

PRODUCT SPECIFICATION

DATE: 03/17/2003

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|---|-----------------------------------|--------------|------|
| COSMO ELECTRONICS CORPORATION | Photocoupler : KTLP161G | NO. 61P44002 | REV. |
| | | SHEET 1 OF 6 | 1 |

Mini-flat package Zero Crossing Optoisolators Triac Driver Output (400V Volts Peak)

● Features

1. Opaque type, mini-flat package.
2. Subminiature type

(The volume is smaller than that of our conventional DIP type by as far as 30%)
4. Isolation voltage between input and output (Viso:2500Vrms).

● For 115/240 Vac(rms) Application:

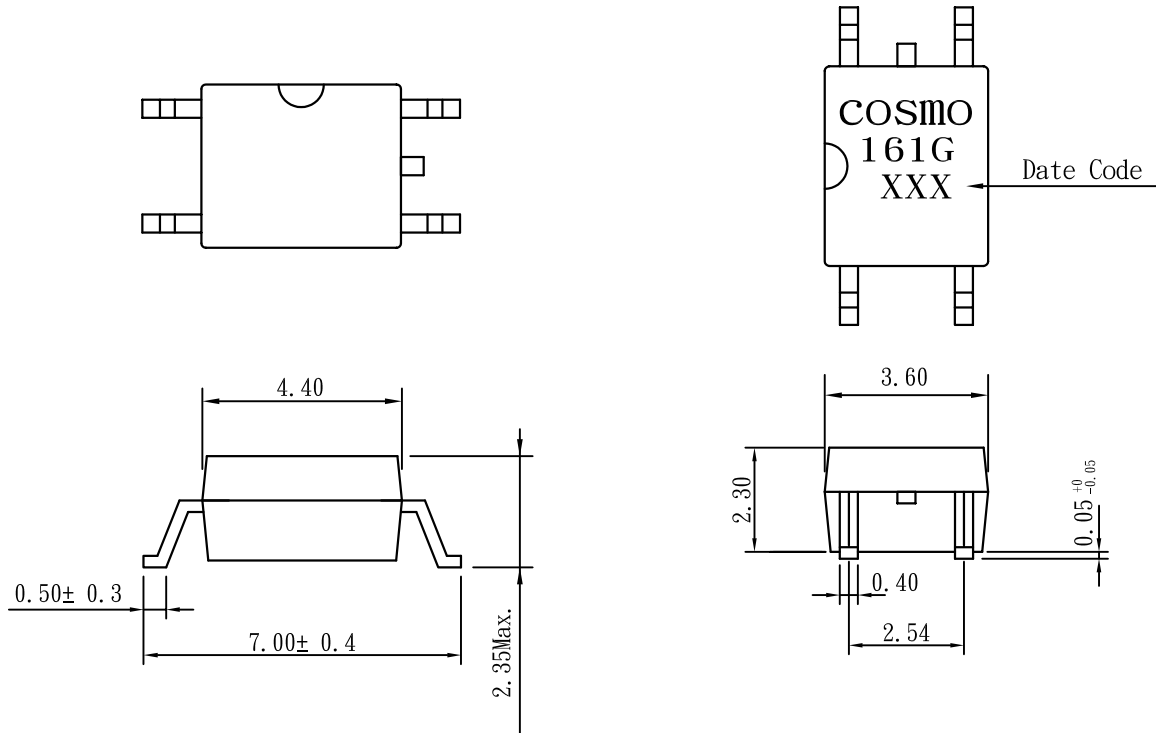
1. Solenoid/Valve Controls.
2. Lighting Controls.
3. Static Power Switches.
4. AC Motor Drives.
5. Temperature Controls.
6. E. M. Contactors.
7. AC Motor Staters.
8. Solid State Relays.
9. Programmable controllers.

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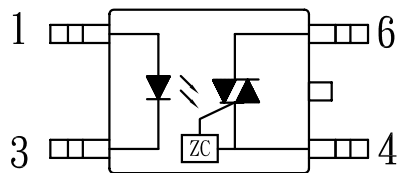
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|---|-----------------------------------|--------------|------|
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| | | SHEET 2 OF 6 | 1 |

1. OUTSIDE DIMENSION : UNIT(mm)



TOLERANCE : ± 0.2mm

2. SCHEMATIC : TOP VIEW



1. Anode
3. Cathode
4. MAIN TERMINAL
6. MAIN TERMINAL

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| | | SHEET 3 OF 6 | 1 |

• Absolute Maximum Ratings

(Ta=25° C)

| | Parameter | Symbol | Rating | Unit |
|--------|--|---------|-------------|-------|
| Input | Forward current | IF | 50 | mA |
| | Peak forward current(100us) | IFM | 1 | A |
| | Reverse voltage | VR | 6 | V |
| | Power dissipation | PD | 70 | mW |
| Output | Off-State Output Terminal voltage | VDRM | 400 | Vpeak |
| | On-State R. M. S. Current | IT(RMS) | 70 | mA |
| | Peak Repetitive Surget Current(PW=10ms.DC 10%) | ITSM | 1 | A |
| | Power Dissipation | PD | 150 | mW |
| | Total power dissipation | Ptot | 200 | mW |
| | Isolation voltage 1 minute | Viso | 2500 | Vrms |
| | Operating temperature | Topr | -40 to +100 | ° C |
| | Storage temperature | Tstg | -50 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 |
| | Peak forward voltage | VFM | IFM=0.5A | - | - | 3.5 | V |
| | Reverse Leakage Current | IR | VR=5V | - | - | 10 | uA |
| Output | Peak Blocking Current | IDRM | VDRM=400V | - | - | 1.0 | uA |
| | ON-State Voltage | VTM | ITM=70mA | - | 1.6 | 2.8 | V |
| Transfer characteristics | Holding Current | IH | | - | 1.0 | - | mA |
| | Critical rate of rise of OFF-state voltage | dV/dt | VDRM=(1/√2)*Rated | 100 | - | - | V/uS |
| | Isolation resistance | Riso | DC500V | 5x10 ¹⁰ | 10 ¹¹ | - | ohm |
| | Minimum trigger current | IFT | Main Terminal Voltage=3V | - | 5 | 10 | mA |
| | Inhibit Voltage(MT1-MT2 Voltage above which device not trigger.) | VINH | IF=Rated IFT | - | 5 | 20 | V |
| | Leakage in Inhibited State | IDRM2 | IF=Rated IFT, VT=Rated VDRM | | - | 600 | uA |

Classification table of Trigger LED current is shown below.

(Ta=25° C)

| Classification | Trigger LED Current (mA) | |
|----------------|--------------------------|------|
| | Min. | Max. |
| 1 (Standard) | - | 10 |
| 2 | - | 7 |
| 3 | - | 5 |

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| | | SHEET 4 OF 6 | 1 |

Fig.1 Forward Current vs. Ambient Temperature

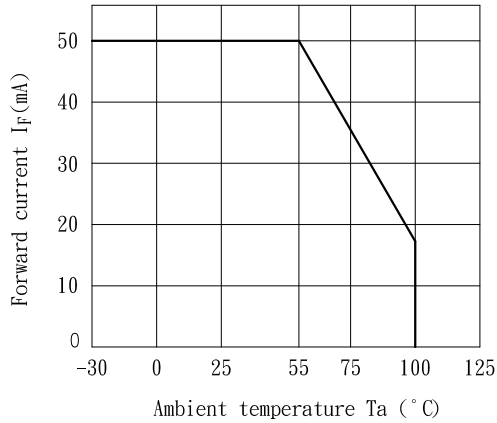


Fig.2 Diode Power Dissipation vs. Ambient Temperature

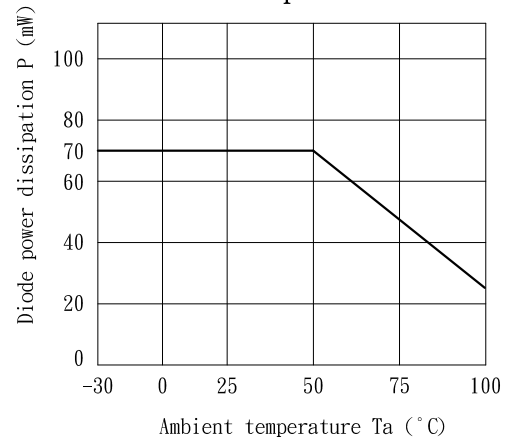


Fig.3 On-State R. M. S. Current vs. Ambient Temperature

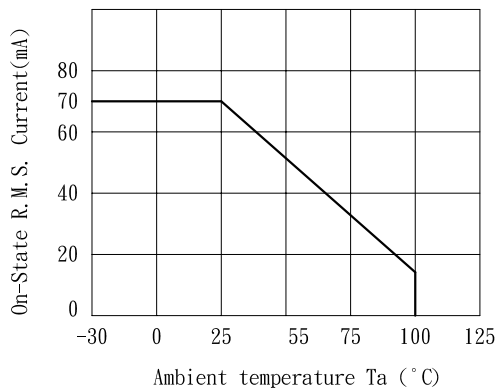


Fig.4 Total Power Dissipation vs. Ambient Temperature

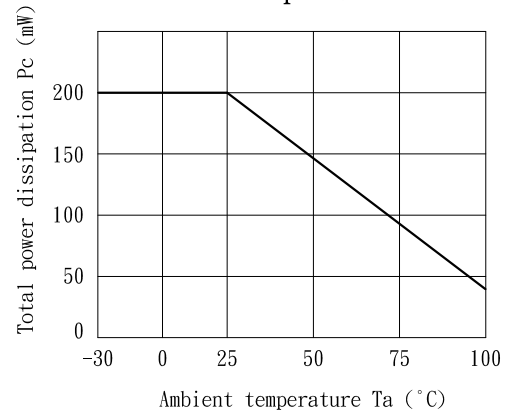


Fig.5 Peak Forward Current vs. Duty Ratio

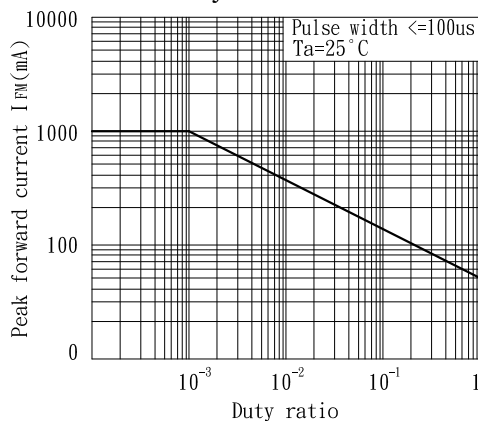
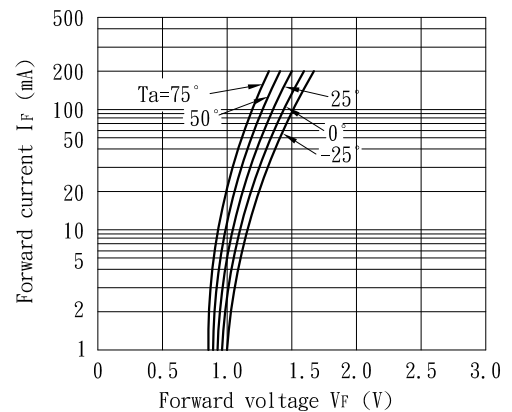


Fig.6 Forward Current vs. Forward Voltage



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| | | | |
|---|-----------------------------------|--------------|------|
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| | | SHEET 5 OF 6 | 1 |

Fig. 7 On-State Characteristics

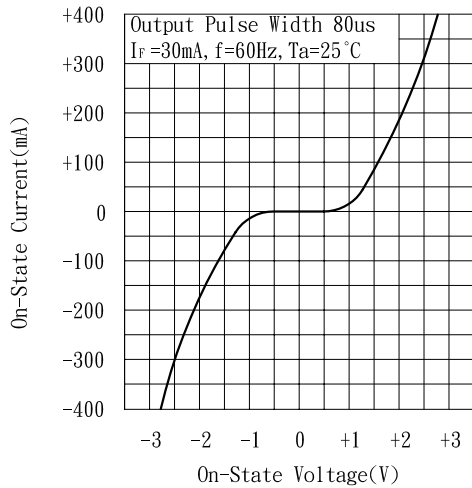


Fig. 8 Leakage with LED off vs. Ambient Temperature

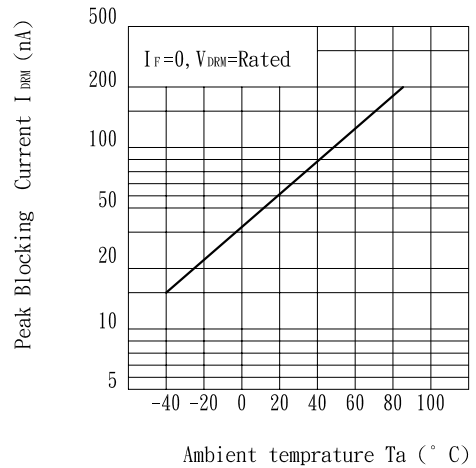


Fig. 9 Trigger Current vs. Ambient Temperature

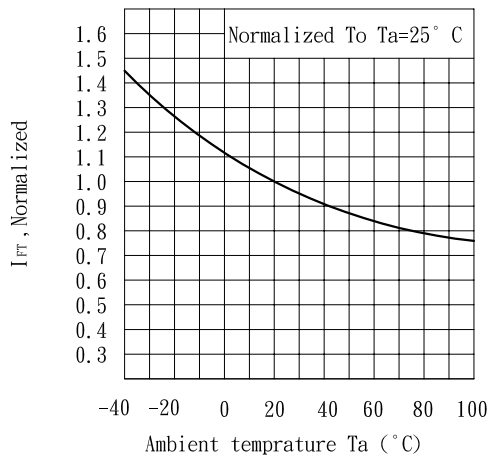


Fig. 10 Inhibit Voltage vs. Ambient Temperature

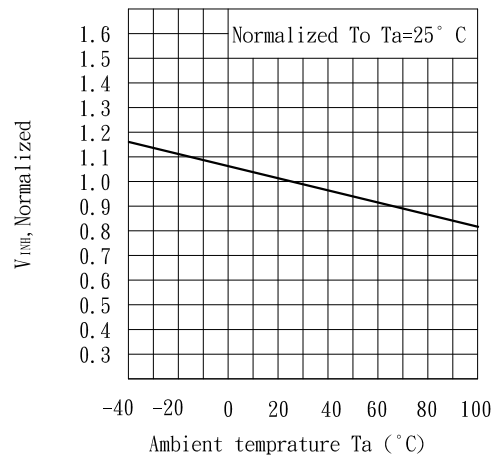
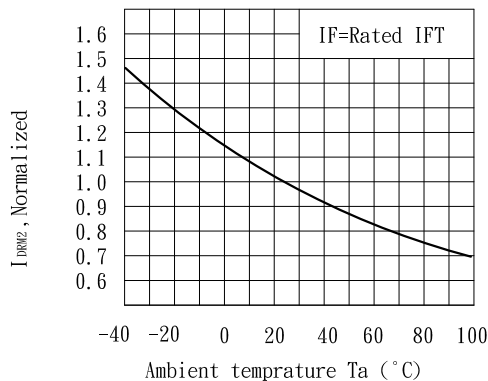


Fig. 11 I_{DRM2} , Leakage in Inhibit vs. Ambient Temperature



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