

PRODUCT SPECIFICATION

DATE : 01/04/2013

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|---|-----------------------------------|--------------|------|
| cosmo ELECTRONICS CORPORATION | Photocoupler : KTLP161J | NO. 61P44001 | REV. |
| | | SHEET 1 OF 6 | 4 |

Mini-flat package Zero Crossing Optoisolators Triac Drive Output (600V Volts Peak)

● Features

1. Pb free and RoHS compliant.
2. Opaque type,mini-flat package.
3. 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 : 3750Vrms).
5. Safety Approval :
UL approved : UL1577 , No.E169586
CUL approved : C22.2 No.1 & NTC No.5 , No.E169586
VDE approved : EN60747-5-2 , No.40009235
CQC approved : GB8898 / GB4943
CQC10001049555 、 CQC08001022986

● Application :

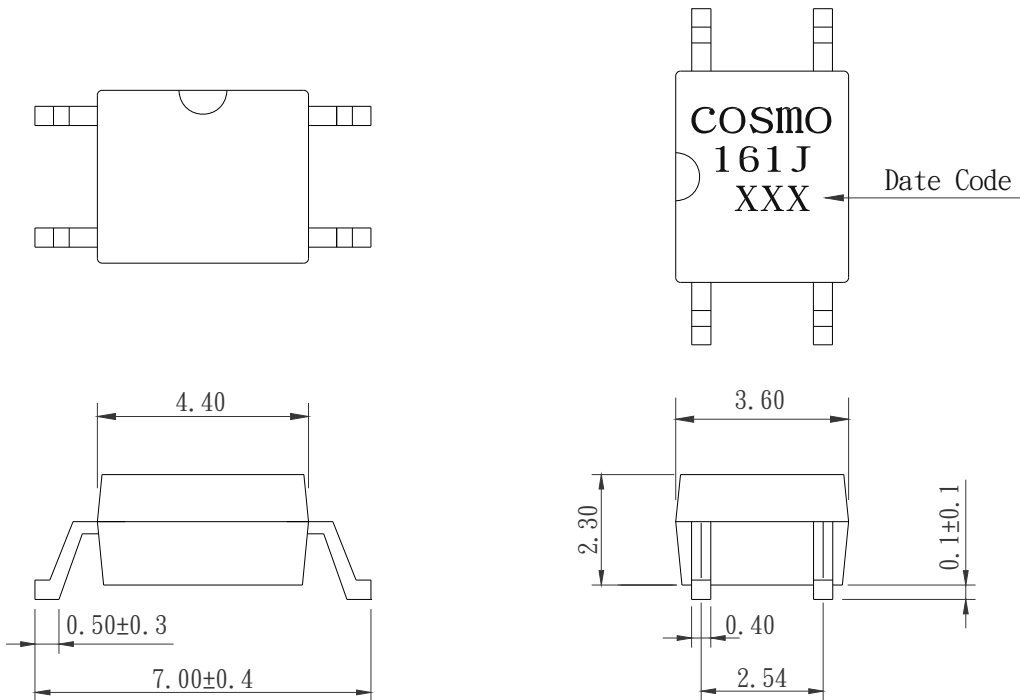
1. Solenoid/Valve Controls.
2. Lighting Controls.
3. Static Power Switches.
4. AC Motor Drives.
5. Temperature Controls.
6. E.M. Contactors.
7. AC Motor Staters.
8. Solid State Relays.
9. Programmable controllers.

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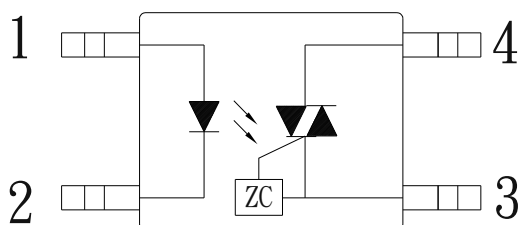
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| | | SHEET 2 OF 6 | |

● Outside dimension : Unit (mm)



Tolerance : ±0.2mm

● Schematic : Top View



- 1. Anode
- 2. Cathode
- 3. MAIN TERMINAL
- 4. MAIN TERMINAL

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| | | SHEET 3 OF 6 | |

● Absolute Maximum Ratings

| Parameter | | Symbol | Rating | Unit |
|---------------------------------|---|--------------|-------------|-----------|
| Input | Forward current | I_F | 50 | mA |
| | Peak forward current (100us) | I_{FP} | 1 | A |
| | Reverse voltage | V_R | 6 | V |
| | Power dissipation | P_D | 70 | mW |
| Output | Off-State Output Terminal voltage | V_{DRM} | 600 | V |
| | On-State R.M.S. Current | $I_{T(RMS)}$ | 70 | mA |
| | Peak Repetitive Surget Current (PW=10ms.DC 10%) | I_{TSM} | 1 | A |
| | Power dissipation | P_D | 150 | mW |
| Total power dissipation | | P_{tot} | 200 | mW |
| Isolation voltage 1 minute | | V_{iso} | 3750 | V_{rms} |
| Operating temperature | | T_{opr} | -40 to +115 | °C |
| Storage temperature | | T_{stg} | -50 to +125 | °C |
| Soldering temperature 10 second | | T_{sol} | 260 | °C |

● Electro-optical Characteristics

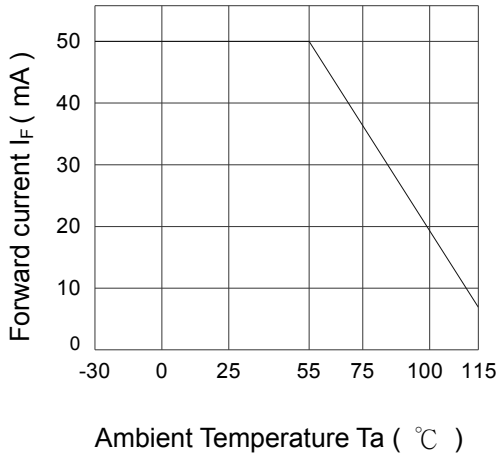
| Parameter | | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|----------------------------|--|------------|---|--------------------|-----------|------|-----------|
| Input | Forward voltage | V_F | $I_F = 10mA$ | - | 1.2 | 1.4 | V |
| | Peak forward voltage | V_{FM} | $I_{FM} = 0.5A$ | - | - | 3.5 | V |
| | Reverse current | I_R | $V_R = 5V$ | - | - | 10 | μA |
| Output | Peak Blocking Current | I_{DRM} | $V_{DRM} = 600V$ | - | - | 1.0 | μA |
| | On-State Voltage | V_{TM} | $I_{TM} = 70mA$ | - | 1.6 | 2.8 | V |
| Transfer characteristics | Holding Current | I_H | | - | 1.0 | | mA |
| | Critical rate of rise of Off-state voltage | dV/dt | $V_{DRM} = (1/\sqrt{2}) \cdot \text{Rated}$ | 100 | - | - | $V/\mu s$ |
| | Isolation resistance | R_{iso} | DC500V | 5×10^{10} | 10^{11} | - | Ω |
| | Minimum trigger current | I_{FT} | Main Terminal Voltage=3V | - | 5 | 10 | mA |
| | Inhibit voltage (MT1-MT2 Voltage above which device not trigger) | V_{INH} | $I_F = \text{Rated } I_{FT}$ | - | 5 | 20 | V |
| Leakage in Inhibited State | | I_{DRM2} | $I_F = \text{Rated } I_{FT}, \text{ Rated } V_{DRM}, \text{ Off State}$ | - | - | 600 | μA |

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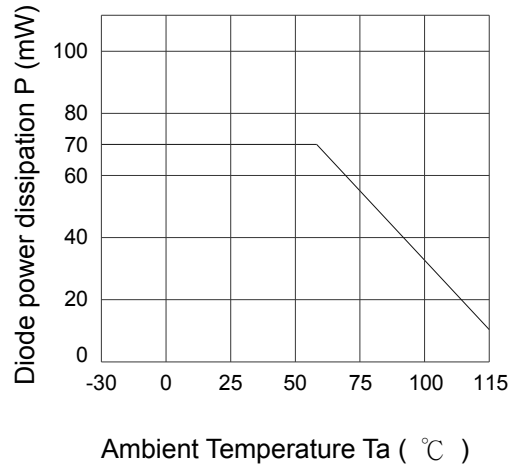
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| cosmo ELECTRONICS CORPORATION | Photocoupler : | NO. 61P44001 | REV. 4 |
| | KTLP161J | SHEET 4 OF 6 | |

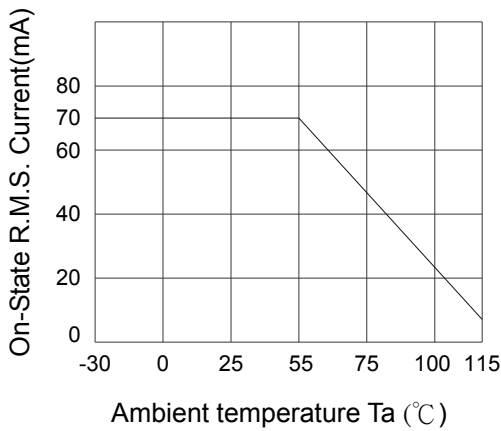
Forward Current vs. Ambient Temperature



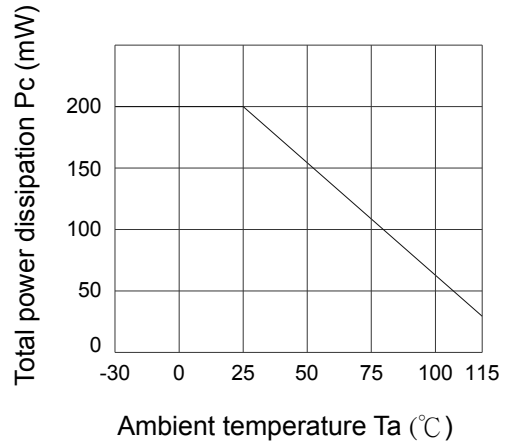
Diode Power Dissipation vs. Ambient Temperature



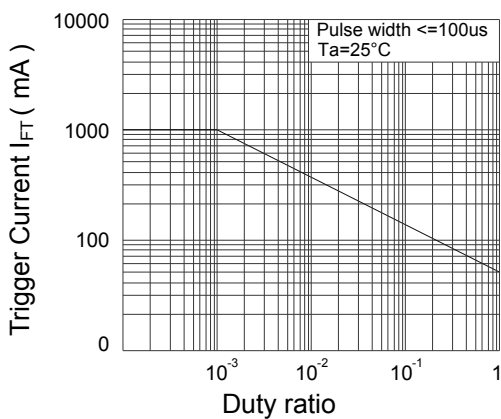
On-State R.M.S. Current vs. Ambient Temperature



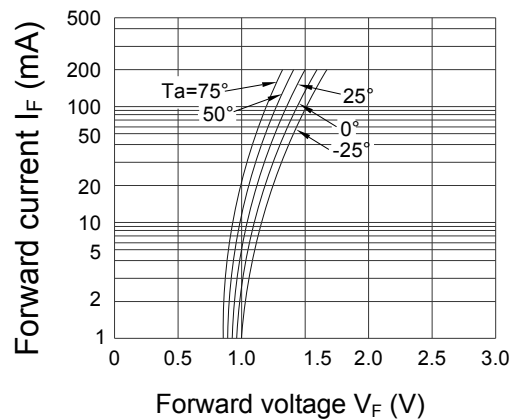
Total Power Dissipation vs. Ambient Temperature



Peak Forward Current vs. Duty Ratio



Forward Current vs. Forward Voltage

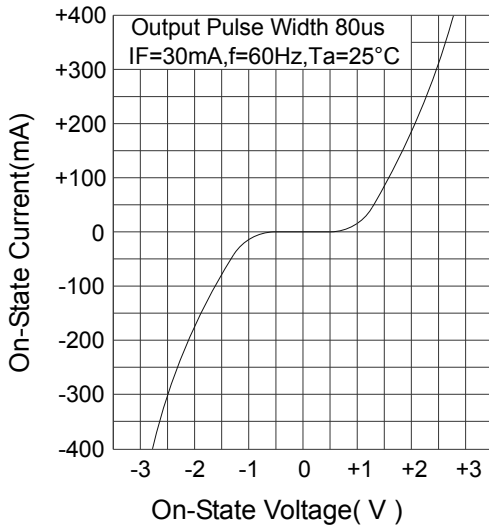


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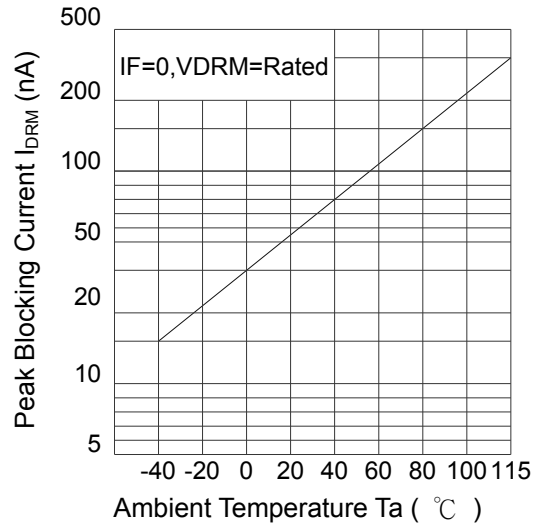
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| cosmo ELECTRONICS CORPORATION | Photocoupler : | NO. 61P44001 | REV. 4 |
| | KTLP161J | SHEET 5 OF 6 | |

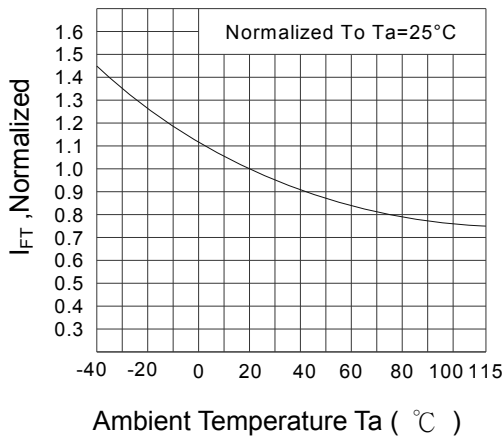
On-State Characteristics



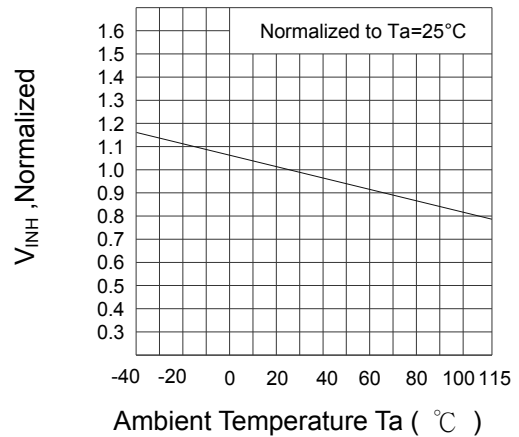
Leakage with LED off vs. Ambient Temperature



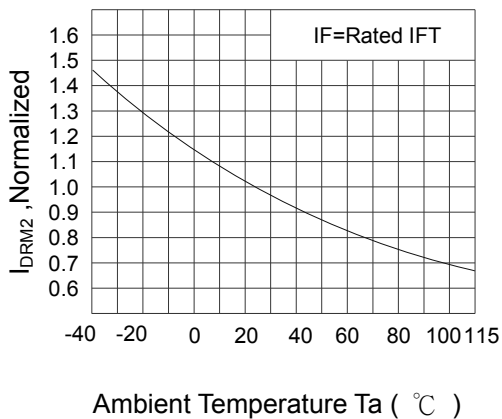
Trigger Current vs. Ambient Temperature



Inhibit Voltage vs. Ambient Temperature



IDRM2 ,Leakage in Inhibit vs. Ambient Temperature



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| | | SHEET 6 OF 6 | 4 |

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