ES2A - ES2D
Fast Rectifiers

Features
- For Surface Mount Applications
- Glass-Passivated Junction
- Low-Profile Package
- Easy Pick and Place
- Built-in Strain Relief
- Superfast Recovery Times for High Efficiency

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Top Mark</th>
<th>Package</th>
<th>Packing Method</th>
</tr>
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<tbody>
<tr>
<td>ES2A</td>
<td>ES2A</td>
<td>DO-214AA (SMB)</td>
<td>Tape and Reel</td>
</tr>
<tr>
<td>ES2B</td>
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<td>DO-214AA (SMB)</td>
<td>Tape and Reel</td>
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<tr>
<td>ES2C</td>
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<tr>
<td>ES2D</td>
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<td>DO-214AA (SMB)</td>
<td>Tape and Reel</td>
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</tbody>
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Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25°C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{RRM}$</td>
<td>Maximum Repetitive Reverse Voltage</td>
<td>50, 100, 150, 200</td>
<td>V</td>
</tr>
<tr>
<td>$I_{F(AV)}$</td>
<td>Average Rectified Forward Current, .375&quot; Lead Length at $T_L = 115°C$</td>
<td>2.0</td>
<td>A</td>
</tr>
<tr>
<td>$I_{FSM}$</td>
<td>Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine Wave</td>
<td>50</td>
<td>A</td>
</tr>
<tr>
<td>$T_{STG}$</td>
<td>Storage Temperature Range</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
<tr>
<td>$T_J$</td>
<td>Operating Junction Temperature Range</td>
<td>-55 to +150</td>
<td>°C</td>
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</table>
Thermal Characteristics
Values are at $T_A = 25 ^\circ C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
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<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_D$</td>
<td>Power Dissipation</td>
<td>1.66</td>
<td>W</td>
</tr>
<tr>
<td>$R_{\theta JA}$</td>
<td>Thermal Resistance, Junction to Ambient$^{(1)}$</td>
<td>75</td>
<td>°C/W</td>
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<tr>
<td>$R_{\theta JL}$</td>
<td>Thermal Resistance, Junction to Lead$^{(1)}$</td>
<td>20</td>
<td>°C/W</td>
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</tbody>
</table>

Note:
1. Device mounted on FR-4 PCB 0.013 mm.

Electrical Characteristics
Values are at $T_A = 25 ^\circ C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Conditions</th>
<th>Value</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>$V_F$</td>
<td>Maximum Forward Voltage</td>
<td>$I_F = 2.0 \ A$</td>
<td>0.90</td>
<td>V</td>
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<tr>
<td>$t_{rr}$</td>
<td>Reverse Recovery Time</td>
<td>$I_F = 0.5 \ A$, $I_R = 1.0 \ A$, $I_{RR} = 0.25 \ A$</td>
<td>20</td>
<td>ns</td>
</tr>
<tr>
<td>$I_R$</td>
<td>Maximum Reverse Current at Rated $V_R$</td>
<td>$T_A = 25 ^\circ C$</td>
<td>10</td>
<td>μA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$T_A = 100 ^\circ C$</td>
<td>350</td>
<td>μA</td>
</tr>
<tr>
<td>$C_T$</td>
<td>Total Capacitance</td>
<td>$V_R = 4.0 \ V$, $f = 1.0 \ MHz$</td>
<td>18</td>
<td>pF</td>
</tr>
</tbody>
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Typical Performance Characteristics

**Figure 1. Forward Current Derating Curve**

**Figure 2. Forward Voltage Characteristics**

**Figure 3. Non-Repetitive Surge Current**

**Figure 4. Reverse Current vs. Reverse Voltage**

**Figure 5. Total Capacitance**

**Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram**

NOTES:
1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.

*Suggestions:
1. SET TIME BASE FOR ±0.5A
2. SET TIME BASE FOR 1.0A
3. SET TIME BASE FOR ±0.25A
4. SET TIME BASE FOR 1.0cm

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Physical Dimension

Figure 7. 2-LEAD, SMB, JEDEC DO-214, VARIATION AA (ACTIVE)

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<th>Product Status</th>
<th>Definition</th>
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<td>Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.</td>
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