

PC829 H PC849 H

High Density Mounting Optocouplers

Electrically Tested to PC829 and PC849

Generic Specifications

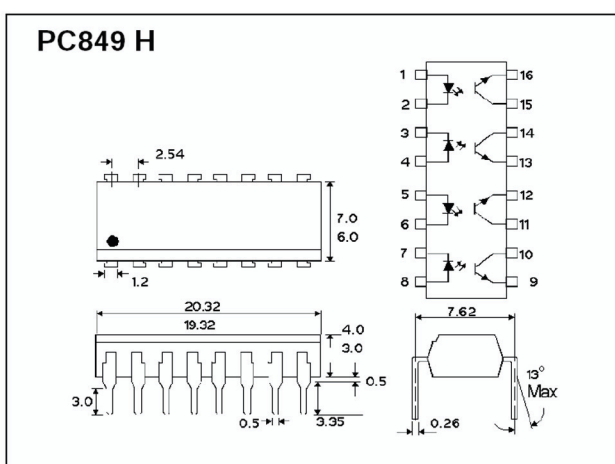
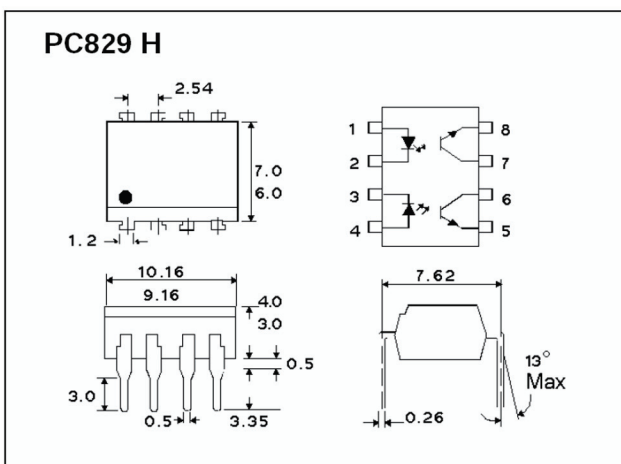
Features

- PC829 H 2-channel
- PC849 H 4-channel
- Symmetrical terminal configuration
- High current transfer ratio (CTR: Minimum 50% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
- High isolation voltage input to output ($V_{iso}: 5,000V_{RMS}$)
- UL approval
- RoHS Compliant

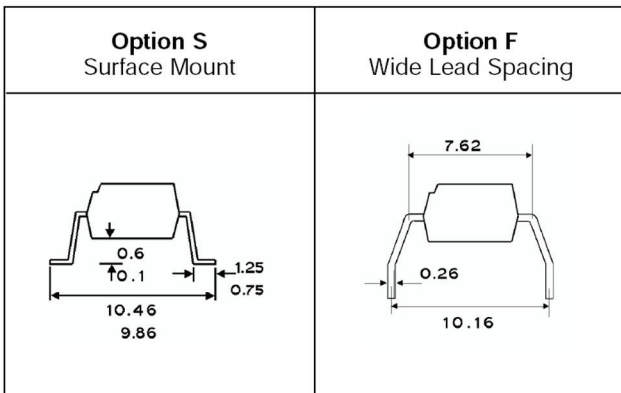
Applications

- Telecommunication circuits
- Digital I/O
- Instrumentation
- Signal transmission

Outline Dimensions (Units: mm)



Lead Forming Options



Ordering Information

| Part No. | DIL Package Style | Pack Size |
|------------|--|---------------|
| PC849 H | Standard | 100 per tube |
| PC849 HF | Wide lead spacing | 100 per tube |
| PC849 HS | Surface mount lead-form | 100 per tube |
| PC829 H | Standard | 100 per tube |
| PC829 HF | Wide lead spacing | 100 per tube |
| PC829 HS | Surface mount lead-form | 100 per tube |
| PC829 HSTR | Surface mount lead-form taped & reeled | 1000 per reel |

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Absolute Maximum Ratings (Ta=25°C)

| Parameter | | Symbol | Rating | Unit |
|-------------------------|-------------------------------|--------|-------------|------|
| Input | Forward current | IF | 50 | mA |
| | Peak forward current*1 | IFM | 1 | A |
| | Reverse voltage | VR | 6 | V |
| | Power dissipation*2 | P | 70 | mW |
| Output | Collector-emitter voltage | BVCEO | 35 | V |
| | Emitter-collector voltage | BVECO | 6 | V |
| | Collector current | IC | 50 | mA |
| | Collector power dissipation*3 | PC | 150 | mW |
| Total power dissipation | | Ptot | 170 | mW |
| Isolation voltage*4 | | Viso | 5,000 | VRMS |
| Operating temperature | | Topr | -25 to +100 | °C |
| Storage temperature | | Tstg | -40 to +125 | °C |
| Soldering temperature*5 | | Tsol | 260 | °C |

*1 Pulse width <= 100µs, Duty ratio : 0.001

*2 Derate linearly 1.33mW/°C above 25°C

*3 Derate linearly 1.50mW/°C above 25°C

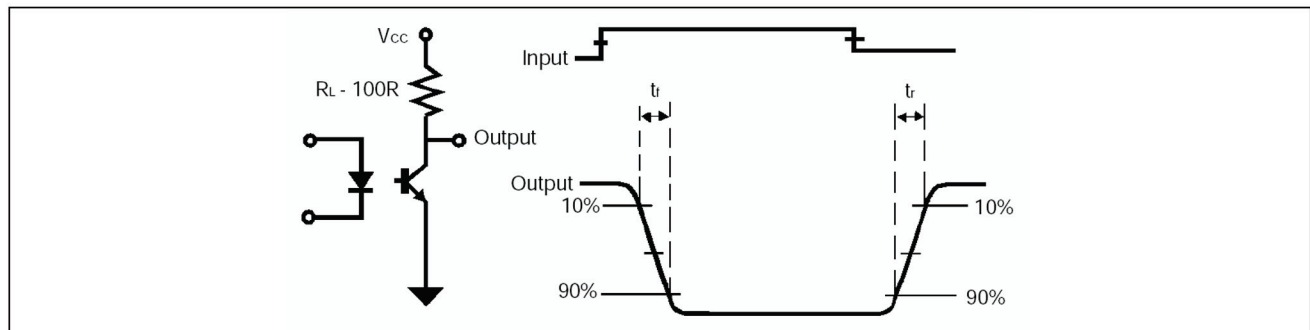
*4 40 to 60% RH, AC for 1 minute

*5 For 10 seconds. Suitable for Lead-free IR reflow soldering

Electro-optical Characteristics (Ta=25°C)

| Parameter | | Symbol | Test Conditions | MIN | TYP | MAX. | Unit |
|--------------------------|--------------------------------------|-----------|-----------------------|-------------------------------|------------------|------|------|
| Input | Forward voltage | VF | IF = 20mA | - | 1.2 | 1.4 | V |
| | Reverse current | IR | VR = 4V | - | - | 10 | µA |
| Output | Collector dark current | ICEO | VCE = 20V, IF = 0 | - | - | 100 | nA |
| Transfer Characteristics | Current transfer ratio | CTR | IF = 5mA, VCE = 5V | 50 | - | 400 | % |
| | Collector-emitter saturation voltage | VCE(sat) | IF = 20mA, IC = 1mA | - | 0.1 | 0.2 | V |
| | Isolation resistance | RISO | DC 500V, 40 to 60% RH | 5x10 ¹⁰ | 10 ¹¹ | - | Ω |
| | Floating capacitance | Cf | V = 0, f = 1MHz | - | 0.6 | 1.0 | pF |
| | Response time | Rise time | tr | VCE = 2V, IC = 2mA, RL = 100Ω | - | - | 15 |
| Fall time | | tr | - | | - | 15 | µs |

Test Circuit for Response Time



Also available in this series are: PC824 H, PC825 H and PC827 H

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Characteristic Curves

Fig.1 Forward Current vs. Ambient Temperature

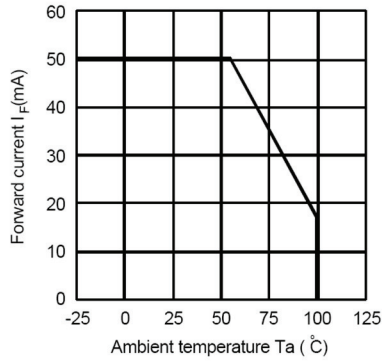


Fig.2 Collector Power Dissipation vs. Ambient Temperature

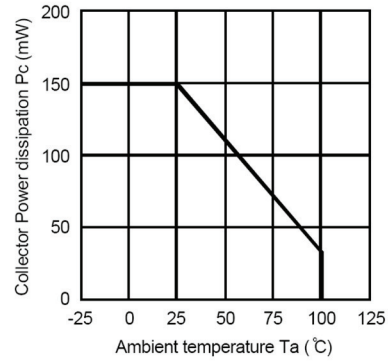


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

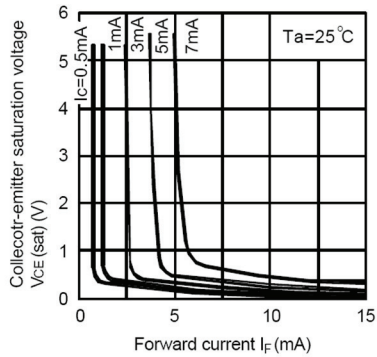


Fig.4 Forward Current vs. Forward Voltage

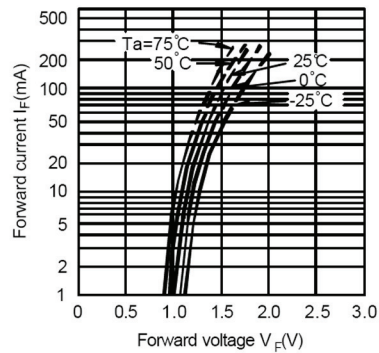


Fig.5 Current Transfer Ratio vs. Forward Current

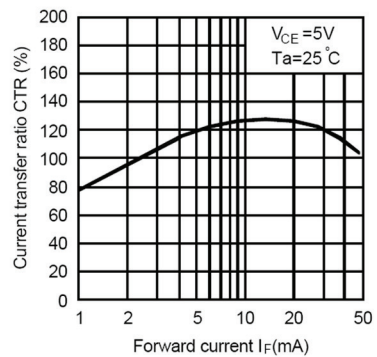
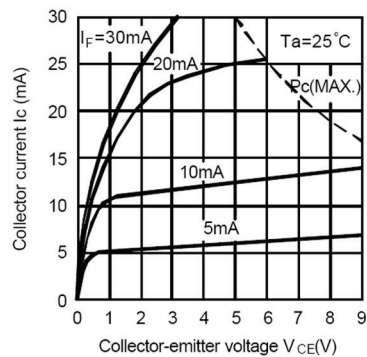


Fig.6 Collector Current vs. Collector-emitter Voltage



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Characteristic Curves

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

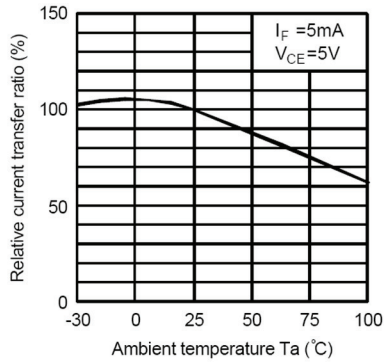


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

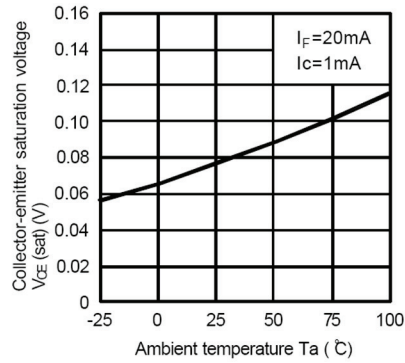


Fig.9 Collector Dark Current vs. Ambient Temperature

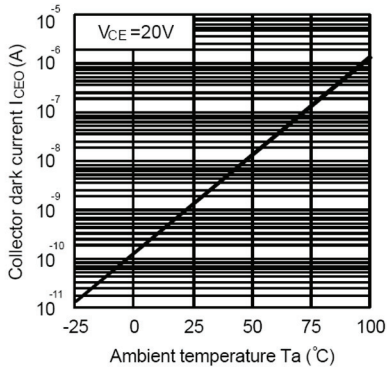


Fig.10 Response Time vs. Load Resistance

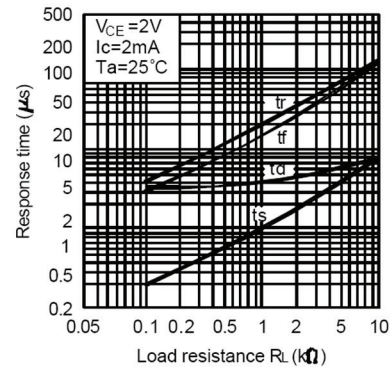
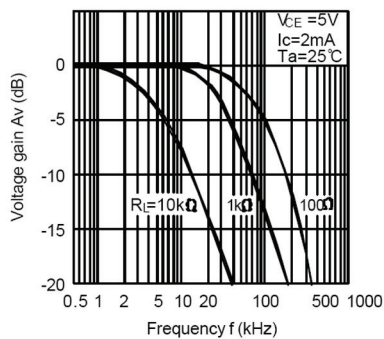
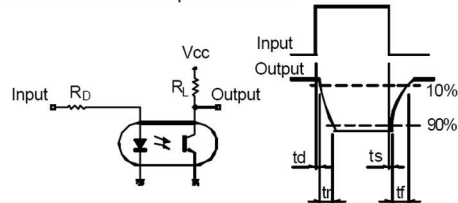


Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

