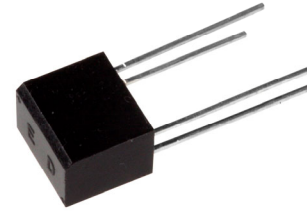


Optically Coupled Isolator

OPI7002, OPI7002RCE, OPI7010, OPI7010RCE
 OPI7320RCE, OPI7340RCE



Features:

- ± 6 kV dc electrical isolation
- Inexpensive plastic housing
- Choice of phototransistor or photodarlington output
- UL registered File No. E58730

Description:

Each **OPI7002** and **OPI7010** consists of an infrared emitting diode coupled to a NPN silicon phototransistor. The LED and sensor are encased in a black, low-cost plastic housing. Pin spacing is compatible with standard dual-in-line packages.

Each **OPI7320RCE** and **OPI7340RCE** consists of an infrared emitting diode coupled to a NPN silicon photodarlington. The LED and sensor are encased in a high dielectric plastic housing. Pin spacing is compatible with standard dual-in-line packages.

The RCE versions reverse the Phototransistor Emitter and Collector pin-out.

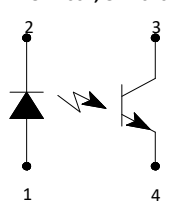
Custom electrical, wire and cabling and connectors are available. Contact your local representative or OPTEK for more information.

Applications:

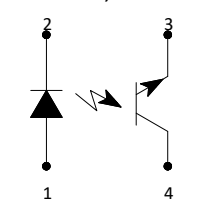
- Requiring high voltage isolation between input and output
- Electrical isolation in dirty environments
- Industrial equipment
- Medical equipment
- Office equipment

Ordering Information							
Part Number	LED Peak Wavelength	Sensor	Isolation Voltage (,000)	CTR Min	I _F (mA) Typ / Max	V _{CE} (Volts) Max	Lead Length / Spacing
OPI7002	890 nm	Transistor	6	20	10 / 50	30	0.30" / 0.30"
OPI7010				100			
OPI7320RCE	890 nm or 935 nm	Darlington	6	200	5 / 50	15	0.30" / 0.30"
OPI7340RCE				400			

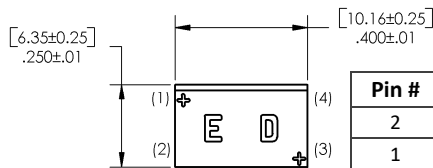
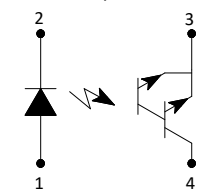
OPI7002, OPI7010



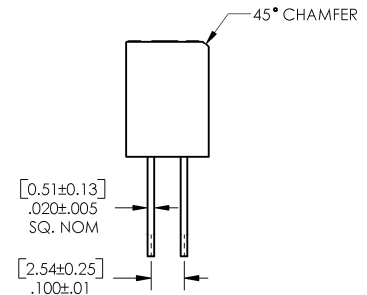
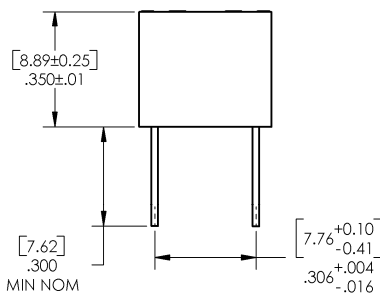
OPI7002RCE, OPI7010RCE



OPI7320RCE, OPI7340RCE



Pin #	LED	Pin #	Transistor/ RCE
2	Cathode	3	Collector / Emitter
1	Anode	4	Emitter / Collector



RoHS

DIMENSIONS ARE IN: [MILLIMETERS] INCHES

General Note

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Optically Coupled Isolator

OPI7002, OPI7002RCE, OPI7010, OPI7010RCE
OPI7320RCE, OPI7340RCE



Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Operating Temperature Range	-40° C to +85° C
Storage Temperature Range	-40° C to +85° C
Input-to-Output Isolation Voltage ⁽¹⁾⁽⁴⁾	±6 kVDC
Lead Soldering Temperature [1/16 inch (1.6 mm) from the case for 5 seconds with soldering iron ⁽²⁾	260° C
Input Diode	
Forward DC Current	50 mA
Peak Forward current (1 μs pulse width, 300 pps)	3 A
Reverse Voltage	2 V
Power Dissipation ⁽³⁾	100 mW
Output Phototransistor	
Collector-Emitter Voltage OPI7002, OPI7010, OPI7002RCE, OPI7010RCE OPI7320RCE, OPI7340RCE	30 V 15 V
Emitter-Collector Voltage	5.0 V
Power Dissipation ⁽³⁾	100 mW

Notes:

- (1) Measured with input leads and output leads shorted.
- (2) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (3) Derate linearly 1.66 mW/° C above 25° C.
- (4) UL recognition is for 6kV dc for one minute

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Optically Coupled Isolator

OPI7002, OPI7002RCE, OPI7010, OPI7010RCE
OPI7320RCE, OPI7340RCE



Electrical Specifications

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode (See OP140 or OP240 for additional information—for reference only)						
V_F	Forward Voltage	-	1.2	1.70	V	$I_F = 10\text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2.0\text{ V}$
Output Phototransistor (OPI7002, OPI7010) (See OP550 for additional information—for reference only)						
Output Photodarlington (OPI7320, OPI7340) (See OP560 for additional information—for reference only)						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage OPI7002/RCE, OPI7010/RCE OPI7320RCE, OPI7340RCE	30 15	- -	- -	V	$I_C = 100\ \mu\text{A}, I_F = 0$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	-	V	$I_E = 100\ \mu\text{A}, I_F = 0$
I_{CEO}	Collector-Emitter Dark Current	-	-	100	nA	$V_{CE} = 10\text{ V}, I_F = 0$
Coupled						
I_C/I_F	DC Current Transfer Ratio OPI7002, OPI7002RCE OPI7010, OPI7010RCE OPI7320RCE OPI7340RCE	20 100 200 400	- - - -	- - - -	%	$I_F = 10\text{ mA}, V_{CE} = 5\text{ V}$ $I_F = 10\text{ mA}, V_{CE} = 5\text{ V}$ $I_F = 5\text{ mA}, V_{CE} = 5\text{ V}$ $I_F = 5\text{ mA}, V_{CE} = 5\text{ V}$
$V_{(SAT)}$	Collector-Emitter Saturation Voltage OPI7002/RCE, OPI7010/RCE OPI7320RCE, OPI7340RCE	- -	- -	0.4 1.0	V	$I_F = 10\text{ mA}, I_C = 0.50\text{ mA}$ $I_F = 5\text{ mA}, I_C = 2\text{ mA}$
V_{ISO}	Isolation Voltage ⁽¹⁾	6	-	-	kVDC	See note 1
$T_{(ON)}$	Turn-On Time OPI7002/RCE, OPI7010/RCE OPI7320RCE, OPI7340RCE	- -	4 150	- -	μs	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}, R_L = 100\ \Omega$
$T_{(OFF)}$	Turn-Off Time OPI7002/RCE, OPI7010/RCE OPI7320RCE, OPI7340RCE	- -	3 125	- -		
C_{IO}	Capacitance Input-to-Output ⁽¹⁾	-	0.2	-	pF	$V_{IO} = 0, F = 1\text{ MHz}$

Notes:

- (1) Measured with input leads and output leads shorted.

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