

Reflective Object Sensor

OPB608A, OPB608B, OPB608C, OPB608R, OPB608V



Electrical Characteristics (T_A = 25°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 mA |
| I _R | Reverse Current | - | - | 100 | μA | V _R = 2 V |

Infrared-LED (650 nm)

| | | | | | | |
|----------------|-----------------|---|-----|-----|---|------------------------|
| V _F | Forward Voltage | - | 1.9 | 2.5 | V | I _F = 20 mA |
| V _R | Reverse Voltage | 5 | - | - | V | I _R = 10 μA |

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

| | | | | | | |
|-----------------|-------------------|---|----|-----|------|------------------------|
| V _F | Forward Voltage | - | - | 2.2 | V | I _F = 7 mA |
| I _R | Reverse Current | - | - | 30 | nA | V _R = 5 V |
| I _{TH} | Threshold Current | 2 | - | 5.5 | mA | - |
| Θ | Beam Divergence | - | 12 | - | Deg. | I _F = 12 mA |

Phototransistor (See OP705 for additional information)

| | | | | | | |
|----------------------|-------------------------------------|-----|---|-----|----|---|
| V _{(BR)CEO} | Collector Emitter Breakdown Voltage | 30 | - | - | V | I _C = 100 μA, E _E = 0 μW/cm ² |
| V _{(BR)ECO} | Emitter Collector Breakdown Voltage | 0.4 | - | - | V | I _E = 100 μA, E _E = 0 μW/cm ² |
| V _{CE(SAT)} | Saturation Voltage | - | - | .40 | V | I _C = 100 μA, I _F = 20 mA, d = 0.053" |
| I _{CEO} | Collector Emitter Dark Current | - | - | 100 | nA | V _{CE} = 5 V, E _E = ≤ .10 μW/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 V, I _F = 20 mA, d = 0.053 inch (1.35 mm) ⁽¹⁾⁽²⁾ |
| | OPB608V | 5 | - | - | | |
| I _{C(OFF)} | Off-State Collector Current LED VCSEL | - - | - - | 100 100 | nA | No reflective surface, V _{CE} = 5 V I _F = 20 mA I _F = 10 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.

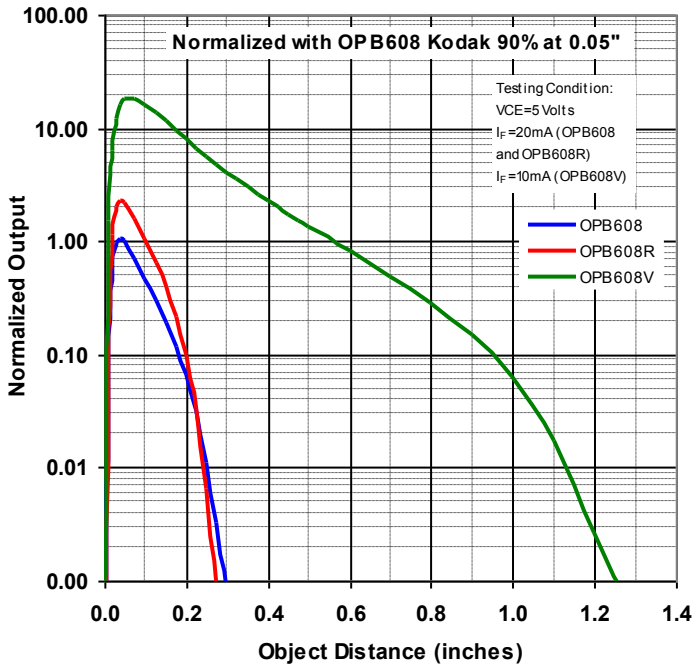
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Reflective Object Sensor

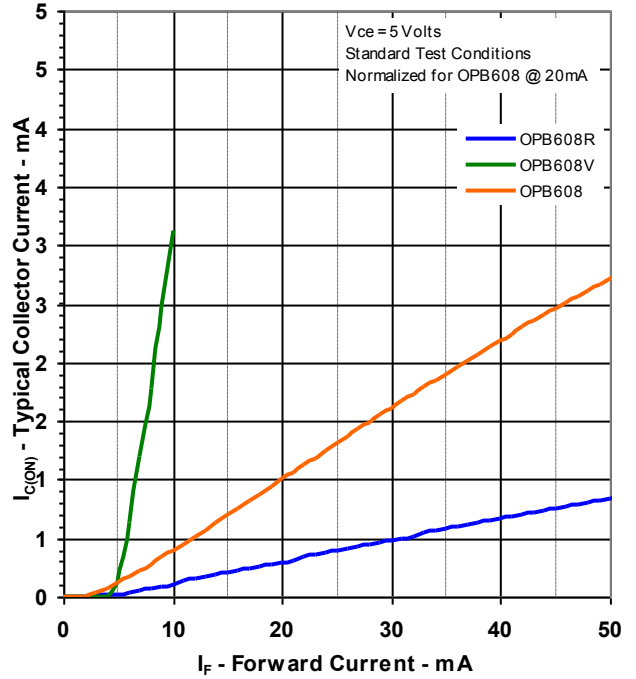
OPB608A, OPB608B, OPB608C, OPB608R, OPB608V



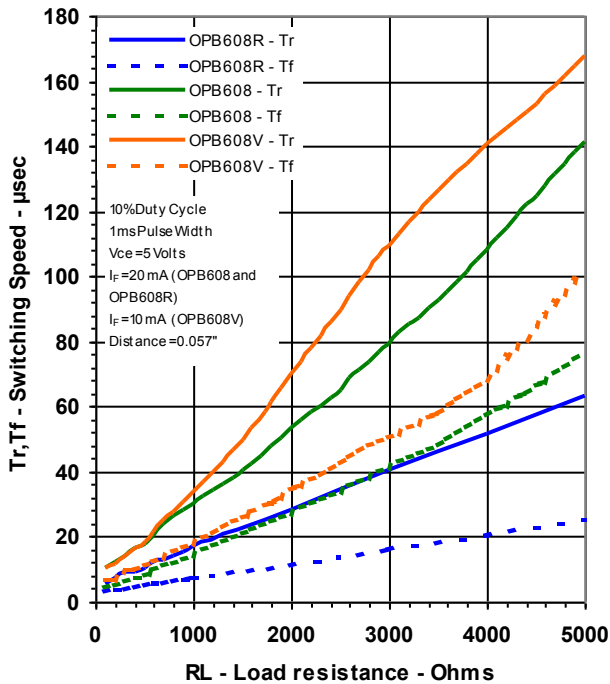
Kodak 90% Card Normalized Output vs Object Distance



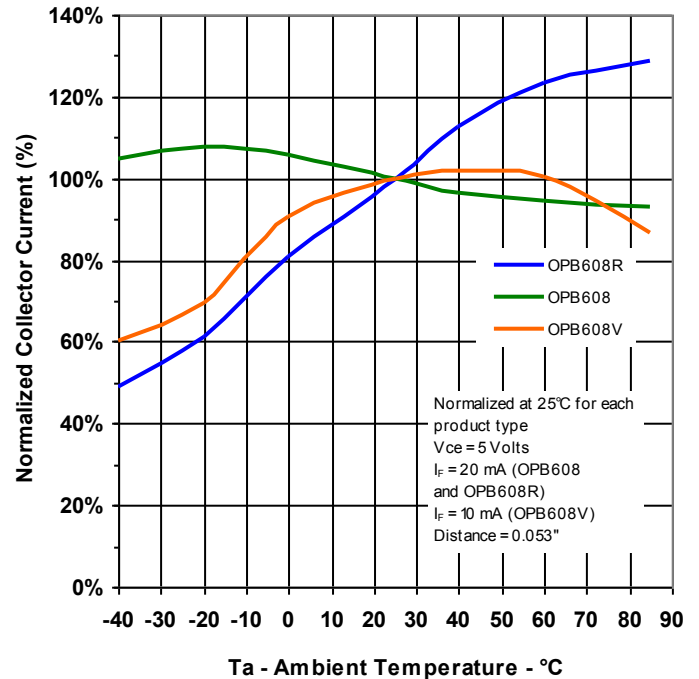
Collector Current vs Diode Forward Current



Rise and Fall vs Load Resistance



Collector Current vs Ambient Temp.



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