

PRODUCT SPECIFICATION

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| COSMO ELECTRONICS CORP. | Photocoupler : KPC452 | SHEET 1 OF 5 |
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Compact Surface Mount, High Collector emitter Voltage Type Photocoupler

● Features

1. Mini-flat package.
2. High collector-emitter voltage
(V_{CE0} : 300V)
3. High current transfer ratio
(CTR : MIN.1000% at $I_F=1mA$, $V_{CE}=2V$)
4. High isolation voltage between input and output (Viso:3750Vrms).

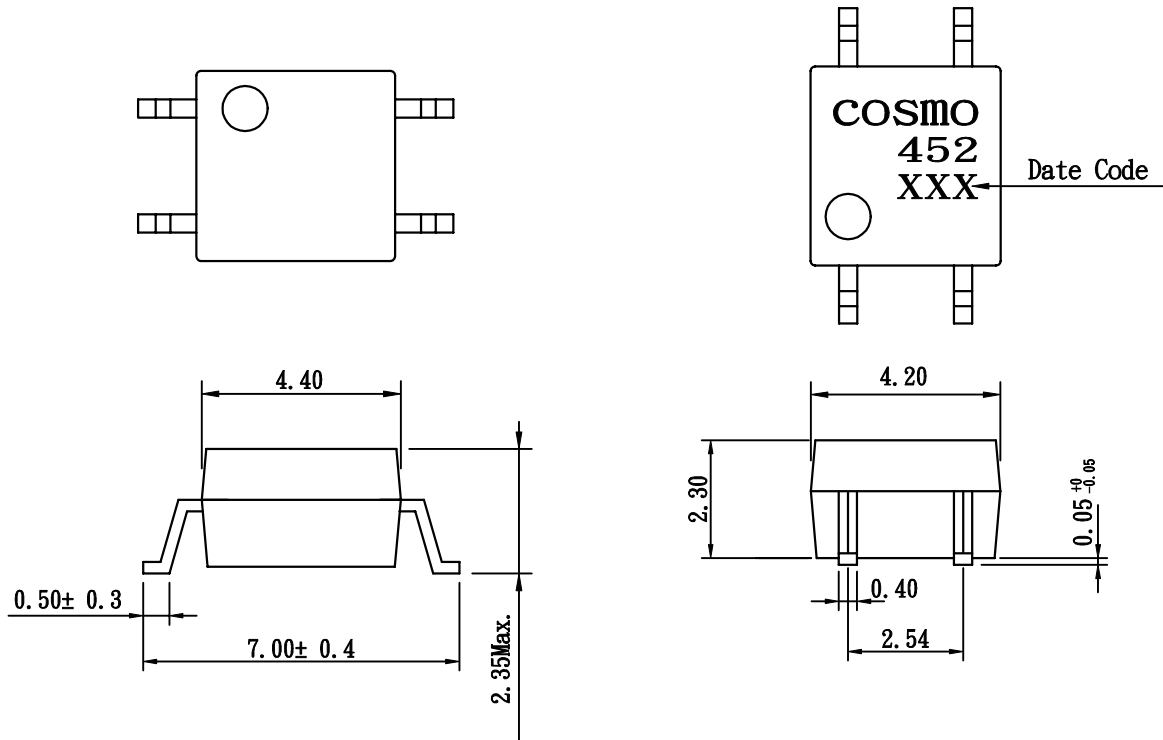
● Applications

1. Telephone sets.
2. Copiers, facsimiles.
3. Interfaces with various power supply circuits,
power distribution boards.
4. Hybrid substrates which require high density mounting.

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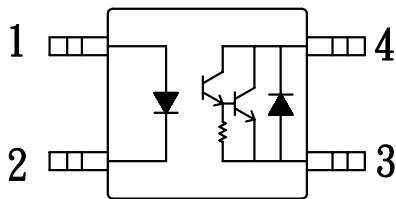
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| COSMO ELECTRONICS CORP. | Photocoupler : KPC452 | SHEET 2 OF 5 |
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1. OUTSIDE DIMENSION : UNIT(mm)



t=0.254± 0.05mm
TOLERANCE : ± 0.2mm

2. SCHEMATIC : TOP VIEW



1. Anode
2. Cathode
3. Emitter
4. Collector

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• Absolute Maximum Ratings

(Ta=25°C)

| | Parameter | Symbol | Rating | Unit |
|--------|----------------------------------|--------|-------------|------|
| Input | Forward current | IF | 50 | mA |
| | Peak forward current | IFM | 1 | A |
| | Reverse voltage | VR | 6 | V |
| | Power dissipation | P | 70 | mW |
| Output | Collector-emitter voltage | VCEO | 300 | V |
| | Emitter-collector voltage | VECO | 0.1 | V |
| | Collector current | Ic | 150 | mA |
| | Collector power dissipation | Pc | 150 | mW |
| | Total power dissipation | Ptot | 170 | mW |
| | Isolation voltage 1 minute | Viso | 3750 | Vrms |
| | Operating temperature | Topr | -30 to +100 | °C |
| | Storage temperature | Tstg | -40 to +125 | °C |
| | Soldering temperature 10 seconds | Tsol | 260 | °C |

• Electro-optical Characteristics

(Ta=25°C)

| | Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|--------------------------|--------------------------------------|----------|---------------------|--------------------|------------------|------|------|
| Input | Forward voltage | VF | IF=10mA | - | 1.2 | 1.4 | V |
| | Reverse current | IR | VR=4V | - | - | 10 | uA |
| | Terminal capacitance | Ct | V=0, f=1kHz | - | 30 | - | pF |
| Output | Collector dark current | ICBO | VCE=200V, IF=0 | - | - | 1 | uA |
| | Collector-emitter breakdown voltage | BVCEO | Ic=0.1mA, IF=0 | 300 | - | - | V |
| Transfer characteristics | Current transfer ratio | CTR | IF=1mA, VCE=2V | 1000 | - | - | % |
| | Collector-emitter saturation voltage | VCE(sat) | IF=20mA, Ic=100mA | - | - | 1.5 | V |
| | Isolation resistance | Riso | DC500V, 40 to 60%RH | 5x10 ¹⁰ | 10 ¹¹ | - | ohm |
| | Floating capacitance | Cf | V=0, f=1MHz | - | 0.6 | 1.0 | pF |
| | Response time (Rise) | tr | VCC=2V, Ic=20mA | - | 100 | 300 | us |
| | Response time (Fall) | tf | RL=100ohm | - | 20 | 100 | us |

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Fig.1 Forward Current vs. Ambient Temperature

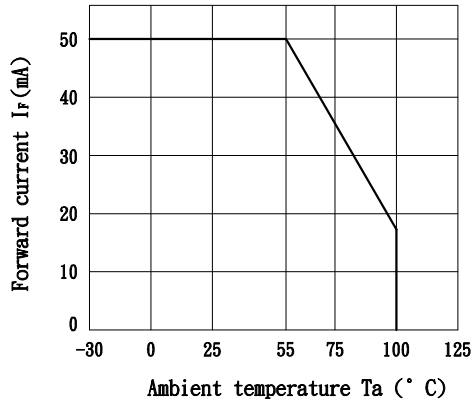


Fig.2 Collector Power Dissipation vs. Ambient Temperature

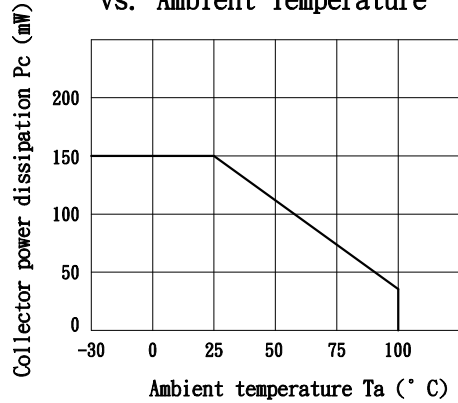


Fig.3 Peak Forward Current vs. Duty Ratio

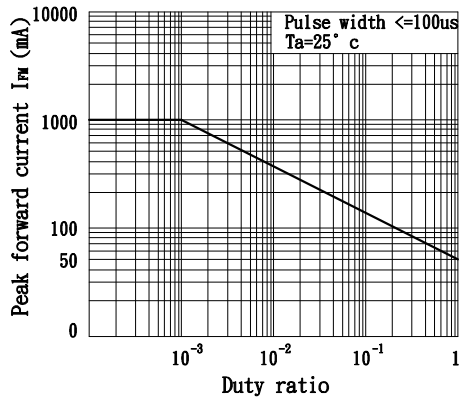


Fig.4 Forward Current vs. Forward Voltage

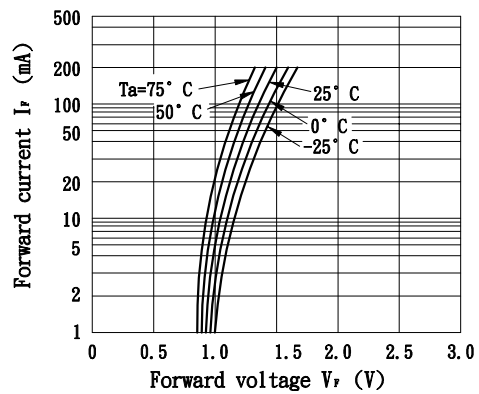


Fig.5 Current Transfer Ratio vs. Forward Current

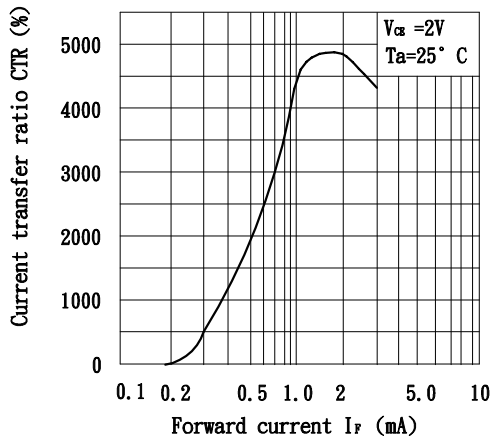
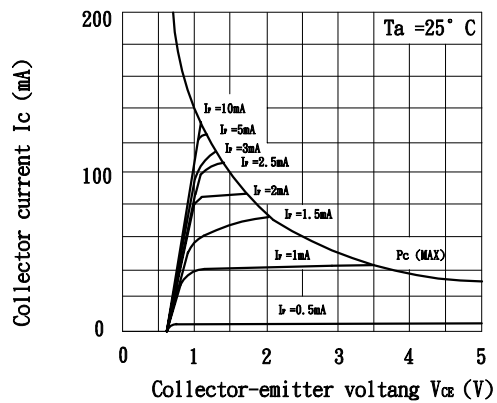


Fig.6 Collector Current vs. Collector-emitter Voltage



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Fig. 7 Relative Current Transfer Ratio vs. Ambient Temperature

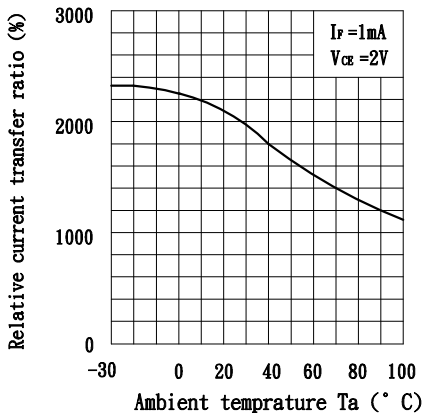


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

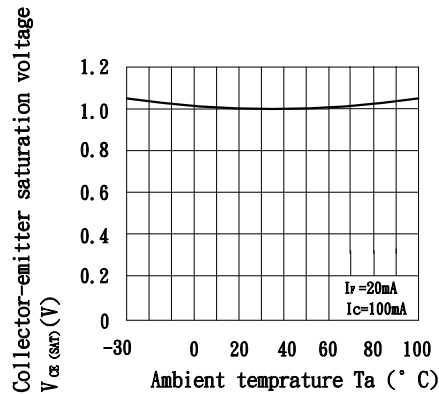


Fig. 9 Collector Dark Current vs. Ambient Temperature

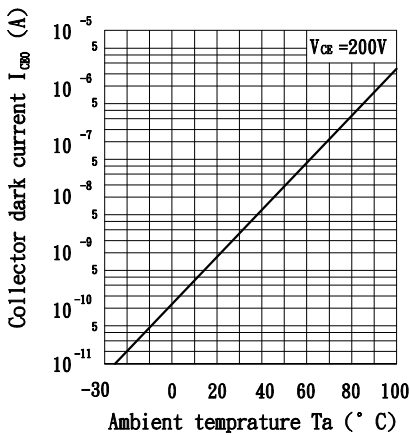


Fig. 10 Response Time vs. Load Resistance

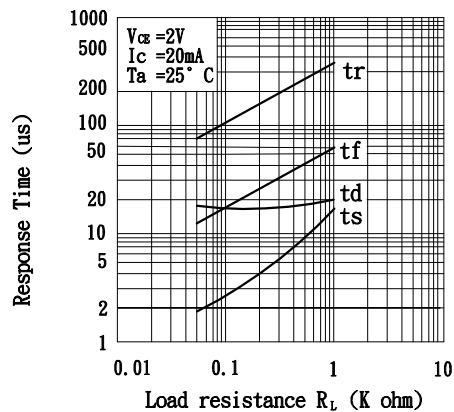


Fig. 11 Frequency Response

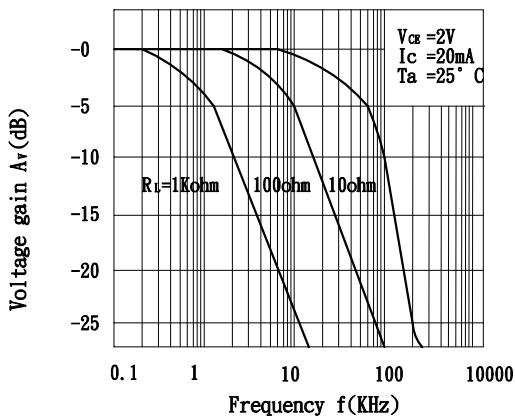


Fig. 12 Collector-emitter Saturation Voltage vs. Forward current

