

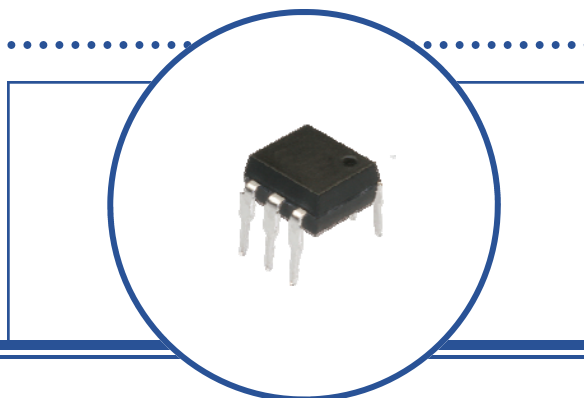
# OPIA4N35, OPIA5010, OPIA4N33 OPIA2110, OPIA2210, OPI6010 DIP Package

## Features:

- 3,750 or 5,000 Vrms electrical isolation
- Choice of a Single and Dual LED
- Phototransistor or Photodarlington Sensor
- Low-cost plastic Dual-In-Line (DIP) package

## Agency Approvals:

- UL Certification No: E58730
- VDE No: 40026624,40026625



## Description:

The OPIA series optocouplers are designed for applications that use an analog output (Phototransistor or Photodarlington) in a dual-in-line package. A wide selection of configurations are available. With typical isolation voltage of 3,750 or 5,000 Volts(RMS), these product meet typical power system isolation requirements.

Theory of operation: The LED transmitter is used to illuminate the Photosensor providing electrical isolation between two power systems while maintaining the ability to transmit information from one power system to the other. In many applications, analog signal levels may be required to be transmitted between two power systems while maintaining isolation between the power systems up to 5,000 Volts(RMS). A variety of LED and photosensor configurations are available depending on the system requirements.

The ratio Current Transfer Ratio (CTR) is determined using the output current and input current for analog photosensors. CTR ratios can range from as low as 5 to over 9,000 depending on the device.

$$CTR = \frac{\text{Photosensor - Current}}{\text{LED - Current}} = \frac{20mA}{10mA} * 100 = 200$$

All DIP product is shipped in a shipping tube with "TU" identified on the end of the part number.  
Example: OPI4N35DTUE is a 6-Pin DIP shipped in a tube (TU).

## Applications:

- High voltage isolation
- PCBoard power system isolation
- Industrial equipment power isolation
- Medical equipment power isolation
- Office equipment



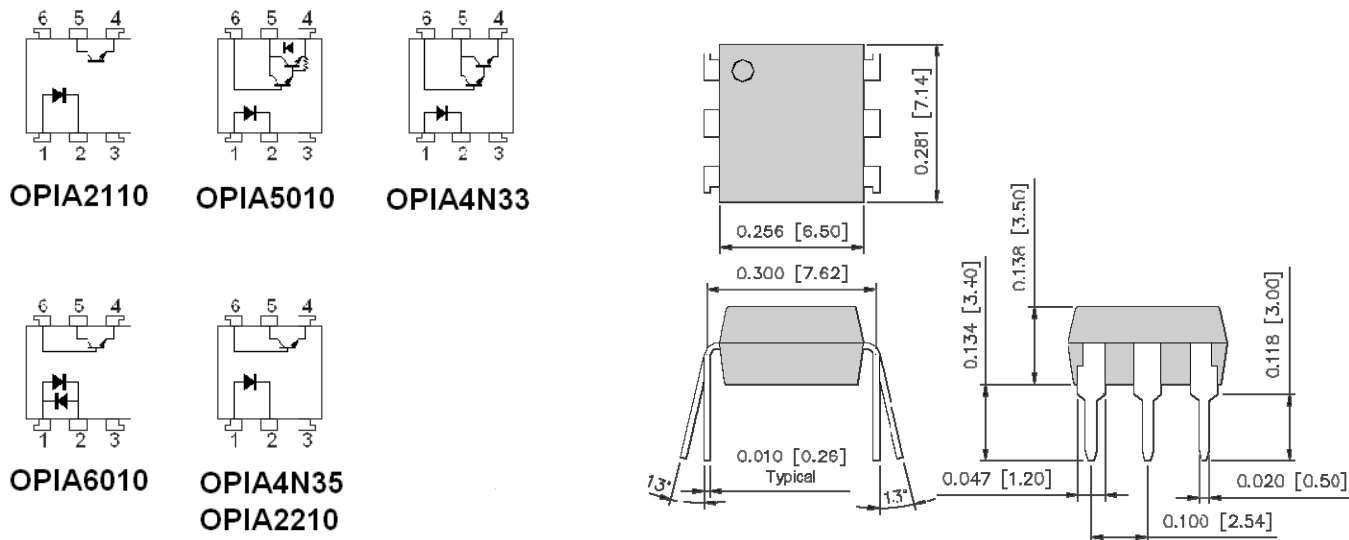
RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

# OPIA4N35, OPIA5010, OPIA4N33 OPIA2110, OPIA2210, OPI6010 DIP Package



## Package Outline Dimensions and Schematics: Top-View



| Part Number | Pin # |     |   |   |   |   |
|-------------|-------|-----|---|---|---|---|
|             | 1     | 2   | 3 | 4 | 5 | 6 |
| OPIA4N35    | A     | K   |   | E | C | B |
| OPIA5010    | A     | K   |   | E | C | B |
| OPIA3N33    | A     | K   |   | E | C | B |
| OPIA2210    | A     | K   |   | E | C | B |
| OPIA6010    | A-K   | K-A |   | E | C | B |
| OPIA2110    | A     | K   |   | E | C |   |

| Symbol | Definition | Symbol | Definition | Symbol | Definition | Symbol | Definition |
|--------|------------|--------|------------|--------|------------|--------|------------|
| A      | Anode      | B      | Base       | C      | Collector  | E      | Emitter    |

## Analog Output Devices Ordering Information

| Part Number | Isolation Voltage Max. (Vrms) | CTR Min/Typ/Max | Typ. Tr / Tf (μs)<br>R <sub>L</sub> = 100 ohms | Package   | Configuration   |
|-------------|-------------------------------|-----------------|--|-----------|-----------------|
| OPIA4N35D   | 5,000                         | 60 / - / 600    | 5 / 4  | 6 Pin DIP | A K—B C E       |
| OPIA5010D   | 5,000                         | 600 / - / 9,000 | 60 / 50  | 6 Pin DIP | A K—B C E (Dar) |
| OPIA3N33D   | 5,000                         | 500 / 4,000 / - | 5 / 60   | 6 Pin DIP | A K—B C E (Dar) |
| OPIA2210D   | 5,000                         | 50 / - / 600    | 2 / 3  | 6 Pin DIP | A K—B C E       |
| OPIA6010D   | 5,000                         | 50 / - / 600    | 2 / 3  | 6 Pin DIP | A K, K A—B C E  |
| OPIA2110D   | 5,000                         | 40 / - / 400    | 4 / 3  | 6 Pin DIP | A K—C E         |

Configuration: Definition of Terms  
LED Identification—Sensor Identification

|                           |        |           |               |
|---------------------------|--------|-----------|---------------|
| Configuration Information | LED    | A = Anode | K = Cathode   |
|                           | Sensor | B = Base  | C = Collector |

|           |   |  |
|-----------|---|--|
| Packaging | Part Number Suffix: <b>TU</b> = Ship in Tubes | <b>Example:</b><br>OPI4N35DT <u>UE</u> |
|-----------|---|--|

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

**OPIA4N35, OPIA5010, OPIA4N33  
OPIA2110, OPIA2210, OPI6010  
DIP Package**



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

|   |  |
|---|--|
| Storage Temperature   | -55° C to +125° C                      |
| Operating Temperature<br>OPIA4N35, OPIA5010, OPIA3N33<br>OPIA2210, OPIA6010, OPIA2110   | -30° C to +100° C<br>-55° C to +125° C |
| Isolation voltage (1 minute)  | 5,000 Vrms                             |
| Total Package Power Dissipation   | 200 mW                                 |
| Lead Soldering Temperature (1/16" (1.6 mm) from case for 5 seconds with soldering iron) | 260° C                                 |

**Input Diode**

|   |       |
|---|-------|
| Continuous Forward Current                                  | 50 mA |
| Peak Forward current (1 $\mu\text{s}$ pulse width, 300 pps) | 1 A   |
| Reverse Voltage   | 6 V   |
| Power Dissipation   | 70 mW |

**Output Phototransistor**

|   |                                |
|---|--------------------------------|
| Collector-Emitter Voltage<br>OPIA4N35, OPIA6010, OPIA2110<br>OPIA2210<br>OPIA5010<br>OPIA3N33 | 60 V<br>350 V<br>300 V<br>30 V |
| Emitter-Collector Voltage<br>OPIA4N35, OPIA2110<br>OPIA2210, OPIA6010<br>OPIA5010, OPIA3N33   | 6 V<br>7 V<br>-                |
| Collector Current<br>OPIA4N35, OPIA2210, OPIA6010, OPIA2110<br>OPIA5010, OPIA3N33             | 50 mA<br>150 mA                |
| Power Dissipation<br>OPIA4N35, OPIA2110<br>OPIA5010, OPIA3N33, OPIA2210, OPIA6010             | 150 mW<br>200 mW               |

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

# OPIA4N35, OPIA5010, OPIA4N33 OPIA2110, OPIA2210, OPI6010 DIP Package



## Electrical Characteristics (OPIA6 \_\_ Series)

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

### Input Diode

|          |   |          |            |            |               |  |
|----------|---|----------|------------|------------|---------------|--|
| $V_F$    | Forward Voltage<br>OPIA4N35, OPIA5010, OPIA3N33,<br>OPI604, OPIA2110<br>OPIA2210      | -<br>1.0 | 1.2<br>1.2 | 1.4<br>1.3 | V             | $I_F = 20 \text{ mA}$<br>$I_F = 10 \text{ mA}$                                     |
| $V_{FM}$ | Peek Forward Voltage<br>OPIA4N35, OPIA5010, OPIA3N33,<br>OPI604<br>OPIA2210, OPIA2110 | -<br>-   | -<br>-     | 3.5<br>3.0 | V             | $I_{FM} = 500 \text{ mA}$  |
| $I_R$    | Reverse Current<br>OPIA4N35, OPIA5010, OPIA3N33,<br>OPI604, OPIA2110<br>OPIA2210      | -<br>-   | -<br>-     | 10<br>10   | $\mu\text{A}$ | $V_R = 4 \text{ V}$<br>$V_R = 5 \text{ V}$   |
| $C_t$    | Terminal Capacitance<br>OPIA4N35, OPIA5010, OPIA3N33,<br>OPI604, OPIA2110<br>OPIA2210 | -<br>-   | 30<br>30   | -<br>-     | pf            | $V = 0.0 \text{ V}, f = 1 \text{ K Hz}$<br>$V = 0.0 \text{ V}, f = 1 \text{ M Hz}$ |

### Output Phototransistor—OPIA4N35D, OPIA2210D, OPIA6010D, OPIA2210D

|           |  |             |             |               |               |   |
|-----------|--|-------------|-------------|---------------|---------------|---|
| $I_{CEO}$ | Collector dark Current<br>OPIA4N35, OPIA6010, OPIA2110<br>OPIA2210               | -<br>-      | -<br>10     | 100<br>200    | nA            | $I_F = 0 \text{ mA}, V_{CE} = 20 \text{ V}$<br>$I_F = 0 \text{ mA}, V_{CE} = 300 \text{ V}$   |
| $V_{CEO}$ | Collector-emitter Saturation Voltage<br>OPIA4N35, OPIA6010, OPIA2110<br>OPIA2210 | -<br>-      | 0.1<br>-    | 0.3<br>0.4    | V             | $I_F = 20 \text{ mA}, I_C = 1 \text{ mA}$<br>$I_F = 8 \text{ mA}, I_C = 2.4 \text{ mA}$   |
| $f_c$     | Cutt-Off frequency   | -           | 80          | -             | K Hz          | $V_{CC} = 5 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$  |
| $t_R$     | Rise Time<br>OPIA4N35, OPIA6010<br>OPIA2210<br>OPIA2110                          | -<br>-<br>- | 5<br>2<br>4 | 20<br>-<br>20 | $\mu\text{s}$ | $V_{CC} = 5 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$<br>$V_{CC} = 10 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$<br>$V_{CC} = 2 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$ |
| $t_F$     | Fall Time<br>OPIA4N35, OPIA6010<br>OPIA2210<br>OPIA2110                          | -<br>-<br>- | 4<br>3<br>3 | 20<br>-<br>20 | $\mu\text{s}$ | $V_{CC} = 5 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$<br>$V_{CC} = 10 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$<br>$V_{CC} = 2 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$ |

Continued on Next Page

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

**OPIA4N35, OPIA5010, OPIA4N33  
OPIA2110, OPIA2210, OPI6010  
DIP Package**



**Electrical Characteristics (OPIA6 \_\_ Series) - Continued from Previous Page**

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

**Output PhotoDarlington—OPIA5010D, OPIA3N33D**

|           |  |        |          |            |         |   |
|-----------|--|--------|----------|------------|---------|---|
| $I_{CEO}$ | Collector dark Current<br>OPIA5010<br>OPIA3N33               | -<br>- | -<br>-   | 1.0<br>0.1 | $\mu A$ | $I_F = 0 \text{ mA}, V_{CE} = 200 \text{ V}$<br>$I_F = 0 \text{ mA}, V_{CE} = 10 \text{ V}$                                     |
| $V_{CEO}$ | Collector-emitter Saturation Voltage<br>OPIA5010<br>OPIA3N33 | -<br>- | -<br>-   | 1.5<br>1.0 | V       | $I_F = 20 \text{ mA}, I_C = 5 \text{ mA}$<br>$I_F = 8 \text{ mA}, I_C = 2 \text{ mA}$   |
| $f_c$     | Cutt-Off frequency<br>OPIA5010, OPIA3N33                     | -      | 7.0      | -          | K Hz    | $V_{CC} = 5 \text{ V}, I_C = 2 \text{ mA}, R_L = 100 \Omega$  |
| $t_r$     | Rise Time<br>OPIA5010<br>OPIA3N33                            | -<br>- | 60<br>5  | 300<br>40  | $\mu s$ | $V_{CC} = 2 \text{ V}, I_C = 20 \text{ mA}, R_L = 100 \Omega$<br>$V_{CC} = 10 \text{ V}, I_C = 50 \text{ mA}, R_L = 100 \Omega$ |
| $t_f$     | Fall Time<br>OPIA5010<br>OPIA3N33                            | -<br>- | 50<br>60 | 250<br>100 | $\mu s$ | $V_{CC} = 2 \text{ V}, I_C = 20 \text{ mA}, R_L = 100 \Omega$<br>$V_{CC} = 10 \text{ V}, I_C = 50 \text{ mA}, R_L = 100 \Omega$ |

**Coupled Characteristics—OPIA6XXX Series**

|           |  |                                    |                                |  |     |   |
|-----------|--|------------------------------------|--------------------------------|--|-----|---|
| CTR       | Current Transfer Ratio<br>OPIA4N35<br>OPIA5010<br>OPIA3N33<br>OPIA2210<br>OPIA6010<br>OPIA2110 | 60<br>600<br>500<br>50<br>60<br>40 | -<br>-<br>4,000<br>-<br>-<br>- | 600<br>9,000<br>-<br>600<br>600<br>400 | %   | $I_F = 2 \text{ mA}, V_{CE} = 5.0 \text{ V}$<br>$I_F = 2 \text{ mA}, V_{CE} = 5.0 \text{ V}$<br>$I_F = 10 \text{ mA}, V_{CE} = 10.0 \text{ V}$<br>$I_F = 5 \text{ mA}, V_{CE} = 5.0 \text{ V}$<br>$I_F = 1 \text{ mA}, V_{CE} = 5.0 \text{ V}$<br>$I_F = 10 \text{ mA}, V_{CE} = 5.0 \text{ V}$ |
| $C_f$     | Floating Capacitance   | -                                  | 0.6                            | 1.0                                    | pF  | $V = 0.0 \text{ V}, f = 1 \text{ M Hz}$   |
| $R_{ISO}$ | Isolation resistance   | $5 \times 10^{10}$                 | $10^{11}$                      | -                                      | ohm | DC500V  |

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPI4N35

Fig.1 Current Transfer Ratio vs. Forward Current

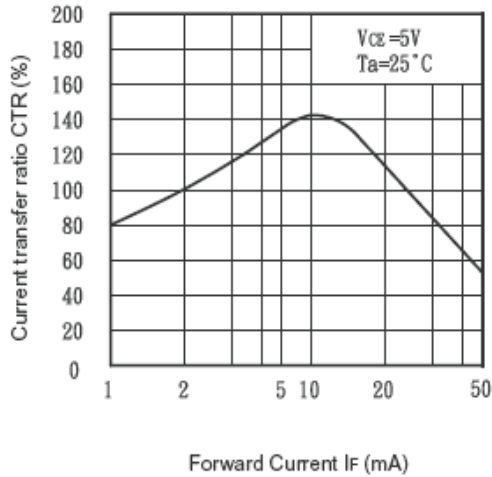


Fig.2 Collector Power Dissipation vs. Ambient Temperature

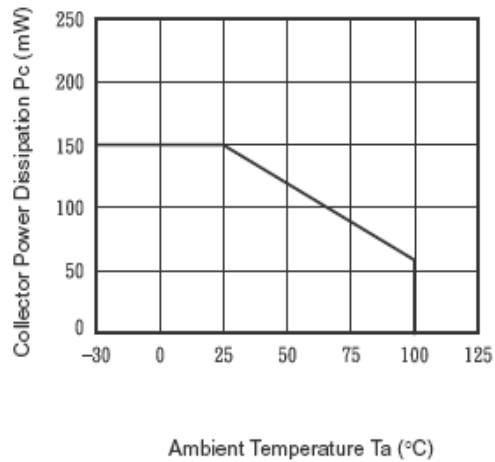


Fig.3 Collector Dark Current vs. Ambient Temperature

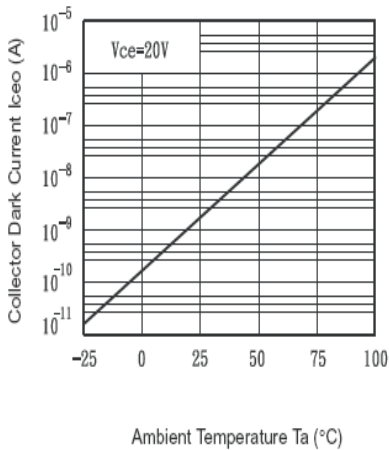


Fig.4 Forward Current vs. Ambient Temperature

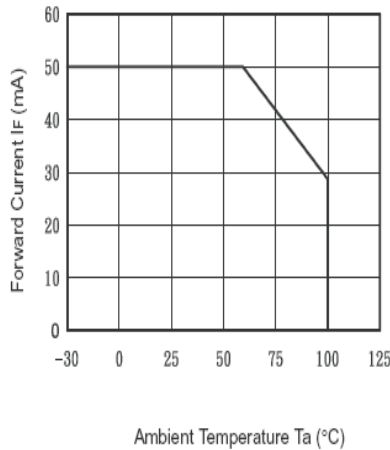
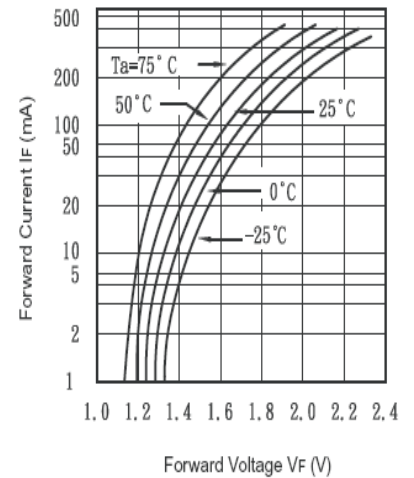


Fig.5 Forward Current vs. Forward Voltage



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

# OPIA4N35, OPIA5010, OPIA4N33 OPIA2110, OPIA2210, OPI6010 DIP Package



## OPI4N35

Fig.6 Collector Current vs. Collector-emitter Voltage

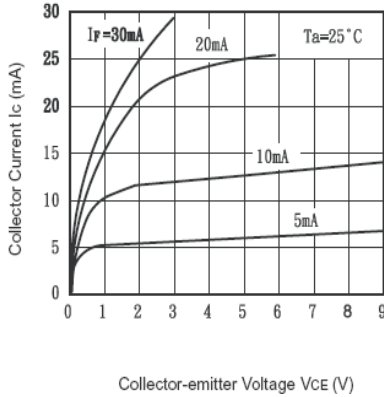


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

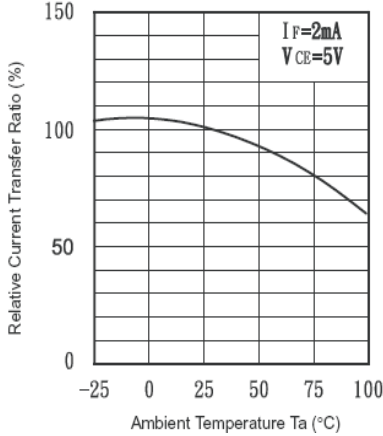


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

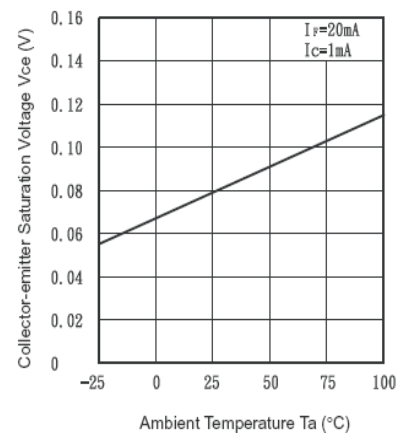


Fig.9 Collector-emitter Saturation Voltage vs. Forward Current

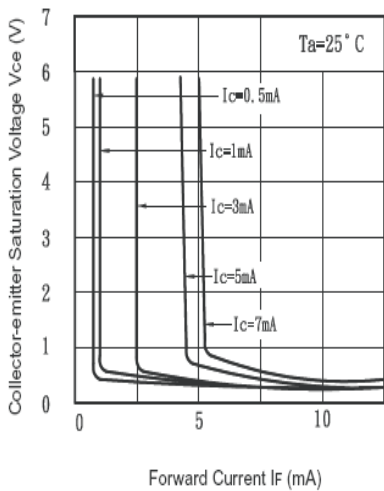


Fig.10 Response Time vs. Load Resistance

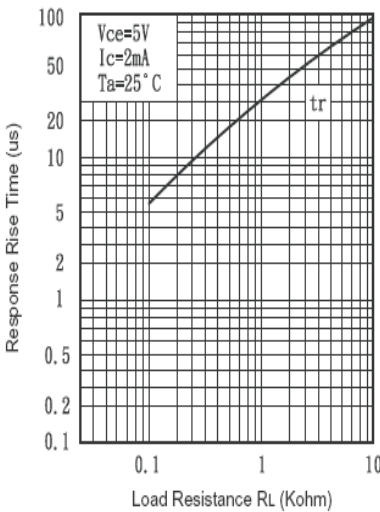
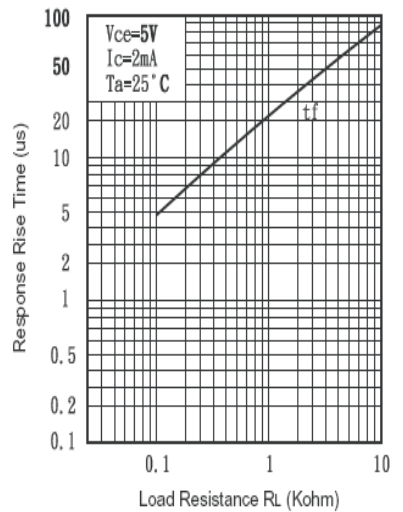


Fig.11 Response Time vs. Load Resistance



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA5010

Fig. 4 Forward Current vs. Ambient Temperature

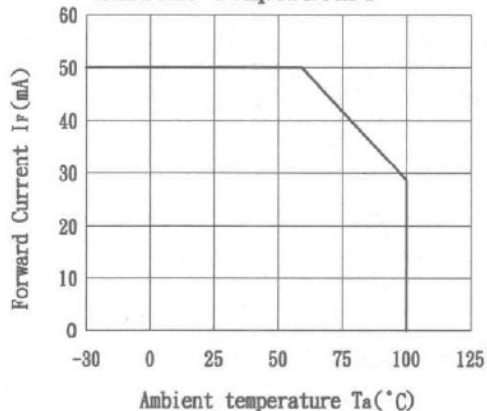


Fig. 5 Forward Current vs. Forward Voltage

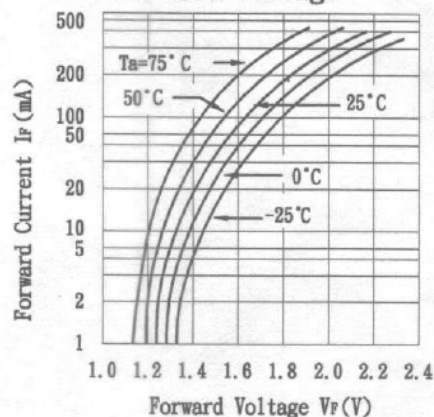


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

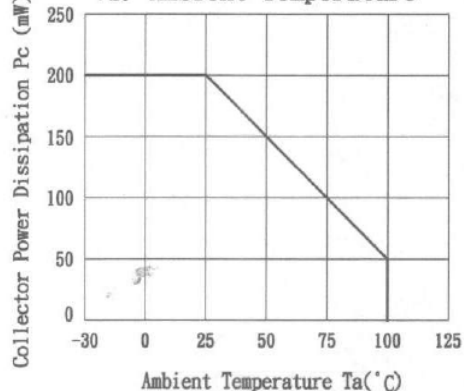


Fig. 3 Collector Dark Current vs. Ambient Temperature

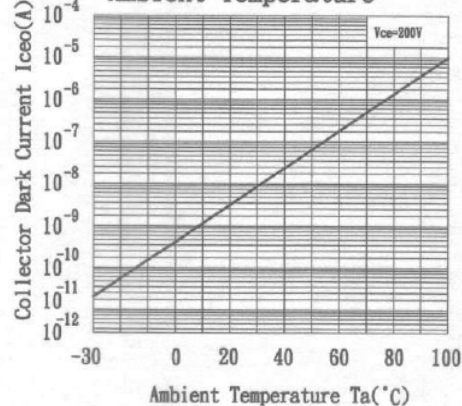


Fig. 6 Collector Current vs. Collector-emitter Voltage

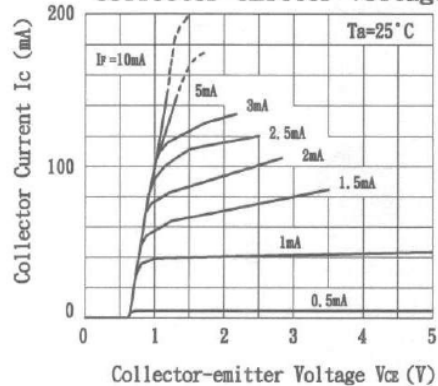
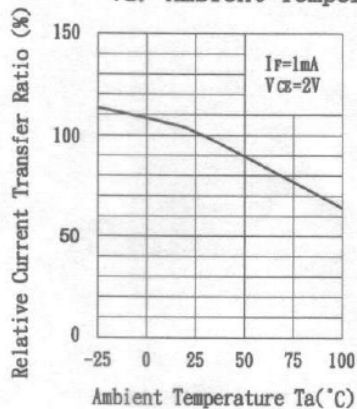


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.



OPIA5010

Fig.1 Current Transfer Ratio vs. Forward Current

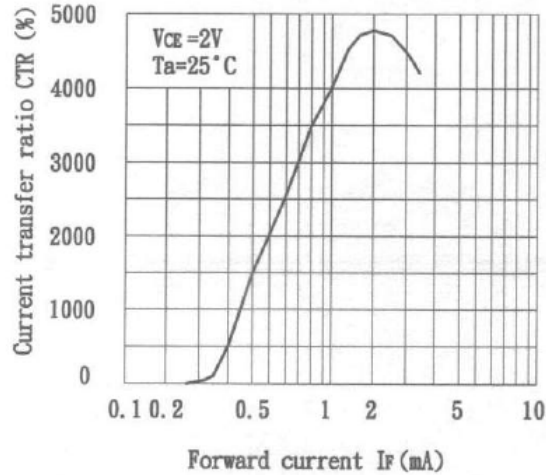


Fig. 8 Collector-emitter Saturation Voltage vs. Forward Current

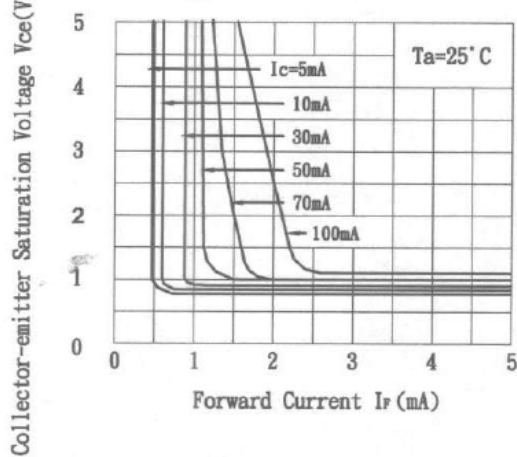
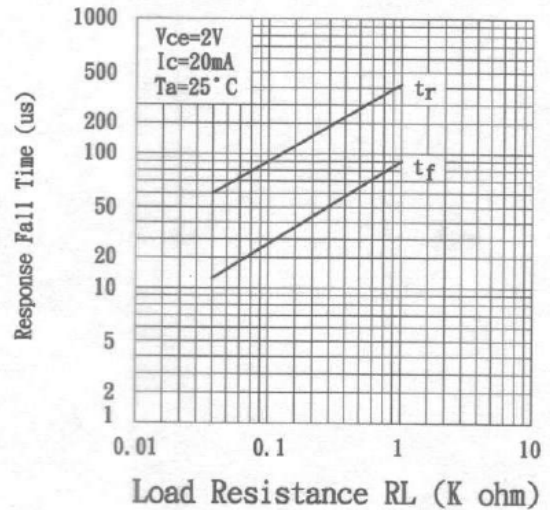


Fig. 9 Response Time vs. Load Resistance



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA3N33

Fig. 1 Forward Current vs. Ambient Temperature

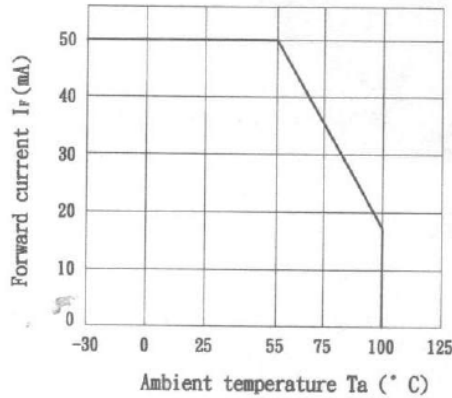


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

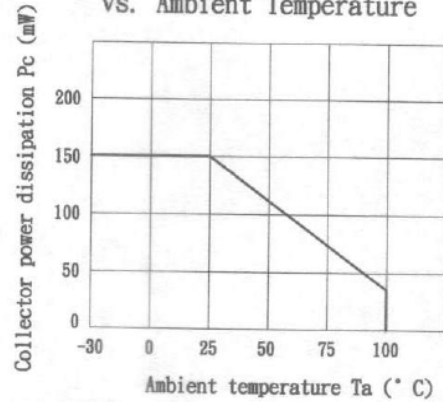


Fig. 3 Peak Forward Current vs. Duty Ratio

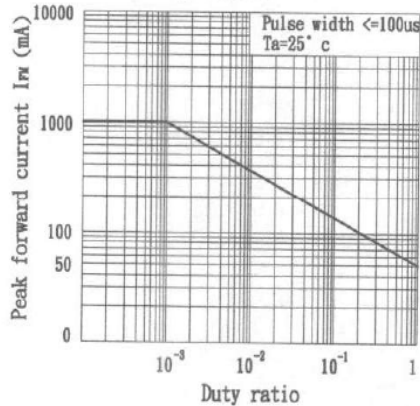


Fig. 4 Forward Current vs. Forward Voltage

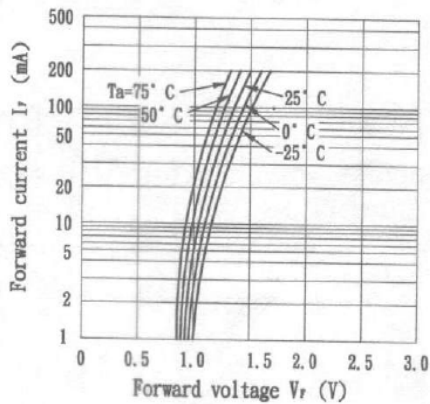


Fig. 5 Current Transfer Ratio vs. Forward Current

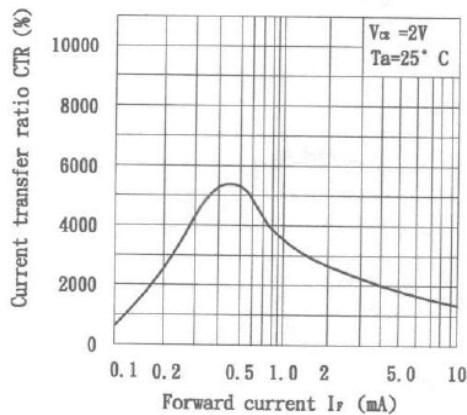
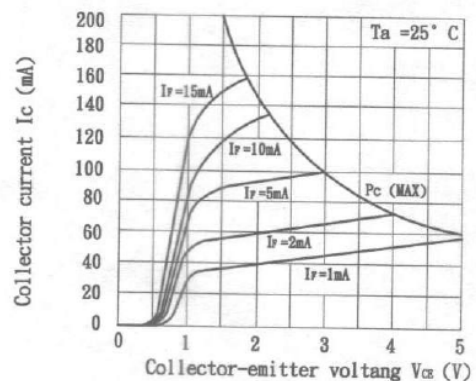


Fig. 6 Collector Current vs. Collector-emitter Voltage



OPTeK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA3N33

Fig. 11 Collector-emitter Saturation Voltage vs. Forward current

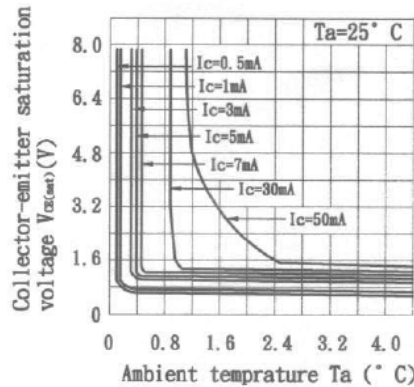


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

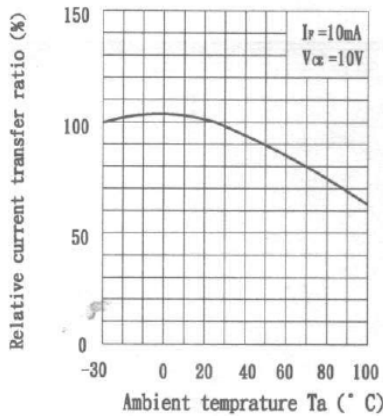


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

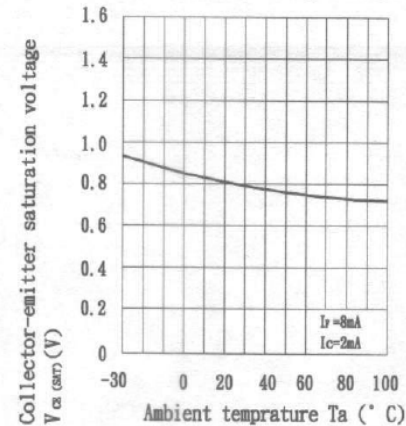


Fig. 9 Collector Dark Current vs. Ambient Temperature

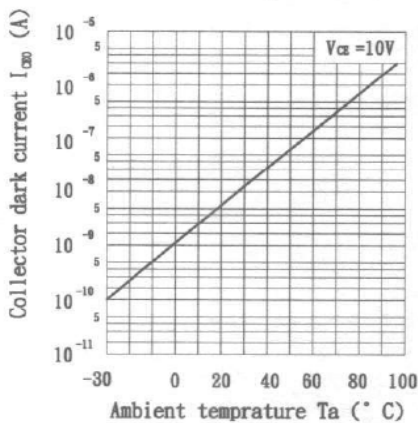
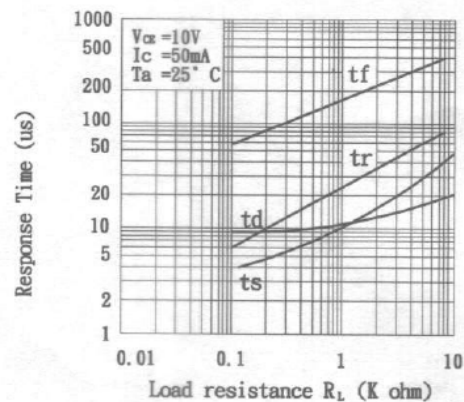


Fig. 10 Response Time vs. Load Resistance



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA2210

Fig. 1 Current Transfer Ratio Vs. Forward Current

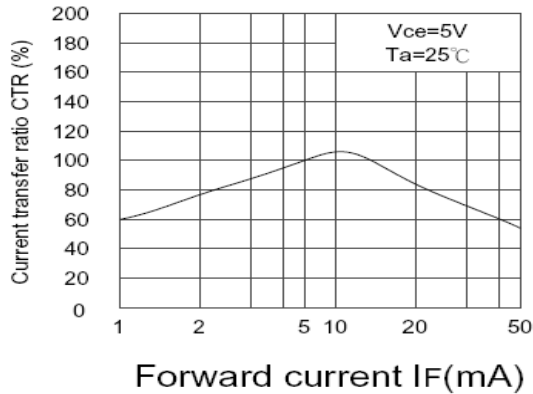


Fig.2 Collector Power Dissipation vs. Ambient Temperature

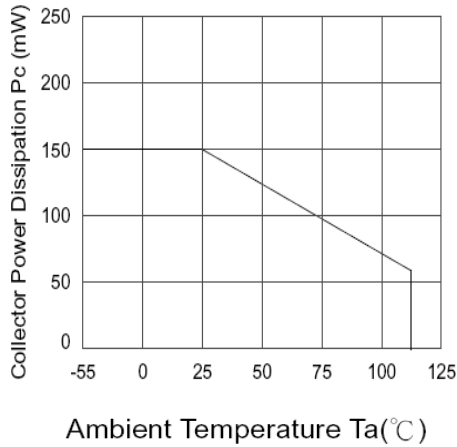


Fig.3 Collector Dark Current vs. Ambient Temperature

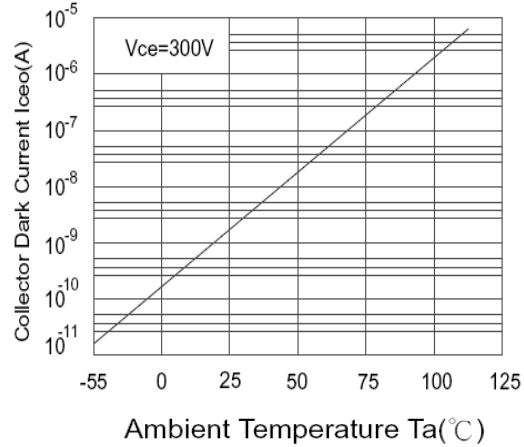


Fig.4 Forward Current vs. Ambient Temperature

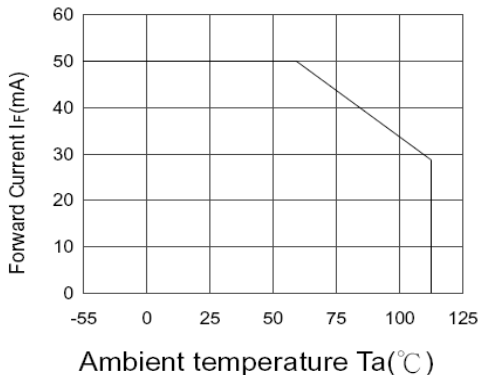
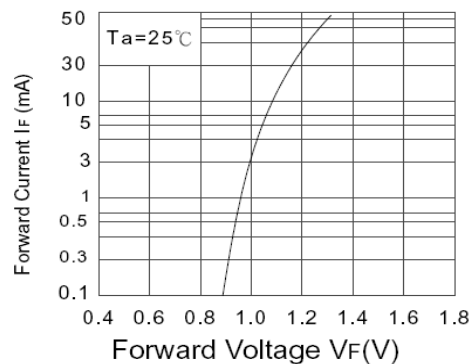


Fig.5 Forward Current vs. Forward Voltage



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA2210

Fig.6 Collector Current vs. Collector-emitter Voltage

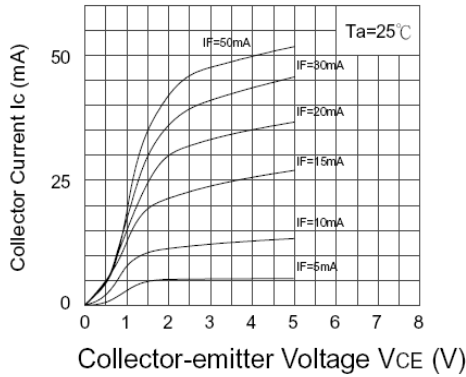


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

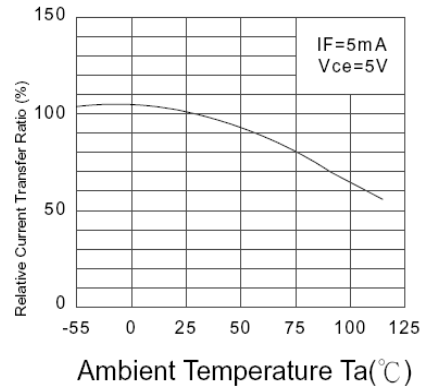


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

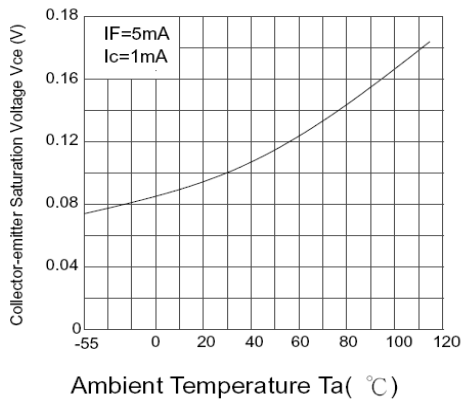


Fig.9 Collector-emitter Saturation Voltage vs. Forward Current

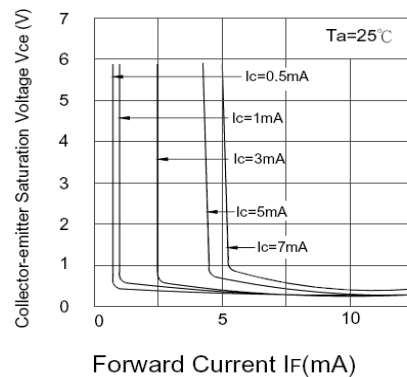


Fig.10 Response Time vs. Load Resistance

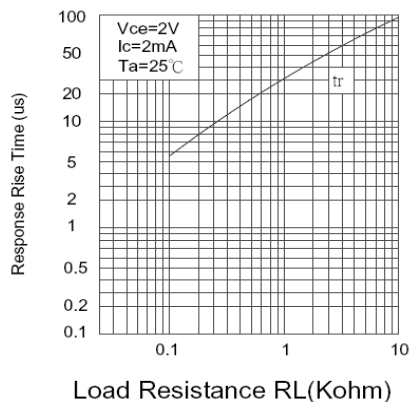
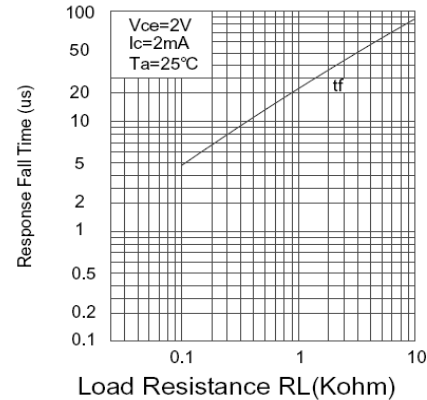


Fig.11 Response Time vs. Load Resistance



OPTeK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA6010

Fig.1 Current Transfer Ratio vs. Forward Current

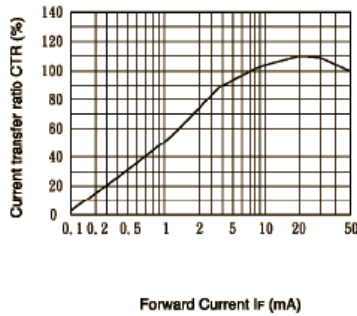


Fig.2 Collector Power Dissipation vs. Ambient Temperature

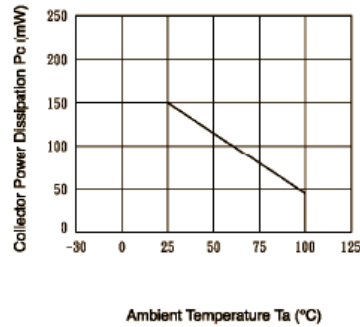


Fig.3 Collector Dark Current vs. Ambient Temperature

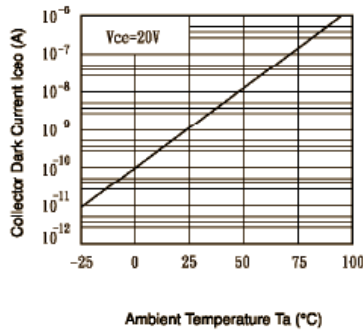


Fig.4 Forward Current vs. Ambient Temperature

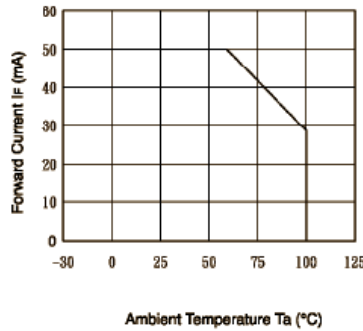


Fig.5 Forward Current vs. Forward Voltage

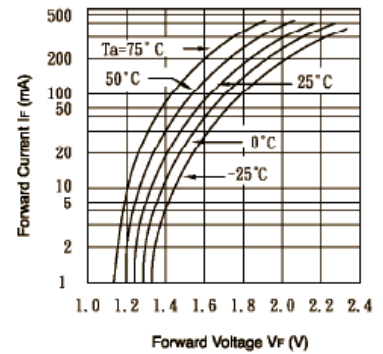


Fig.6 Collector Current vs. Collector-emitter Voltage

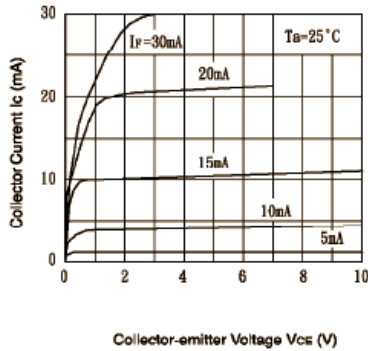


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

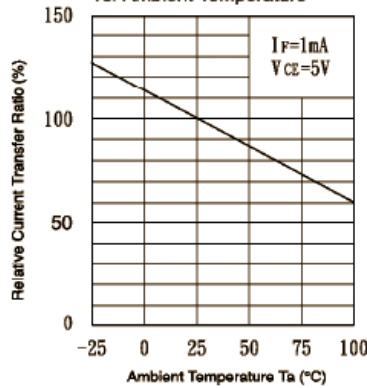
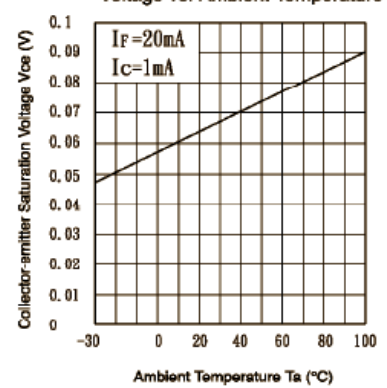


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA4N35, OPIA5010, OPIA4N33  
 OPIA2110, OPIA2210, OPI6010  
 DIP Package



OPIA6010

Fig.9 Collector-emitter Saturation Voltage vs. Forward Current

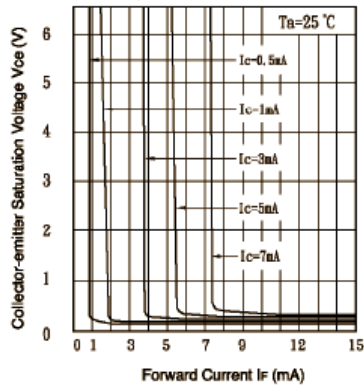


Fig.10 Response Time vs. Load Resistance

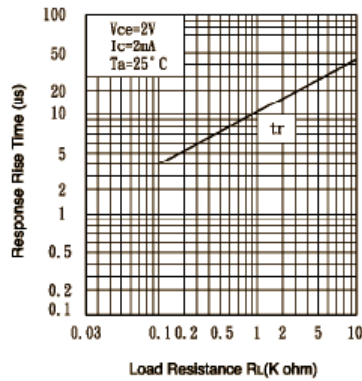
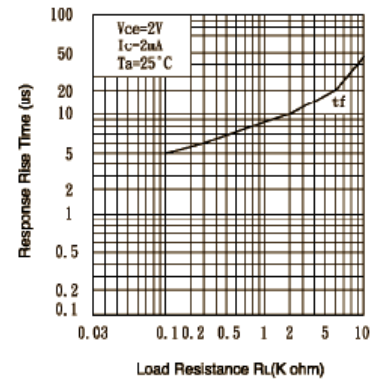


Fig.11 Response Time vs. Load Resistance



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

OPIA2210

Fig.1 Current Transfer Ratio vs. Forward Current

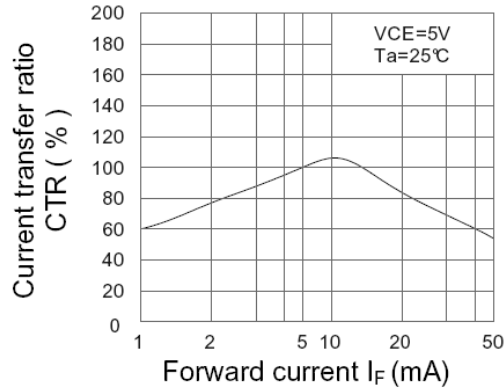


Fig.2 Collector Power Dissipation vs. Ambient Temperature

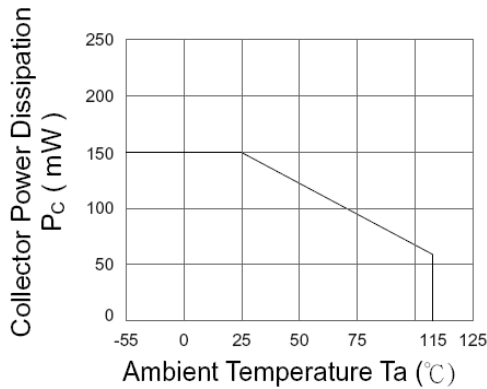


Fig.3 Collector Dark Current vs. Ambient Temperature

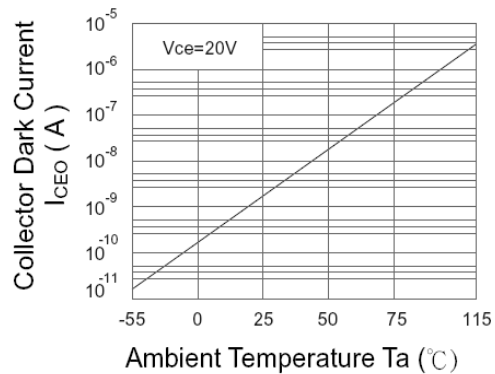


Fig.4 Forward Current vs. Ambient Temperature

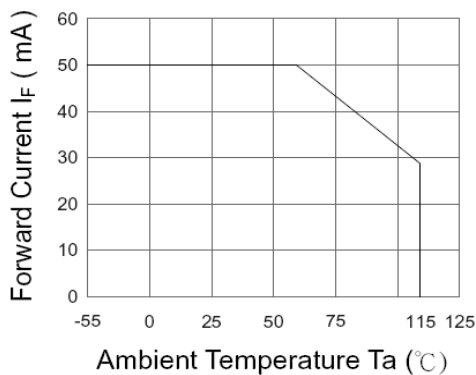
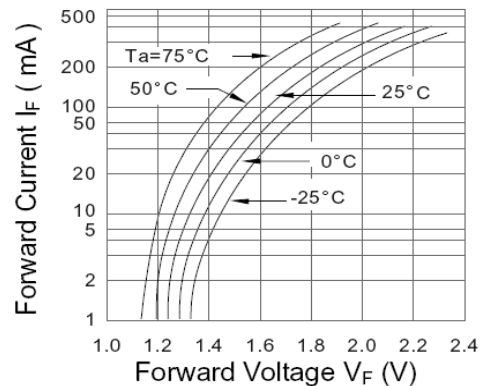


Fig.5 Forward Current vs. Forward Voltage



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.



OPIA2210

Fig.6 Collector Current vs. Collector-Emitter Voltage

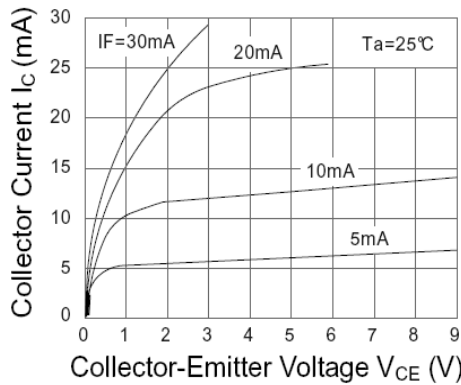


Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

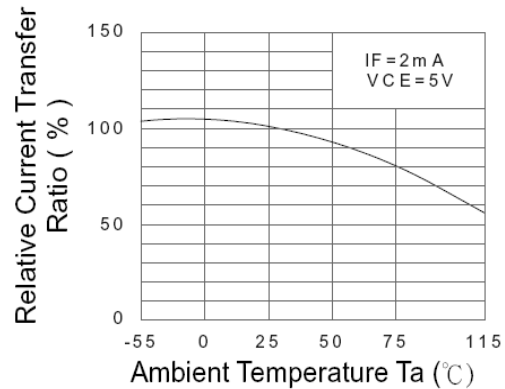


Fig.8 Collector-Emitter Saturation Voltage vs. Ambient Temperature

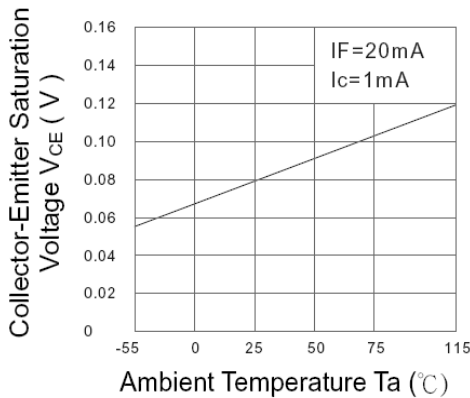


Fig.9 Collector-Emitter Saturation Voltage vs. Forward Current

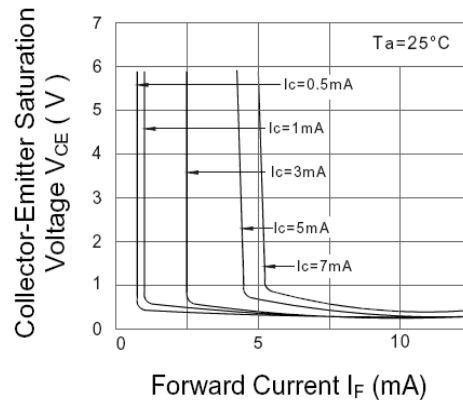


Fig.10 Response Time vs. Load Resistance

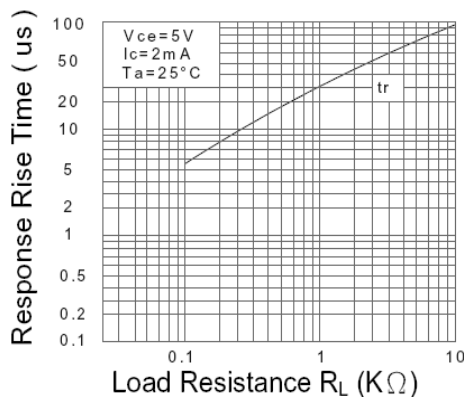
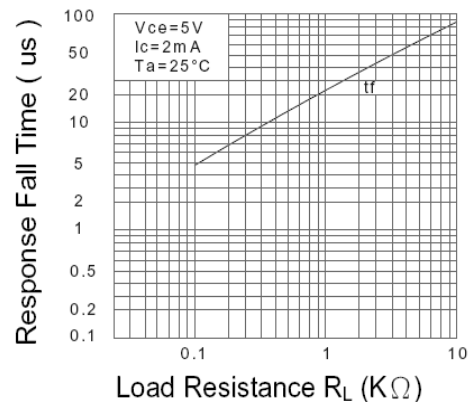


Fig.11 Response Time vs. Load Resistance



OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

**OPIA4N35, OPIA5010, OPIA4N33  
OPIA2110, OPIA2210, OPI6010  
DIP Package**



**Quality / Reliability Requirements**

| Parameter                  | Failure Criteria | Conditions  |
|----------------------------|------------------|---|
| HTRB D I <sub>C(OFF)</sub> | ± 10%            | 11 samples after 500Hrs   |
|                            | 0 Fail           | @ VCE = 5.0VDC, Ta = 70°C   |
| HTFB D I <sub>C(ON)</sub>  | ± 10%            | 50 samples after 96Hrs  |
|                            | 0 Fail           | @ Max P <sub>D</sub> , Ta = 25°C  |
| MTTF @ 90% confidence      | 150,000 Min.     | @ 25°C, 25mADC  |
| Moisture Sensitivity Level | MSL 1            | per JDEC std J-STD-020B   |
| Lead Solderability         | 0 Fail           | per Method 208 of MIL-STD-202.  |
| Glass Transition of body   | 125°C Min.       | DSC test method   |
| Temperature Humidity-Bias  | ± 20%            | 85°C, 85%RH, 500Hrs, 80% min I <sub>ceo</sub>                           |
| Temperature Cycle          | ± 20%            | per Method 1010.7 of MIL-STD-883E                                       |
| High Temperature Storage   | ± 20%            | 85°C, 500Hrs  |
| Autoclave                  | 0 Fail           | T <sub>A</sub> = 121°C, Pressure = 15psi, Humidity = 100%, Time = 96Hrs |

**Note:** This is to be performed when a change occurs to form, fit or function.

**Government and Industry Standard  
Compliance Requirements**

European Union's Reduction of Hazardous Substances (RoHS) Directive 2002/95/EC

**Label Identification**

**DESCRIPTION:**

Size: 3" (7.4 cm) X 2.2" (5.5 cm)  
Lettering shall be black on white background.  
Format shall be as:

**Notes:**

- The DATE CODE is a 4-digit code for date of manufacture where YY is the last two digits of the year, and WW is week number of manufacture.
- The LOT I.D. is the manufacturing location lot identification where Y is the year of manufacture, NNNN is a sequential lot identifier, and DDD is the day of the year of manufacture. – or use equivalent label format.

|   |  |
|---|--|
| <br>Carrolton, TX, USA<br>MADE IN TAIWAN<br><small>RoHS compliant</small> |  |
| OPTEK P/N <u>  OPI4N35D-TU  </u><br>                                      |  |
| QTY. <u>      N/A      </u><br>   |  |
| DATE CODE <u>      (Y Y W W)      </u><br>                                |  |
| LOT I.D. <u>      (Y - N N N N D D D)      </u><br>                       |  |

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

# OPIA4N35, OPIA5010, OPIA4N33 OPIA2110, OPIA2210, OPI6010 DIP Package



## Packaging Information:

| Optek's Optocoupler Part Numbers |   | Packaging Quantities |    | Tube   |        | Inner           |        | Small Carton        |        |              | Medium Carton         |        |              | Large Carton        |        |              |
|----------------------------------|---|----------------------|----|--------|--------|-----------------|--------|---------------------|--------|--------------|-----------------------|--------|--------------|---------------------|--------|--------------|
|                                  |   |                      |    | Qty    | Weight | 52 x 7 x 7.5 cm |        | 53.5 x 16 x 17.5 cm |        |              | 53.5 x 30.7 x 17.5 cm |        |              | 53.5 x 30.7 x 25 cm |        |              |
|                                  |   |                      |    |        |        | Qty             | Weight | Qty                 | Weight | Gross Weight | Qty                   | Weight | Gross Weight | Qty                 | Weight | Gross Weight |
| <b>P/H and SMD</b>               | <b>4-PIN</b><br>OPIA400D/A, OPIA410D/A - OPIA413D/A               | 100                  | 44 | 3,000  | 1.40   | 12,000          | 6.0    | 6.5                 | 24,000 | 12.0         | 12.5                  | 36,000 | 18.0         | 18.5                |        |              |
|                                  | <b>6-PIN</b><br>OPIA6XXD/A Series                                 | 65                   | 44 | 1,950  | 1.50   | 7,800           | 6.5    | 7.0                 | 15,600 | 12.0         | 12.5                  | 23,400 | 18.5         | 19.0                |        |              |
|                                  | <b>8-PIN</b><br>OPIA8XXD Series and OPID804D                      | 48                   | 44 | 1,440  | 1.44   | 5,760           | 6.0    | 6.5                 | 11,520 | 12.0         | 12.5                  | 17,290 | 18.0         | 18.5                |        |              |
| <b>M/F SOP</b>                   | <b>4-PIN and 5-PIN</b><br>OPIA401B - OPIA404B, OPIA414B, OPIA500B | 100                  | 24 | 6,000  | 1.60   | 24,000          | 6.5    | 7.0                 | 48,000 | 13.0         | 13.5                  | 72,000 | 19.5         | 20.0                |        |              |
| <b>SSOP</b>                      | <b>4-PIN</b><br>OPIA405C - OPIA409C                               | 170                  | -- | 10,200 | --     |                 |        |                     |        |              |                       |        |              |                     |        |              |

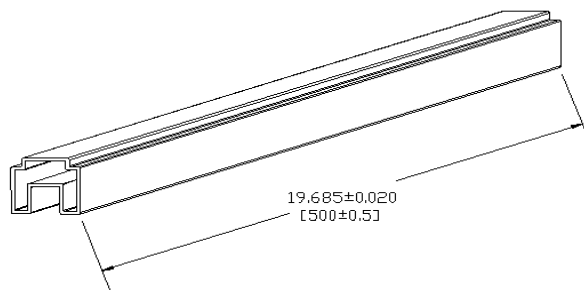
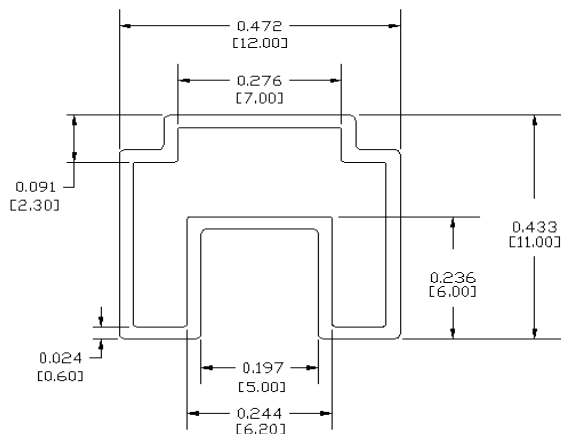
**P/H** = Pin-Hole Packages (Referred as D = Dual-In-Line Package)

**SMD** = Standard Surface Mount Packages (Referred as A = 6.5mil SMD)

**M/F or SOP** = Mini-Flat Packages or Small Outside Packages (Referred as B = 4.40mil SMD w/ 2.54mil Lead-Spacing)

**SSOP** = Shrink SOP Packages (Referred as C = 3.60mil SMD with 1.27mil Lead-Spacing)

## Tube Packaging Specifications (TU):



**Quantity: 6-pin: 65pcs/tube**

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.