Description

The EG1A is a fast recovery diode of 600 V / 0.6 A. The maximum $t_r$ of 100 ns is realized by optimizing a life-time control.

Features

- $V_{RM} = 600 \text{ V}$
- $I_{F(AV)} = 0.6 \text{ A}$
- $V_{F} = 2.0 \text{ V}$
- $t_{rr} = 100 \text{ ns}$
- 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 ($\varphi 2.7 \times 5.0L / \varphi 0.78$)

Cathode Mark

(1) (2)

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>600</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Repetitive Reverse Voltage</td>
<td>$V_{RM}$</td>
<td>600</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Average Forward Current</td>
<td>$I_{F(AV)}$</td>
<td>0.6</td>
<td>A</td>
<td>See Figure 2 and Figure 3</td>
</tr>
<tr>
<td>Surge Forward Current</td>
<td>$I_{FSM}$</td>
<td>10</td>
<td>A</td>
<td>Half cycle sine wave, positive side, 10 ms, 1 shot</td>
</tr>
<tr>
<td>$I^t$ Limiting Value</td>
<td>$I^t$</td>
<td>0.5</td>
<td>A$^2$s</td>
<td>1 ms $\leq t \leq$ 10 ms</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>$T_J$</td>
<td>-40 to 150</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>$T_{STG}$</td>
<td>-40 to 150</td>
<td>°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>$T_J = 25 , ^\circ\text{C}$, $I_F = 0.6 , \text{A}$</td>
<td>—</td>
<td>—</td>
<td>2.0</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$T_J = 100 , ^\circ\text{C}$, $I_F = 0.6 , \text{A}$</td>
<td>—</td>
<td>1.1</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>100</td>
<td>$\mu\text{A}$</td>
</tr>
<tr>
<td>Reverse Leakage Current Under High Temperature</td>
<td>$I_H R$</td>
<td>$V_R = V_{RM}$, $T_J = 100 , ^\circ\text{C}$</td>
<td>—</td>
<td>—</td>
<td>500</td>
<td>$\mu\text{A}$</td>
</tr>
<tr>
<td>Reverse Recovery Time</td>
<td>$t_{rr1}$</td>
<td>$I_F = I_{RP} = 10 , \text{mA}$, 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>$t_{rr2}$</td>
<td>$I_F = 10 , \text{mA}$, $I_{RP} = 20 , \text{mA}$, 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>$R_{sh(J-L)}$</td>
<td>See Figure 1</td>
<td>—</td>
<td>—</td>
<td>17</td>
<td>°C/W</td>
</tr>
</tbody>
</table>

![Figure 1](https://example.com/figure1.png)

**Figure 1** Lead Temperature Measurement Conditions

(1)$R_{sh(J-L)}$ is thermal resistance between junction and lead.
Rating and Characteristic Curves

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

Figure 3. \( I_{\text{F(AV)}} \) vs. \( T_L \) Typical Characteristics\(^{(2)} \) (\( V_R = 600 \text{ V} \))

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 / φ0.78)

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>G1A</td>
<td>EG1A</td>
</tr>
</tbody>
</table>
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