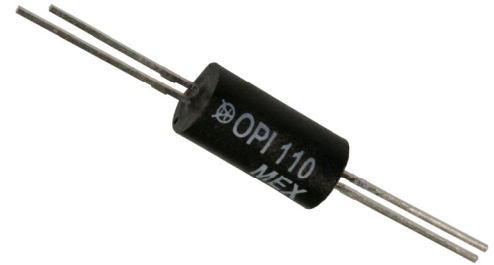


Optically Coupled Isolator

OPI110, OPI1264 Series



Features:

- 15 kV electrical isolation
- Choice of phototransistor
- Low-cost plastic housing
- UL recognized File No. E58730

Description:

Each Optoisolator in this data sheet contains an infrared Light Emitting Diode (LED) and a NPN silicon Photosensor. The **OPI110** and **OPI1264** devices have 890 nm Light Emitting Diode (LED) and NPN phototransistor sensor. The devices are sealed in a precast opaque housing with an optically transmissive path between the LED and the photosensor.

The Optoisolators in this data sheet are UL recognised under E58730.

This series is designed for transmission of information between one power supply voltage and another where the potentials during surge conditions are not greater than the guaranteed isolation voltage.

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

Applications:

- 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 / Max | I _F (mA) Typ / Max | V _{CE} (Volts) Max | Lead Length / Spacing |
| OPI110 | 890 nm | Transistor | 15 | 12.5 / NA | 10 / 40 | 30 | 0.50" / 0.55" |
| OPI110A | | | | 25 / NA | | | |
| OPI110B | | | | 50 / 125 | | | |
| OPI110C | | | | 100 / NA | | | |
| OPI1264 | | Transistor | | 12.5 / NA | 10 / 40 | | |
| OPI1264A | | | | 25 / NA | | | |
| OPI1264B | | | | 50 / 125 | | | |
| OPI1264C | | | | 100 / NA | | | |

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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Optically Coupled Isolator

OPI110, OPI1264 Series



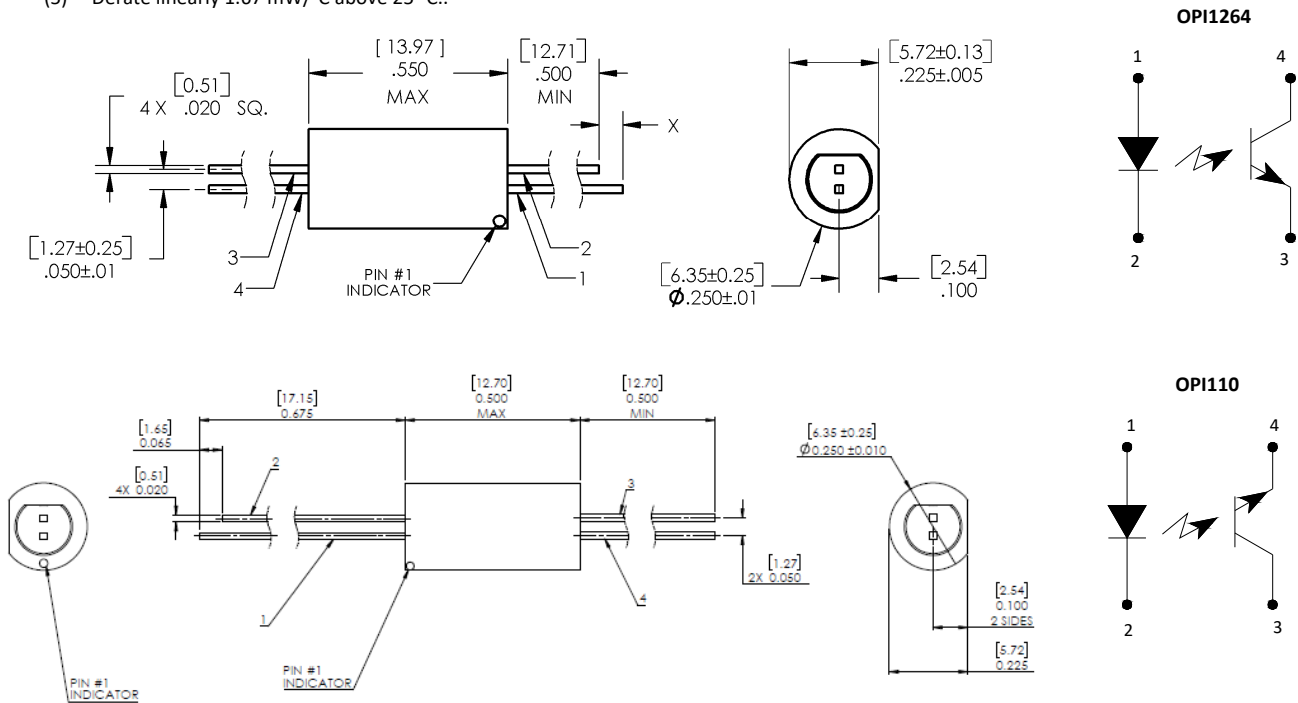
Electrical Specifications

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

| | |
|--|-------------------|
| Storage Temperature | -40° C to +100° C |
| Operating Temperature | -40° C to +85° C |
| Input-to-Output Isolation Voltage ⁽¹⁾⁽²⁾ | ± 15 kVDC |
| Lead Soldering Temperature (1/16" (1.6 mm) from case for 5 seconds with soldering iron) ⁽³⁾ | 260° C |
| Input Diode | |
| Forward DC Current | 40 mA |
| Reverse DC Voltage | 2 V |
| Power Dissipation ⁽⁴⁾ | 50 mW |
| Output Photosensor | |
| Collector-Emitter Voltage OPI110, OPI1264 | 30 |
| Emitter-Collector Voltage | 5 |
| Power Dissipation ⁽⁵⁾ | 100 mW |

Notes:

- (1) Measured with input and output leads shorted. Typical input/output capacitance is 0.06 pF.
- (2) UL recognition is for 15 kV dc for one minute.
- (3) RMA flux is recommended. The duration can be extended to 10 seconds maximum when flow soldering.
- (4) Derate linearly 0.83 mW/°C above 25° C.
- (5) Derate linearly 1.67 mW/°C above 25° C..



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Optically Coupled Isolator

OPI110, OPI1264 Series



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

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---|---|-------------------------------|------------------|--------------------|---------------|--|
| Input Diode (See OP265 for additional information - for reference only) | | | | | | |
| V_F | Forward Voltage | - | - | 1.6 | V | $I_F = 20\text{ mA}$ |
| I_R | Reverse Current | - | - | 100 | μA | $V_R = 2\text{ V}$ |
| Output Photosensor (See OP505 for additional information - for reference only) | | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage OPI110, OPI1264 | 30 | - | - | V | $I_C = 100\ \mu\text{A}$ |
| $V_{(BR)ECO}$ | Emitter-Collector Breakdown Voltage OPI110 OPI1264 | 5 - | - - | - - | V | $I_E = 100\ \mu\text{A}, I_F = 0$ $I_E = 100\ \mu\text{A}$ |
| I_{CEO} | Collector-Emitter Dark Current OPI110, OPI1264 | - | - | 100 | nA | $V_{CE} = 15\text{ V}, E_E = 0$ |
| Coupled | | | | | | |
| $I_{C(ON)}$ | Coupled "ON" Current OPI110, OPI1264 | 1.25 | - | 44 | mA | $I_F = 10\text{mA}$ $V_{CE} = 5\text{V}$ |
| I_C/I_F | DC Current Transfer Ratio OPI110, OPI1264 OPI110A, OPI1264A OPI110B, OPI1264B OPI110C, OPI1264C | 12.5 25.0 50.0 100.0 | - - - - | - - 125 - | % | $I_F = 10\text{ mA}, V_{CE} = 5\text{ V}$ $I_F = 10\text{ mA}, V_{CE} = 5\text{ V}$ $I_F = 10\text{ mA}, V_{CE} = 5\text{ V}$ $I_F = 10\text{ mA}, V_{CE} = 5\text{ V}$ |
| $V_{CE(SAT)}$ | Collector Saturation Voltage OPI110, OPI1264 | - | - | 0.4 | V | $I_F = 10\text{ mA}, I_C = 1.6\text{ mA}$ |
| I_{CEO} | Collector-Emitter Dark Current OPI110, OPI1264 | - | - | 200 | nA | $V_{CE} = 20\text{ V}, I_F = 0$ |
| V_{ISO} | Isolation Voltage | 15 | - | - | kVDC | See Note 1. |

Notes:

(1) Measured with input and output leads shorted. Typical input/output capacitance is 0.06 pF.

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