BY500-50 THRU BY500-1000

SOFT RECOVERY FAST-SWITCHING PLASTIC RECTIFIERS
Reverse Voltage – 50 to 1000 V
Forward Current – 5 A

Features
• Plastic package has Underwriters Laboratory Flammability Classification 94V-0
• Fast switching for high efficiency
• Construction utilizes void-free molded plastic technique
• High surge current capability
• Especially designed for applications such as switch mode power supplies, inverters, converters, TV scanning, Ultrasonic-systems, speed controlled DC motors, low RF interference and free wheeling diode circuits

Mechanical Data
• Case: Molded plastic, DO-201AD
• Terminals: Plated axial leads, solderable per MIL-STD-202, method 208
• Polarity: Color band denotes cathode end
• Mounting Position: Any

Absolute Maximum Ratings and Characteristics
Ratings at 25°C unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbols</th>
<th>BY 500-50</th>
<th>BY 500-100</th>
<th>BY 500-200</th>
<th>BY 500-400</th>
<th>BY 500-600</th>
<th>BY 500-800</th>
<th>BY 500-1000</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Repetitive Peak Reverse Voltage</td>
<td>V_{PRM}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>V_{RMS}</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>V</td>
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<tr>
<td>Maximum DC Blocking Voltage</td>
<td>V_{DC}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Average Forward Rectified Current at T_{L} = 45°C</td>
<td>I_{F(AV)}</td>
<td>5</td>
<td></td>
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<td></td>
<td>A</td>
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<tr>
<td>Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method)</td>
<td>I_{FSM}</td>
<td>200</td>
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<td>A</td>
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<tr>
<td>Maximum in Stantaneous Forward Voltage at 5 A</td>
<td>V_{F}</td>
<td>1.35</td>
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<td>V</td>
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<tr>
<td>Maximum DC Reverse Current at Rated DC Blocking Voltage</td>
<td>I_{R}</td>
<td>10</td>
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<td></td>
<td>μA</td>
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<td>Maximum Reverse Recovery Time 1)</td>
<td>T_{rr}</td>
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<td>Typical Junction Capacitance 2)</td>
<td>C_{J}</td>
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<td>pF</td>
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<td>Typical Thermal Resistance 3)</td>
<td>R_{JUA}</td>
<td>22</td>
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<td></td>
<td></td>
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<td>°C/W</td>
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</tbody>
</table>

Operating and Storage Temperature Range T_{j}, T_{stag} - 50 to +125 °C

1) Reverse recovery test conditions: I_{F} = 0.5 A, I_{R} = 1 A, I_{r} = 0.25 A
2) Measured at 1 MHz and applied reverse voltage of 4 V
3) Thermal resistance from junction to ambient and from junction to lead at 0.375”(9.5 mm) lead length P.C.B, Mounted with 0.8 x 0.8”(20 x 20 mm) copper pads.
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**Forward current derating curve**

- Average forward rectified current, A
- Temperature (°C)
- Lead Temperature
- Ambient Temperature

**Maximum peak forward surge current**

- Peak forward surge current, A
- Number of cycles at 50Hz
- Non-repetitive
- Repetitive
- Ta=25 °C
- 10ms single half sine wave at rated load

**Typical Forward Characteristics**

- Forward Current, A
- Forward voltage, V
- Tj=25 °C
- Pulse width=300μs
- 1% duty cycle

**Typical Reverse Characteristics**

- Reverse current, μA
- Percent of peak reverse voltage, %
- Tj=100 °C
- Tj=50 °C
- Tj=25 °C

**Typical junction capacitance**

- Junction capacitance, pF
- Reverse voltage, v
- Tj=25 °C
- f=1MHz

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