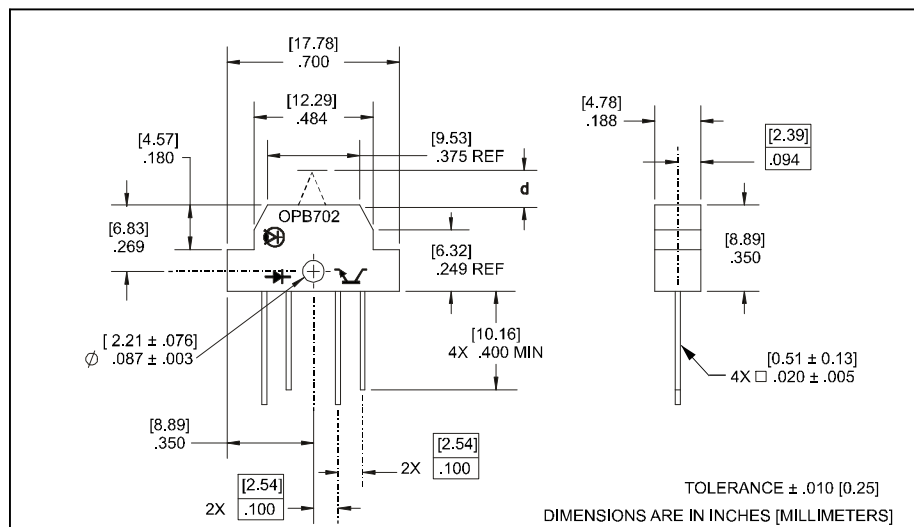
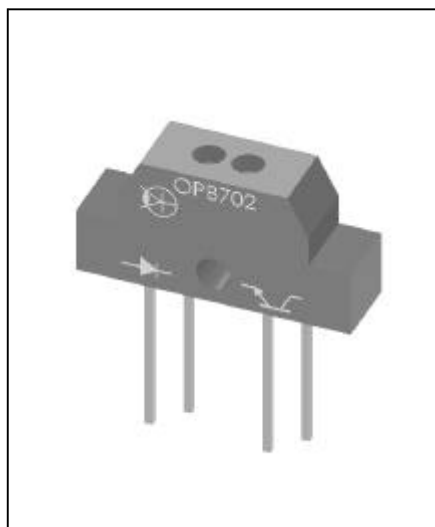


Reflective Object Sensors

Type OPB702, OPB702D, OPB702R



Type OPB702

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.8	V	$I_F = 20 \text{ mA}$
I_R	Reverse Current		100	μA	$V_R = 2.0 \text{ V}$
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	$I_C = 100 \mu\text{A}$, $I_F = 0$, $E_e = 0$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0		V	$I_E = 100 \mu\text{A}$, $I_F = 0$, $E_e = 0$
I_{CEO}	Collector-Emitter Leakage Current		100	nA	$V_{CE} = 10 \text{ V}$, $I_F = 0$, $E_e = 0$
Coupled					
$I_{C(ON)}$	On-State Collector Current	50		μA	$V_{CE} = 5.0 \text{ V}$, $I_F = 40 \text{ mA}$, $d = 0.150'' (3.81 \text{ mm})^{(3)(4)}$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage		0.40	V	$I_C = 250 \mu\text{A}$, $I_F = 40 \text{ mA}$, $d = 0.150'' (3.81 \text{ mm})^{(3)(4)}$

Type OPB702D

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.8	V	$I_F = 20 \text{ mA}$
I_R	Reverse Current		100	μA	$V_R = 2.0 \text{ V}$
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	15.0		V	$I_C = 1 \text{ mA}$, $I_F = 0$, $E_e = 0$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0		V	$I_E = 100 \mu\text{A}$, $I_F = 0$, $E_e = 0$
I_{CEO}	Collector-Emitter Leakage Current		250	nA	$V_{CE} = 10.0 \text{ V}$, $I_F = 0$, $E_e = 0$
Coupled					
$I_{C(ON)}$	On-State Collector Current	2.0		mA	$V_{CE} = 5.0 \text{ V}$, $I_F = 40 \text{ mA}$, $d = 0.150'' (3.81 \text{ mm})^{(3)(4)}$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage		1.10	V	$I_C = 400 \mu\text{A}$, $I_F = 40 \text{ mA}$, $d = 0.150'' (3.81 \text{ mm})^{(3)(4)}$

Type OPB702R

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
Input Diode					
V_F	Forward Voltage		1.8	V	$I_F = 20 \text{ mA}$
I_R	Reverse Current		100	μA	$V_R = 2.0 \text{ V}$
Output Phototransistor					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30		V	$I_C = 100 \mu\text{A}$, $I_F = 0$, $E_e = 0$
I_{ECO}	Emitter-Reverse Current		100	μA	$V_{EC} = 0.4 \text{ V}$, $I_F = 0$, $E_e = 0$
I_{CEO}	Collector-Emitter Leakage Current		100	nA	$V_{CE} = 10.0 \text{ V}$, $I_F = 0$, $E_e = 0$
Coupled					
$I_{C(ON)}$	On-State Collector Current	50		μA	$V_{CE} = 5.0 \text{ V}$, $I_F = 40 \text{ mA}$, $d = 0.150'' (3.81 \text{ mm})^{(3)(4)}$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage		0.40	V	$I_C = 250 \mu\text{A}$, $I_F = 40 \text{ mA}$, $d = 0.150'' (3.81 \text{ mm})^{(3)(4)}$