GENERAL DESCRIPTION

Glass-passivated double diffused rectifier diode in a plastic envelope featuring low forward voltage drop, fast reverse recovery and soft recovery characteristic. The device is intended for use in TV receivers, series resonant switched mode power supplies and other high voltage circuits.

LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134).

THERMAL RESISTANCES

1 Neglecting switching and reverse current losses.
**STATIC CHARACTERISTICS**

\( T_j = 25 ^\circ C \) unless otherwise stated

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>PARAMETER</th>
<th>CONDITIONS</th>
<th>MIN.</th>
<th>TYP.</th>
<th>MAX.</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>( V_F )</td>
<td>Forward voltage</td>
<td>( I_F = 20 \ A )</td>
<td>-</td>
<td>1.3</td>
<td>1.8</td>
<td>V</td>
</tr>
<tr>
<td>( I_F )</td>
<td></td>
<td>( I_F = 10 \ A; T_j = 150 ^\circ C )</td>
<td>-</td>
<td>1.00</td>
<td>1.5</td>
<td>V</td>
</tr>
<tr>
<td>( I_R )</td>
<td>Reverse current</td>
<td>( V_R = 1300 \ V )</td>
<td>-</td>
<td>10</td>
<td>100</td>
<td>( \mu A )</td>
</tr>
<tr>
<td>( I_R )</td>
<td></td>
<td>( V_R = 1300 \ V; T_j = 100 ^\circ C )</td>
<td>-</td>
<td>50</td>
<td>300</td>
<td>( \mu A )</td>
</tr>
</tbody>
</table>

**DYNAMIC CHARACTERISTICS**

\( T_j = 25 ^\circ C \) unless otherwise stated

<table>
<thead>
<tr>
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<th>CONDITIONS</th>
<th>MIN.</th>
<th>TYP.</th>
<th>MAX.</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>( t_{rr} )</td>
<td>Reverse recovery time</td>
<td>( I_F = 2 \ A; V_R \geq 30 \ V; -dI/F/dt = 20 \ A/\mu s )</td>
<td>-</td>
<td>0.47</td>
<td>0.6</td>
<td>( \mu s )</td>
</tr>
<tr>
<td>( Q_s )</td>
<td>Reverse recovery charge</td>
<td>( I_F = 2 \ A; V_R \geq 30 \ V; -dI_F/dt = 20 \ A/\mu s )</td>
<td>-</td>
<td>1.6</td>
<td>2.0</td>
<td>( \mu C )</td>
</tr>
<tr>
<td>( V_{fr} )</td>
<td>Peak forward recovery voltage</td>
<td>( I_F = 10 \ A; dI/F/dt = 30 \ A/\mu s )</td>
<td>-</td>
<td>11.0</td>
<td>-</td>
<td>V</td>
</tr>
</tbody>
</table>

Fig.1. Definition of \( t_{rr} \), \( Q_s \) and \( I_{rrm} \)

Fig.2. Definition of \( V_{fr} \)

Fig.3. Maximum forward dissipation \( P_F = f(I_F(AV)) \);
square wave where \( I_F(AV) = I_F(RMS) \times \sqrt{D} \).

Fig.4. Maximum forward dissipation \( P_F = f(I_F(AV)) \);
sinusoidal current waveform where \( a = form factor = I_F(RMS)/I_F(AV) \).
Rectifier diode
fast, high-voltage

Fig. 5. Maximum non-repetitive rms forward current. $I_F = f(t_p)$; sinusoidal current waveform; $T_j = 150\,^\circ C$ prior to surge with reapplied $V_{RWM}$.

Fig. 6. Typical and maximum forward characteristic $I_F = f(V_F)$; parameter $T_j$.

Fig. 7. Maximum reverse recovery time $t_{rr} = f(\frac{dI_F}{dt})$; parameter $T_j$.

Fig. 8. Maximum reverse recovery charge $Q_s = f(\frac{dI_F}{dt})$; parameter $T_j$.

Fig. 9. Transient thermal impedance $Z_{th} = f(t_p)$.
MECHANICAL DATA

Dimensions in mm

Net Mass: 2 g

Fig.10. TO220AC; pin 1 connected to mounting base.

Notes
1. Accessories supplied on request: refer to mounting instructions for TO220 envelopes.
2. Epoxy meets UL94 V0 at 1/8".
DEFINITIONS

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<tr>
<td>Objective specification</td>
<td>This data sheet contains target or goal specifications for product development.</td>
</tr>
<tr>
<td>Preliminary specification</td>
<td>This data sheet contains preliminary data; supplementary data may be published later.</td>
</tr>
<tr>
<td>Product specification</td>
<td>This data sheet contains final product specifications.</td>
</tr>
</tbody>
</table>

Limiting values

Limiting values are given in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of this specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

Application information

Where application information is given, it is advisory and does not form part of the specification.

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