Surface-Mount Glass Passivated Ultrafast Rectifier

**FEATURES**
- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

**TYPICAL APPLICATIONS**
For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

**MECHANICAL DATA**
- Case: GL41 (DO-213AB), molded epoxy over glass body
- Molding compound meets UL 94 V-0 flammability rating
- Base P/N-E3 - RoHS-compliant, commercial grade
- Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
- E3 suffix meets JESD 201 class 1A whisker test
- Polarity: two bands indicate cathode end - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

**MAXIMUM RATINGS** (TA = 25 °C unless otherwise noted)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>BYM12-50</th>
<th>BYM12-100</th>
<th>BYM12-150</th>
<th>BYM12-200</th>
<th>BYM12-300</th>
<th>BYM12-400</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FAST EFFICIENT DEVICE:</strong></td>
<td><strong>SYMBOL</strong></td>
<td><strong>EGL41A</strong></td>
<td><strong>EGL41B</strong></td>
<td><strong>EGL41C</strong></td>
<td><strong>EGL41D</strong></td>
<td><strong>EGL41F</strong></td>
<td><strong>EGL41G</strong></td>
</tr>
<tr>
<td>Polarity color bands (2nd band)</td>
<td></td>
<td>Gray</td>
<td>Red</td>
<td>Pink</td>
<td>Orange</td>
<td>Brown</td>
<td>Yellow</td>
</tr>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>VRRM</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>Maximum RMS voltage</td>
<td>VRMS</td>
<td>35</td>
<td>70</td>
<td>105</td>
<td>140</td>
<td>210</td>
<td>280</td>
</tr>
<tr>
<td>Maximum DC blocking voltage</td>
<td>VDC</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>Maximum average forward rectified current at Ta = 75 °C</td>
<td>IF(AV)</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load</td>
<td>IFSM</td>
<td></td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating junction and storage temperature range</td>
<td>TJ, TSTG</td>
<td></td>
<td>-65 to +175</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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ELECTRICAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>TEST CONDITIONS</th>
<th>SYMBOL</th>
<th>BYM12-50</th>
<th>BYM12-100</th>
<th>BYM12-150</th>
<th>BYM12-200</th>
<th>BYM12-300</th>
<th>BYM12-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. instantaneous forward voltage</td>
<td>1.0 A</td>
<td>Vf (1)</td>
<td>1.0</td>
<td>1.25</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. DC reverse current at rated DC blocking voltage</td>
<td>TA = 25 °C</td>
<td>IR (1)</td>
<td>5.0</td>
<td>50</td>
<td>µA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. reverse recovery time</td>
<td>IR = 0.5 A, IR = 1.0 A, IR = 0.25 A</td>
<td>tr</td>
<td>50</td>
<td>ns</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical junction capacitance</td>
<td>4.0 V, 1 MHz</td>
<td>Cj</td>
<td>20</td>
<td>14</td>
<td>pF</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note
(1) Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>BYM12-50</th>
<th>BYM12-100</th>
<th>BYM12-150</th>
<th>BYM12-200</th>
<th>BYM12-300</th>
<th>BYM12-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum thermal resistance</td>
<td>RθJA (1)</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RθJT (2)</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes
(1) Thermal resistance from junction to ambient, 0.24" x 0.24" (6.0 mm x 6.0 mm) copper pads to each terminal
(2) Thermal resistance from junction to terminal, 0.24" x 0.24" (6.0 mm x 6.0 mm) copper pads to each terminal

ORDERING INFORMATION (Example)

<table>
<thead>
<tr>
<th>PREFERRED P/N</th>
<th>UNIT WEIGHT (g)</th>
<th>PREFERRED PACKAGE CODE</th>
<th>BASE QUANTITY</th>
<th>DELIVERY MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGL41D-E3/96</td>
<td>0.114</td>
<td>96</td>
<td>1500</td>
<td>7&quot; diameter plastic tape and reel</td>
</tr>
<tr>
<td>EGL41D-E3/97</td>
<td>0.114</td>
<td>97</td>
<td>5000</td>
<td>13&quot; diameter plastic tape and reel</td>
</tr>
</tbody>
</table>

RATINGS AND CHARACTERISTICS CURVES (TA = 25 °C unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve
Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current
Fig. 3 - Typical Instantaneous Forward Characteristics

Fig. 4 - Typical Reverse Leakage Characteristics

Fig. 5 - Typical Junction Capacitance

Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

GL41 (DO-213AB)

Solderable Ends

1st Band

D2 = D1 + 0.008 (0.20)

D1 = 0.105 (2.67) 0.095 (2.41) 0.238 (6.0) MIN.

0.049 (1.25) REF.

0.138 (3.5) MAX.

0.118 (3.0) MIN.

0.205 (5.2) 0.185 (4.7)

0.022 (0.56) 0.018 (0.46)

1st band denotes type and positive end (cathode)

Mounting Pad Layout

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