Description

The EG01 is a fast recovery diode of 400 V / 0.7 A. The maximum $t_{rr}$ of 100 ns is realized by optimizing a life-time control.

Features

- $V_{RM} = 400$ V
- $I_{F(AV)} = 0.7$ A
- $V_F = 2.0$ V
- $t_{rr} = 100$ ns
- Bare Leads: Pb-free (RoHS Compliant)

Applications

- Secondary Side Rectifier Diode
  (Flyback Converter, LLC Converter, etc.)
- Freewheel Diode
  (Offline Buck and Buck-boost Converter)

Package

Axial ($\phi 2.7 \times 5.0L / \phi 0.6$)

Cathode Mark

(1) Cathode
(2) Anode

Not to scale
Absolute Maximum Ratings

Unless otherwise specified, \( T_A = 25 \, ^\circ\text{C} \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Rating</th>
<th>Unit</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Repetitive Reverse Voltage</td>
<td>( V_{RSM} )</td>
<td>400</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Repetitive Reverse Voltage</td>
<td>( V_{RM} )</td>
<td>400</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Average Forward Current</td>
<td>( I_{F(AV)} )</td>
<td>0.7</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Surge Forward Current</td>
<td>( I_{FSM} )</td>
<td>15</td>
<td>A</td>
<td>Half cycle sine wave, positive side, 10 ms, 1 shot</td>
</tr>
<tr>
<td>( t ) Limiting Value</td>
<td>( t^1 )</td>
<td>1.1</td>
<td>( \text{A}^2 \text{s} )</td>
<td>1 ms ( \leq t \leq 10 \text{ ms} )</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>( T_J )</td>
<td>-40 to 150</td>
<td>( ^\circ\text{C} )</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>( T_{STG} )</td>
<td>-40 to 150</td>
<td>( ^\circ\text{C} )</td>
<td></td>
</tr>
</tbody>
</table>

Electrical Characteristics

Unless otherwise specified, \( T_A = 25 \, ^\circ\text{C} \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Voltage Drop</td>
<td>( V_F )</td>
<td>( T_J = 25 , ^\circ\text{C}, , I_F = 0.7 , \text{A} )</td>
<td>—</td>
<td>—</td>
<td>2.0</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>( T_J = 100 , ^\circ\text{C}, , I_F = 0.7 , \text{A} )</td>
<td>—</td>
<td>1.0</td>
<td>—</td>
<td>V</td>
</tr>
<tr>
<td>Reverse Leakage Current</td>
<td>( I_R )</td>
<td>( V_R = V_{RM} )</td>
<td>—</td>
<td>—</td>
<td>50</td>
<td>( \mu\text{A} )</td>
</tr>
<tr>
<td>Reverse Leakage Current Under High Temperature</td>
<td>( H \cdot I_R )</td>
<td>( V_R = V_{RM}, , T_J = 100 , ^\circ\text{C} )</td>
<td>—</td>
<td>—</td>
<td>300</td>
<td>( \mu\text{A} )</td>
</tr>
<tr>
<td>Reverse Recovery Time</td>
<td>( I_{r1} )</td>
<td>( I_F = I_{RP} = 100 , \text{mA}, , 90% ) recovery point, ( T_J = 25 , ^\circ\text{C} )</td>
<td>—</td>
<td>—</td>
<td>100</td>
<td>ns</td>
</tr>
<tr>
<td></td>
<td>( I_{r2} )</td>
<td>( I_F = 100 , \text{mA}, , I_{RP} = 200 , \text{mA}, , 75% ) recovery point, ( T_J = 25 , ^\circ\text{C} )</td>
<td>—</td>
<td>—</td>
<td>50</td>
<td>ns</td>
</tr>
<tr>
<td>Thermal Resistance(^{(1)})</td>
<td>( R_{th(J-L)} )</td>
<td>See Figure 1</td>
<td>—</td>
<td>—</td>
<td>20</td>
<td>( ^\circ\text{C}/\text{W} )</td>
</tr>
</tbody>
</table>

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\(^{(1)}\) \( R_{th(J-L)} \) is thermal resistance between junction and lead.

Figure 1  Lead Temperature Measurement Conditions
Rating and Characteristic Curves

Figure 2. $I_{\text{RMS}}$ vs. $T_L$ Typical Characteristics$^{(2)}$ ($V_R = 0$ V)

Figure 3. $I_{\text{RMS}}$ vs. $T_L$ Typical Characteristics$^{(2)}$ ($V_R = 400$ V)

Figure 4. $V_F$ vs. $I_F$ Typical Characteristics

Figure 5. $V_R$ vs. $I_R$ Typical Characteristics

$^{(2)}$ See Figure 1 for the lead temperature measurement conditions.
Physical Dimensions

- Axial (φ2.7 × 5.0L / φ0.6)

NOTES:
- Dimensions in millimeters
- Bare leads: Pb-free (RoHS compliant)
- When soldering the products, it is required to minimize the working time, within the following limits:
  Flow: 260 ± 5 °C / 10 ± 1 s, 2 times
  Soldering Iron: 380 ± 10 °C / 3.5 ± 0.5 s, 1 time (Soldering should be at a distance of at least 1.5 mm from the body of the product.)

Marking Diagram

Table 1. Specific Device Code

<table>
<thead>
<tr>
<th>Specific Device Code</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>G0</td>
<td>EG01</td>
</tr>
</tbody>
</table>
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