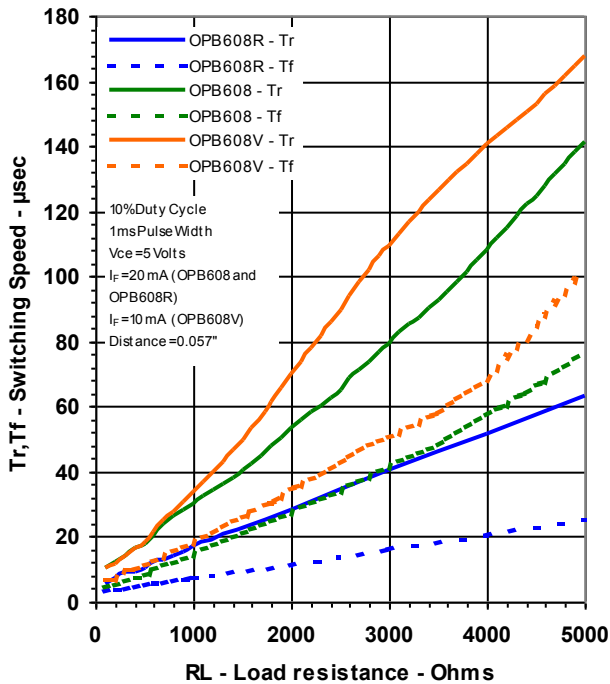
Kodak 90% Card Normalized Output vs Object Distance



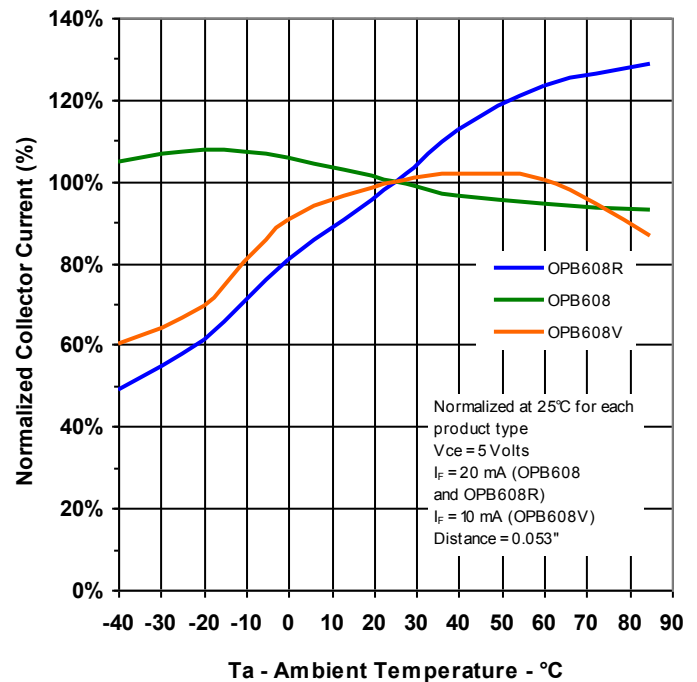
Collector Current vs Diode Forward Current



Rise and Fall vs Load Resistance



Collector Current vs Ambient Temp.



General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.