

PC512

European Safety Standard Approved Long Creepage Distance Type Photocoupler

■ Features

1. Conform to European Safety Standards

UL file No. E64380

Approved by VDE (DIN VDE0884 : No. 77296)

Approved by BSI

(BS EN60065 IEC65 Test Leaflets land 5

BS EN60950 IEC950 EN41003 Test Leaflets land 5)

Approved by SEMKO (No. 9303001)

Approved by DEMKO (108025)

Approved by EI (155031-01)

Approved by CSA (CA95323 or CA76261)

2. Long creepage distance type

(Creepage distance : 11.5mm or more)

3. Compact

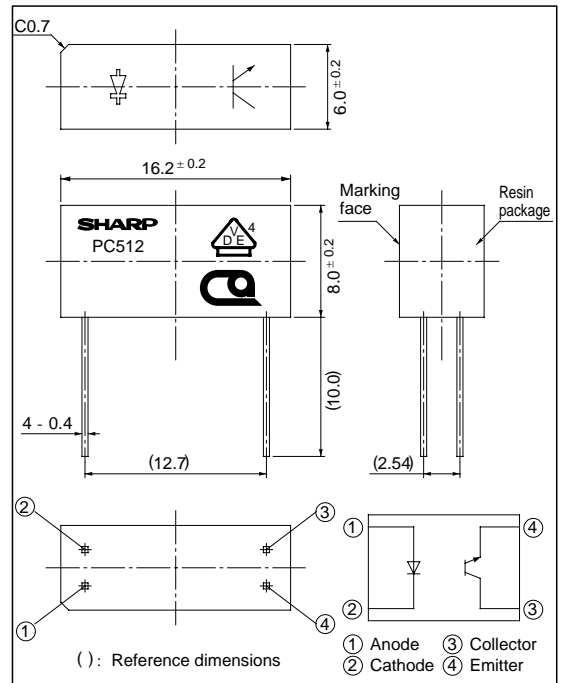
4. High isolation voltage (V_{iso} : 5 000V_{rms})

■ Applications

1. Power supplies

■ Outline Dimensions

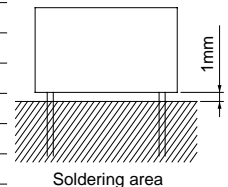
(Unit : mm)



■ Absolute Maximum Ratings

($T_a = 25^\circ\text{C}$)

| Parameter | | Symbol | Rating | Unit |
|--------------------------|-----------------------------|-----------|---------------|-------------------|
| Input | Forward current | I_F | 50 | mA |
| | *1 Peak forward current | I_{FM} | 1 | A |
| | Reverse voltage | V_R | 6 | V |
| | Power dissipation | P | 75 | mW |
| Output | Collector-emitter voltage | V_{CEO} | 35 | V |
| | Emitter-collector voltage | V_{ECO} | 6 | V |
| | Collector current | I_C | 20 | mA |
| | Collector power dissipation | P_C | 75 | mW |
| *2 Isolation voltage | | V_{iso} | 5 | kV _{rms} |
| Operating temperature | | T_{opr} | - 25 to + 85 | $^\circ\text{C}$ |
| Storage temperature | | T_{stg} | - 40 to + 100 | $^\circ\text{C}$ |
| *3 Soldering temperature | | T_{sol} | 260 | $^\circ\text{C}$ |



*1 Pulse width $\leq 100\mu\text{s}$ Duty ratio : 0.001

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

*3 For MAX. 10 seconds at the position of 1mm from the edge of resin package.

Electro-optical Characteristics

(T_a = 25°C)

| Parameter | | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|--------------------------|--------------------------------------|----------------------|---|------------------|-----------|----------------|---|
| Input | Forward voltage | V _F | I _F = 20mA | - | 1.2 | 1.4 | V |
| | Peak forward voltage | V _{FM} | I _{FM} = 0.5A | - | 3 | 4 | V |
| | Reverse current | I _R | V _R = 3V | - | - | 10 | μA |
| | Terminal capacitance | C _t | V = 0, f = 1kHz | - | 50 | 250 | pF |
| Output | Collector dark current | I _{CEO} | V _{CE} = 20V, I _F = 0 | - | - | 100 | nA |
| | Collector-emitter breakdown voltage | BV _{CEO} | I _C = 0.1mA, I _F = 0 | 35 | - | - | V |
| | Emitter-collector breakdown voltage | BV _{ECO} | I _E = 10μA, I _F = 0 | 6 | - | - | V |
| Transfer characteristics | Collector current | I _C | I _F = 20mA, V _{CE} = 5V | 2 | - | 20 | mA |
| | Collector-emitter saturation voltage | V _{CE(sat)} | I _F = 40mA, I _C = 1mA | - | - | 0.4 | V |
| | Isolation resistance | R _{iso} | DC500V, 40 to 60% RH | 10 ¹² | - | - | Ω |
| | Cut-off frequency | f _c | V _{CE} = 2V, I _C = 2mA R _L = 100Ω, -3dB | 12 | 80 | - | kHz |
| | | | | Response time | Rise time | t _r | V _{CE} = 2V, I _C = 2mA R _L = 100Ω |
| Fall time | t _f | - | 4 | | 30 | μs | |

Fig. 1 Forward Current vs. Ambient Temperature

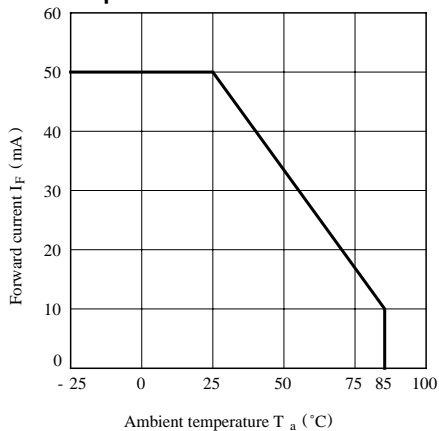


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

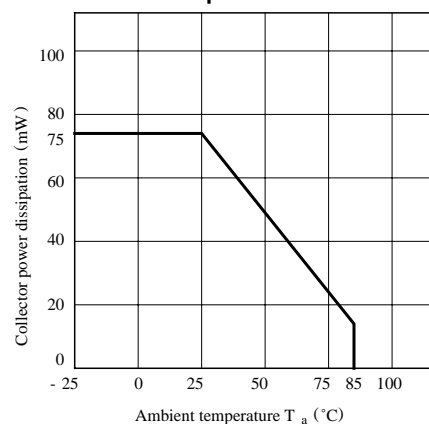


Fig. 3 Peak Forward Current vs. Duty Ratio

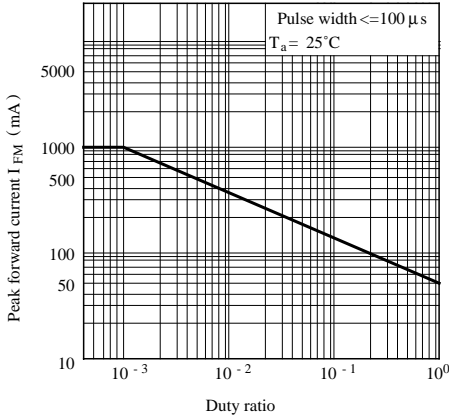


Fig. 4 Forward Current vs. Forward Voltage

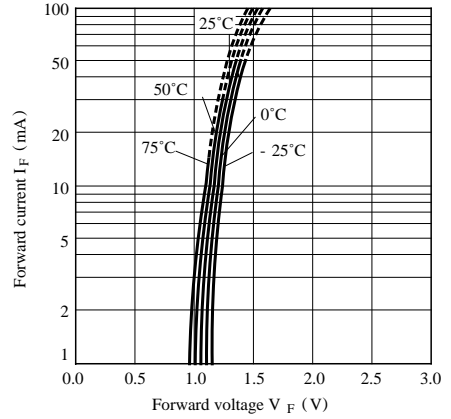


Fig. 5 Current Transfer Ratio vs. Forward Current

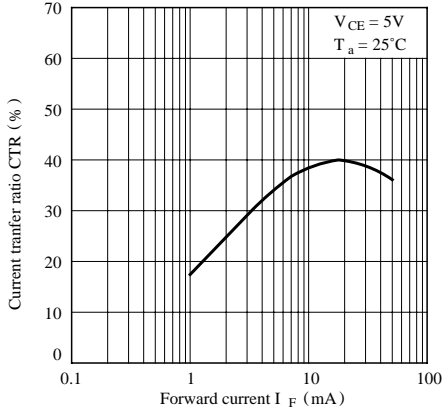


Fig. 6 Collector Current vs. Collector-emitter Voltage

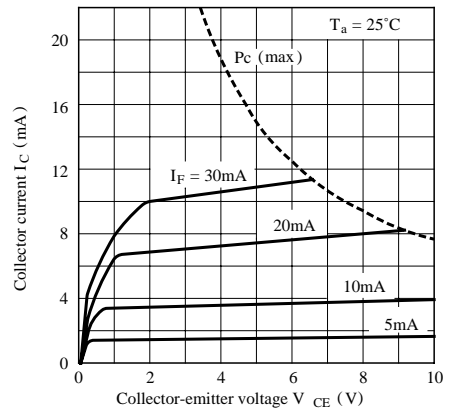


Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

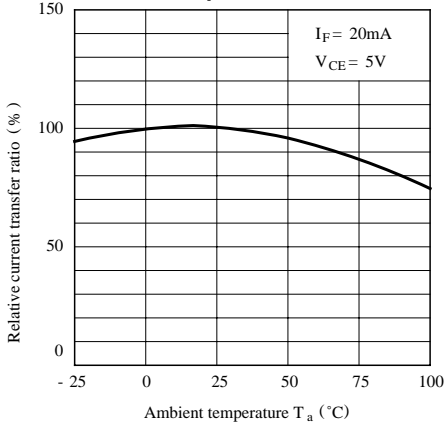


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

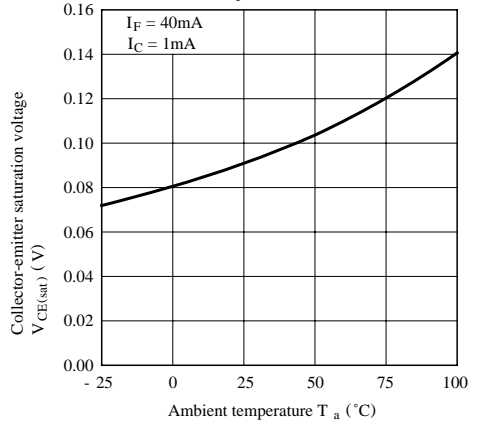


Fig. 9 Collector Dark Current vs. Ambient Temperature

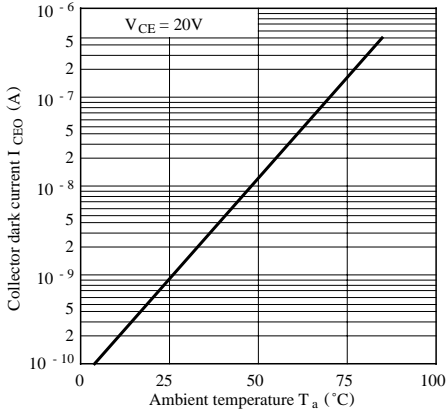


Fig.10 Response Time vs. Load Resistance

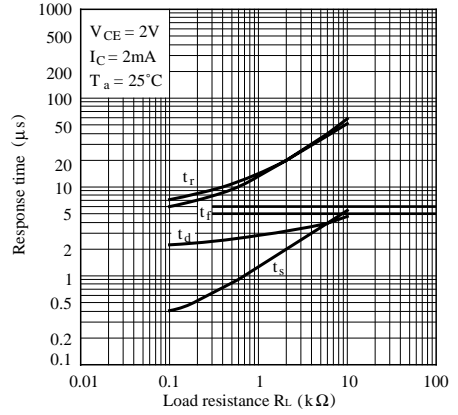


Fig.11 Frequency Response

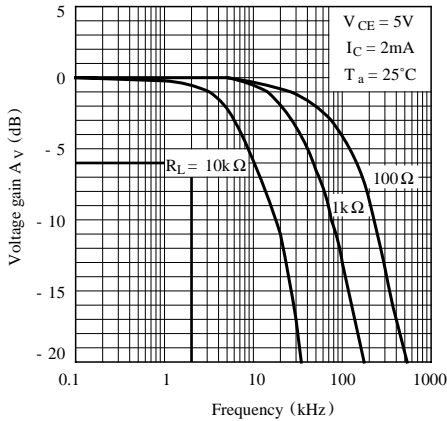
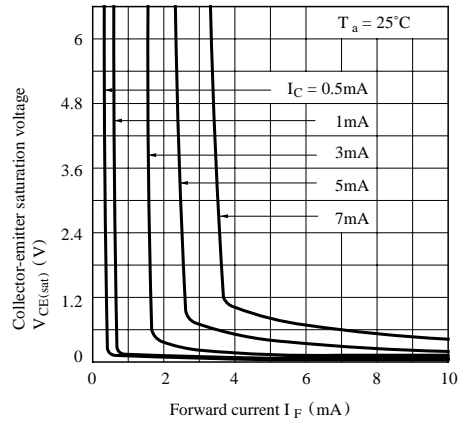


Fig.12 Collector-emitter Saturation Voltage vs. Forward Current



● Please refer to the chapter “Precautions for Use”