**APPROVALS**
- UL recognised, File No. E91231 under Package System 'KK'

**'X' SPECIFICATION APPROVALS**
- VDE 0884 in 3 available lead forms : -
  - STD
  - G form
  - SMD approved to CECC 00802

**DESCRIPTION**
The MOC302_ series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package.

**FEATURE**
- Options :
  - 10mm lead spread - add G after part no.
  - Surface mount - add SM after part no.
  - Tape&reel - add SMT&R after part no.
- High Isolation Voltage \(5.3\text{KV}_{\text{RMS}},7.5\text{KV}_{\text{PK}}\)
- 400V Peak Blocking Voltage
- All electrical parameters 100% tested
- Custom electrical selections available

**APPLICATIONS**
- CRTs
- Power Triac Driver
- Motors
- Consumer appliances
- Printers

**ABSOLUTE MAXIMUM RATINGS**
(25°C unless otherwise noted)
- Storage Temperature \(-55°C\)\(\pm 150°C\)
- Operating Temperature \(-40°C\)\(\pm 100°C\)
- Lead Soldering Temperature \(260°C\)
  
  (1.6mm from case for 10 seconds)

**INPUT DIODE**
- Forward Current \(50\text{mA}\)
- Reverse Voltage \(6\text{V}\)
- Power Dissipation \(70\text{mW}\)
  
  (derate linearly 0.93mW/°C above 25°C)

**OUTPUT PHOTO TRIAC**
- Off-State Output Terminal Voltage \(400\text{V}\)
- Forward Current (Peak) \(1\text{A}\)
- Power Dissipation \(300\text{mW}\)
  
  (derate linearly 4.0mW/°C above 25°C)

**POWER DISSIPATION**
- Total Power Dissipation \(330\text{mW}\)
  
  (derate linearly 4.4mW/°C above 25°C)
### ELECTRICAL CHARACTERISTICS (\( T_a = 25^\circ C \) Unless otherwise noted)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>MIN</th>
<th>TYP</th>
<th>MAX</th>
<th>UNITS</th>
<th>TEST CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward Voltage ( (V_F) )</td>
<td>1.2</td>
<td>1.5</td>
<td>V</td>
<td></td>
<td>( I_F = 10mA ) ( V_R = 6V )</td>
</tr>
<tr>
<td>Reverse Current ( (I_R) )</td>
<td>100</td>
<td></td>
<td>μA</td>
<td></td>
<td></td>
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<tr>
<td><strong>Output</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Off-state Current ( (I_{DRM}) )</td>
<td>100</td>
<td></td>
<td>nA</td>
<td></td>
<td>( V_{DRM} = 400V ) ( I_{DRM} = 100nA )</td>
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<tr>
<td>Peak Blocking Voltage ( (V_{DRM}) )</td>
<td>400</td>
<td></td>
<td>3.0</td>
<td>V</td>
<td>( I_{TM} = 100mA ) ( peak )</td>
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<tr>
<td>On-state Voltage ( (V_{TM}) )</td>
<td>1.5</td>
<td></td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical rate of rise of off-state Voltage ( (dv/dt) ) ( note 1 )</td>
<td>10</td>
<td></td>
<td>V/μs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical rate of rise of commutating Voltage ( (dv/dt) ) ( note 1 )</td>
<td>0.1</td>
<td>0.2</td>
<td>V/μs</td>
<td></td>
<td>( I_{load} = 15mA, \ V_{IN} = 30V ) ( fig 1. )</td>
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<tr>
<td><strong>Coupled</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Input Current to Trigger ( (I_{FT}) ) ( note 2 )</td>
<td>30</td>
<td></td>
<td>mA</td>
<td></td>
<td>( V_O = 3V ) ( note 2 )</td>
</tr>
<tr>
<td>MOC3020</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>MOC3021</td>
<td>15</td>
<td></td>
<td>mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOC3022</td>
<td>10</td>
<td></td>
<td>mA</td>
<td></td>
<td></td>
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<tr>
<td>MOC3023</td>
<td>5</td>
<td></td>
<td>mA</td>
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<td></td>
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<tr>
<td>Holding Current, either direction ( (I_H) )</td>
<td>100</td>
<td></td>
<td>μA</td>
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</tr>
<tr>
<td>Input to Output Isolation Voltage ( V_{ISO} )</td>
<td>5300</td>
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<td>V_{rms}</td>
<td>See note 3</td>
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<tr>
<td>7500</td>
<td></td>
<td></td>
<td>V_{pk}</td>
<td>See note 3</td>
<td></td>
</tr>
</tbody>
</table>

**Note 1.** Test voltage must be applied within \( dv/dt \) rating.  
**Note 2.** Guaranteed to trigger at an \( I_F \) value less than or equal to max. \( I_{FT} \), recommended \( I_F \) lies between Rated \( I_{FT} \) and absolute max. \( I_{FT} \).  
**Note 3.** Measured with input leads shorted together and output leads shorted together.

**FIGURE 1**

![FIGURE 1](image-url)