Fast Switching Plastic Rectifier

**FEATURES**
- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

**TYPICAL APPLICATIONS**
For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

**Note**
- These devices are not AEC-Q101 qualified.

**MECHANICAL DATA**
- Case: DO-204AL, molded epoxy 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: Color band denotes cathode end

**PRIMARY CHARACTERISTICS**
<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>1N4933</th>
<th>1N4934</th>
<th>1N4935</th>
<th>1N4936</th>
<th>1N4937</th>
</tr>
</thead>
<tbody>
<tr>
<td>I_{FAV}</td>
<td>V_{RRM}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
</tr>
<tr>
<td>V_{RMS}</td>
<td>V_{DC}</td>
<td>35</td>
<td>70</td>
<td>145</td>
<td>280</td>
<td>420</td>
</tr>
<tr>
<td>IFM</td>
<td>tr</td>
<td>200 ns</td>
<td>5.0 μA</td>
<td>1.2 V</td>
<td>150 °C</td>
<td></td>
</tr>
</tbody>
</table>

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

**ELECTRICAL CHARACTERISTICS** (T_A = 25 °C unless otherwise noted)
THERMAL CHARACTERISTICS \((T_A = 25 ^\circ C\) unless otherwise noted\)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>1N4933</th>
<th>1N4934</th>
<th>1N4935</th>
<th>1N4936</th>
<th>1N4937</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical thermal resistance</td>
<td>(R_{JA}^{(1)})</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C/W</td>
</tr>
<tr>
<td></td>
<td>(R_{JL}^{(1)})</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note

\(^{(1)}\) Thermal resistance from junction to ambient and from junction to lead at 0.375* (9.5 mm) lead length, P.C.B. mounted

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>1N4933-E3/54</td>
<td>0.33</td>
<td>54</td>
<td>5500</td>
<td>13’ diameter paper tape and reel</td>
</tr>
<tr>
<td>1N4933-E3/73</td>
<td>0.33</td>
<td>73</td>
<td>3000</td>
<td>Ammo pack packaging</td>
</tr>
</tbody>
</table>

RATINGS AND CHARACTERISTICS CURVES
\((T_A = 25 ^\circ C\) unless otherwise noted\)

Fig. 1 - Forward Current Derating Curves

Fig. 2 - Forward Power Loss Characteristics

Fig. 3 - Maximum Non-repetitive Peak Forward Surge Current

Fig. 4 - Typical Instantaneous Forward Characteristics
**Fig. 5 - Typical Reverse Characteristics**

- Instantaneous Reverse Current (μA) vs. Percent of Rated Peak Reverse Voltage (%)
- $T_J = 100 \degree C$
- $T_J = 25 \degree C$

**Fig. 6 - Typical Junction Capacitance**

- Junction Capacitance (pF) vs. Reverse Voltage (V)
- $T_J = 25 \degree C$
- $f = 1.0 \text{ MHz}$
- $V_{sig} = 50 \text{ mV}_{pp}$

**Fig. 7 - Typical Transient Thermal Impedance**

- Typical Thermal Impedance (°C/W) vs. $t$ - Pulse Duration (s)

### PACKAGE OUTLINE DIMENSIONS

**DO-204AL (DO-41)**

- DIA. 0.034 (0.86) MIN.
- DIA. 0.028 (0.71)
- MIN. 1.0 (25.4)
- MIN. 0.205 (5.2)
- MIN. 0.160 (4.1)
- MIN. 0.026 0.66
- MIN. 0.023 0.58

**Note**

- Lead diameter is 0.026 (0.66) for suffix “E” part numbers
- 0.023 (0.58)
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