

**PC-17K1 • PC-17K2 • PC-17K4**

These Photocouplers consist of a Gallium Arsenide Infrared Emitting Diode and a Silicon NPN Phototransistor per a channel  
 The PC-17K1 has one channel in a 4-pin DIP package  
 The PC-17K2 has two channels in a 8-pin DIP package  
 The PC-17K4 has four channels in a 16-pin DIP package

**FEATURES**

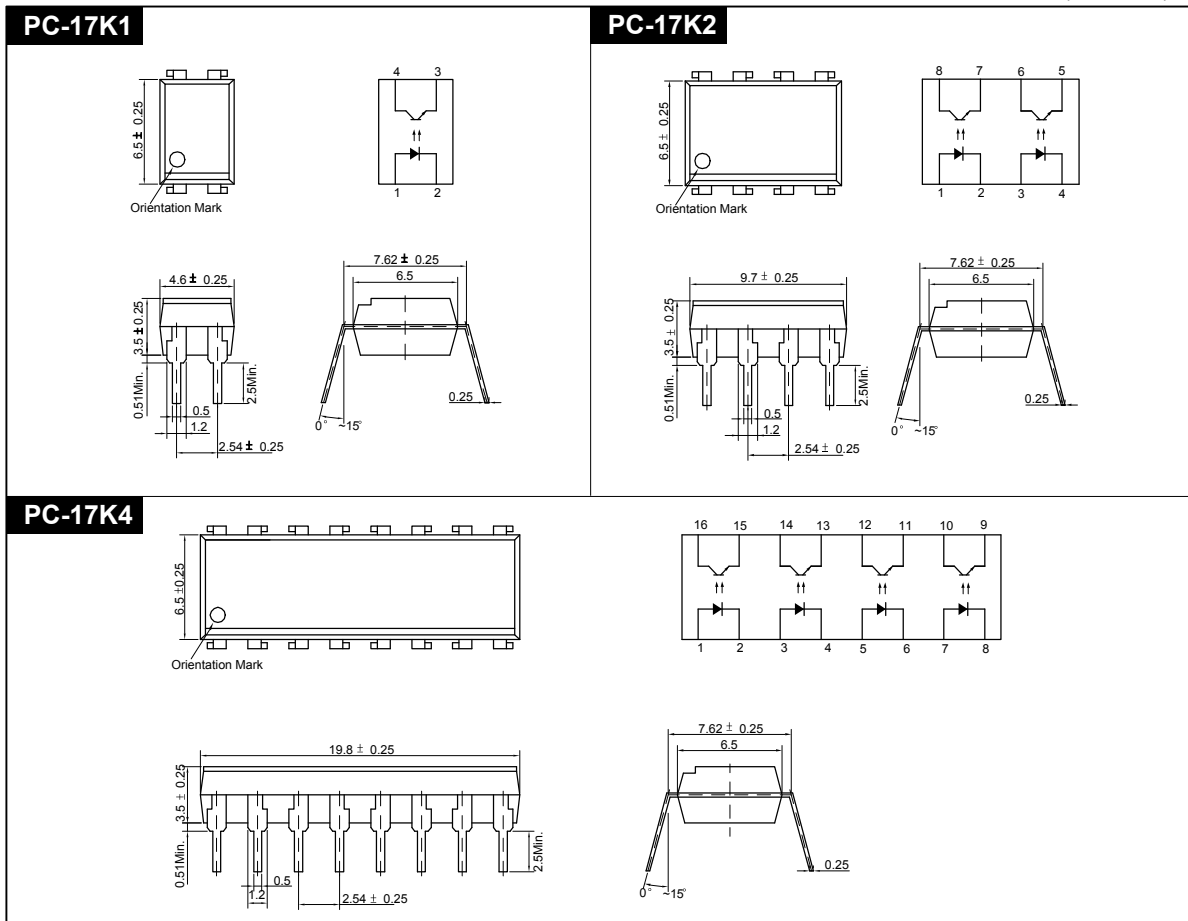
- Small Package Size
- Collector-Emitter Voltage : Min.35V
- Current Transfer Ratio : Min.50% (at  $I_F=5mA$ ,  $V_{CE}=5V$ )
- Electrical Isolation Voltage : AC5000Vrms
- Creepage/Clearance between Input and Output : Min. 7.0mm
- UL Recognized File No. E107486

**APPLICATIONS**

- Interface between two circuits of different potential
- Vending Machine, Cordless Phone, Key Phone, Fax, Motor Control
- Programmable Logic Control
- Power Supply
- Computer Terminals

**DIMENSION**

(Unit : mm)



# PC-17K1 • PC-17K2 • PC-17K4

## MAXIMUM RATINGS

(Ta=25°C)

| Parameter                            |                                     | Symbol | Rating   | Unit |
|--------------------------------------|-------------------------------------|--------|----------|------|
| Input                                | Forward Current                     | IF     | 50       | mA   |
|                                      | Reverse Voltage                     | VR     | 5        | V    |
|                                      | Peak Forward Current *1             | IFP    | 1        | A    |
|                                      | Power Dissipation                   | PD     | 70       | mW   |
| Output                               | Collector-Emitter Breakdown Voltage | BVCEO  | 35 *4    | V    |
|                                      | Emitter-Collector Breakdown Voltage | BVECO  | 6        | V    |
|                                      | Collector Current                   | IC     | 50       | mA   |
|                                      | Collector Power Dissipation         | PC     | 150      | mW   |
| Input to Output Isolation Voltage *2 |                                     | Viso   | AC5000   | Vrms |
| Storage Temperature                  |                                     | Tstg   | -55~+125 | °C   |
| Operating Temperature                |                                     | Topr   | -30~+100 | °C   |
| Lead Soldering Temperature *3        |                                     | Tsol   | 260      | °C   |
| Total Power Dissipation              |                                     | Ptot   | 200      | mW   |

\*1. Input current with 100 $\mu$ s pulse width, 1% duty cycle

\*2. Measured at RH=40~60% for 1min

\*3. 1/16 inch form case for 10sec

\*4. Customer Option

## ELECTRO-OPTICAL CHARACTERISTICS

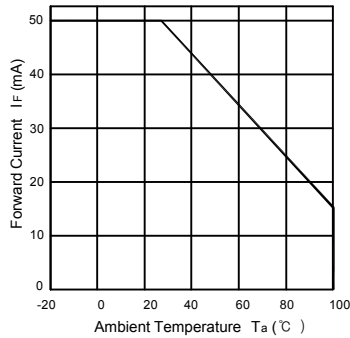
(Ta=25°C, unless otherwise noted)

| Parameter |                                      | Symbol   | Condition               | Min. | Typ.             | Max. | Unit.    |
|-----------|--------------------------------------|----------|-------------------------|------|------------------|------|----------|
| Input     | Forward Voltage                      | VF       | IF=10mA                 | -    | 1.15             | 1.30 | V        |
|           | Reverse Current                      | IR       | VR=5V                   | -    | -                | 10   | $\mu$ A  |
|           | Capacitance                          | CT       | V=0, f=1MHz             | -    | 30               | -    | pF       |
| Output    | Collector-Emitter Breakdown Voltage  | BVCEO    | IC=0.5mA                | 35   | -                | -    | V        |
|           | Emitter-Collector Breakdown Voltage  | BVECO    | IE=0.1mA                | 6    | -                | -    | V        |
|           | Collector Dark Current               | ICEO     | IF=0, VCE=24V           | -    | -                | 100  | nA       |
|           | Capacitance                          | CCE      | VCE=0, f=1MHz           | -    | 10               | -    | pF       |
| Coupled   | Current Transfer Ratio *5            | CTR      | IF=5mA, VCE=5V          | 50   | -                | 600  | %        |
|           | Collector-Emitter Saturation Voltage | VCE(SAT) | IF=5mA, IC=1mA          | -    | 0.15             | 0.4  | V        |
|           | Input-Output Capacitance             | CIO      | V=0, f=1MHz             | -    | 1                | -    | pF       |
|           | Input-Output Isolation Resistance    | RIO      | RH=40~60%, V=500V       | -    | 10 <sup>11</sup> | -    | $\Omega$ |
|           | Rise Time                            | tr       | VCE=5V, RL=100 $\Omega$ | -    | 4                | -    | $\mu$ s  |
|           | Fall Time                            | tf       | IC=2mA                  | -    | 4                | -    | $\mu$ s  |

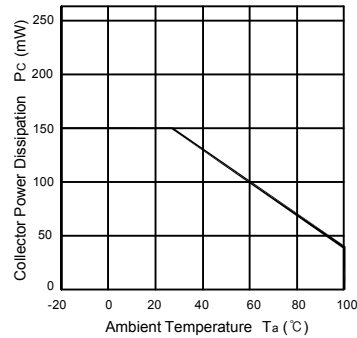
\*5. CTR=(IC/IF) X 100 (%)

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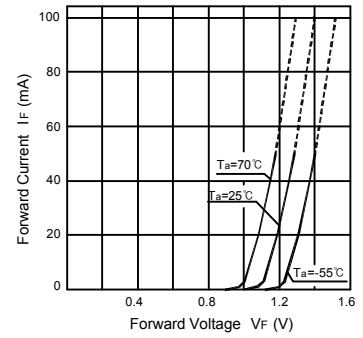
Forward Current vs. Ambient Temperature



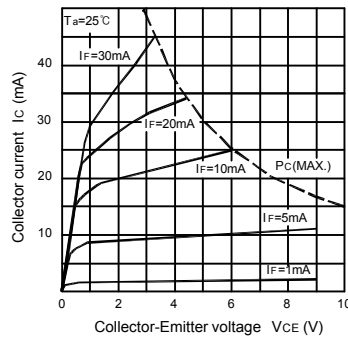
Collector Power Dissipation vs. Ambient Temperature



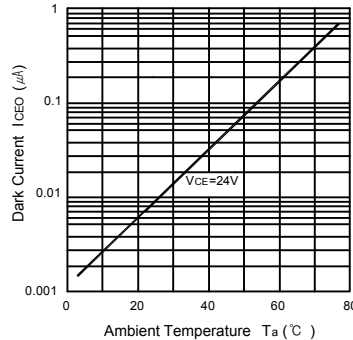
Forward Current vs. Forward Voltage



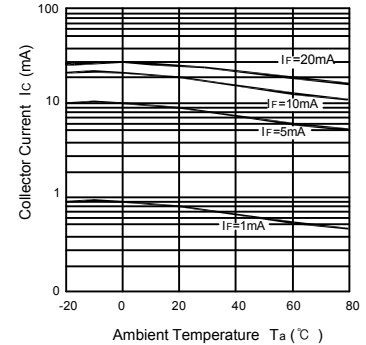
Collector Current vs. Collector-Emitter Voltage



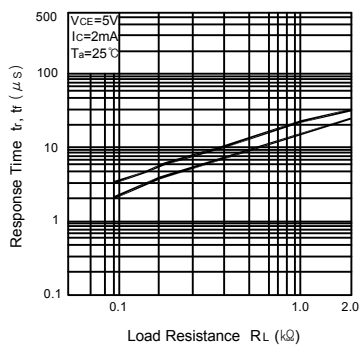
Dark Current vs. Ambient Temperature



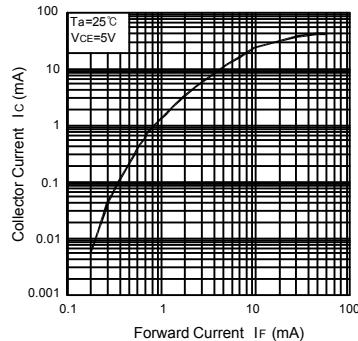
Collector Current vs. Ambient Temperature



Response Time vs. Load Resistance



Collector Current vs. Forward Current



Switching Time Test Circuit

