Asymmetrical Multiport Series are SIDACtor® components designed to protect LCAS (Line Circuit Access Switch) devices from damaging overvoltage transients. The series provides a specialized asymmetrical dual port overvoltage protection solution that enables equipment to comply with various global regulatory standards.

**Features and Benefits**
- Low voltage overshoot
- Low on-state voltage
- Does not degrade surge capability after multiple surge events within limit.
- Fails short circuit when surged in excess of ratings
- Replaces four discrete components
- Two-port protection
- RoHS Compliant, Lead-Free and Halogen Free
- LCAS specific tip and ring thresholds
- Pb-free E3 means 2nd level interconnect is Pb-free and the terminal finish material is tin (Sn) (IPC/JEDEC J-STD-609A.01)

**Agency Approvals**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Agency File Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>UL</td>
<td>E133083</td>
</tr>
</tbody>
</table>

**Pinout Designation**

- 1 (T1)
- 2 (G1)
- 3
- 4 (R2)
- 5 (G2)
- 6 (T2)

**Schematic Symbol**

<table>
<thead>
<tr>
<th>Pinout Designation</th>
<th>Schematic Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 6 5 4</td>
<td></td>
</tr>
</tbody>
</table>

**Electrical Characteristics**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Marking</th>
<th>V_{DRM} @ I_{PRM} = 5µA</th>
<th>V_{S} @ 100V/µs</th>
<th>V_{DRM} @ I_{PRM} = 5µA</th>
<th>V_{S} @ 100V/µs</th>
<th>V_{P} @ I_{F} = 2.2 Amps</th>
<th>I_{S} mA</th>
<th>I_{P} A</th>
<th>I_{P} mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1220UA4Lxx</td>
<td>A1220UA4</td>
<td>100</td>
<td>180</td>
<td>220</td>
<td>4</td>
<td>800</td>
<td>2.2</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>A1225UA4Lxx</td>
<td>A1250UA4</td>
<td>100</td>
<td>230</td>
<td>290</td>
<td>4</td>
<td>800</td>
<td>2.2</td>
<td>120</td>
<td></td>
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<tr>
<td>A1220UC4Lxx</td>
<td>A1220UC4</td>
<td>100</td>
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<td>800</td>
<td>2.2</td>
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<td>A1225UC4Lxx</td>
<td>A1250UC4</td>
<td>100</td>
<td>230</td>
<td>290</td>
<td>4</td>
<td>800</td>
<td>2.2</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- Absolute maximum ratings measured at T_{a} = 25°C (unless otherwise noted).
- Components are bi-directional.
- All electrical characteristics shown are defined from Tip to Ground (pin 1 to pin 2 and pin 6 to pin 5) and Ring to Ground (pin 3 to pin 2 and pin 4 to pin 5).
- XX = Part Number Suffix: ‘TP’ (Tube Pack) or ‘RP’ (Reel Pack).
SIDACtor® Protection Thyristors

**LCAS Protection**

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### Capacitance Values

<table>
<thead>
<tr>
<th>Part Number</th>
<th>pF</th>
<th>pF</th>
<th>pF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pin 1-2 / 4-5 Ring-Ground</td>
<td>Pin 3-2 / 6-5 Tip-Ground</td>
<td>Pin 1-3 (4-6) Tip-Ring</td>
</tr>
<tr>
<td>MIN</td>
<td>MAX</td>
<td>MIN</td>
<td>MAX</td>
</tr>
<tr>
<td>A1220UA4Lxx</td>
<td>15</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>A1225UA4Lxx</td>
<td>15</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>A1220UC4Lxx</td>
<td>35</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>A1225UC4Lxx</td>
<td>35</td>
<td>50</td>
<td>60</td>
</tr>
</tbody>
</table>

*Note: Off-state capacitance (C₀) is measured at 1 MHz with a 2 V bias.*

### Surge Ratings

<table>
<thead>
<tr>
<th>Series</th>
<th>IPP</th>
<th>ITSM</th>
<th>di/dt</th>
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</thead>
<tbody>
<tr>
<td>0.2/310</td>
<td>2/10</td>
<td>2/20</td>
<td>2/30</td>
</tr>
<tr>
<td>0.5/700</td>
<td>1/10</td>
<td>2/20</td>
<td>1/30</td>
</tr>
<tr>
<td>8/20</td>
<td>10/560</td>
<td>30/600</td>
<td>10/1000</td>
</tr>
<tr>
<td>10/160</td>
<td>10/560</td>
<td>10/1000</td>
<td>10/300</td>
</tr>
<tr>
<td>10/160</td>
<td>10/560</td>
<td>10/1000</td>
<td>10/300</td>
</tr>
<tr>
<td>10/160</td>
<td>10/560</td>
<td>10/1000</td>
<td>10/300</td>
</tr>
</tbody>
</table>

### Thermal Considerations

**IH**

**IT**

**IS**

**IDRM**

**VDRMVT**

**+V**

**-V**

**VTR**

**VORM**

**tᵣ**

**tᵳ**

**Peak Value**

**Waveform = tᵣ x tᵳ**

**Half Value**

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Specifications are subject to change without notice.
Revised: 02/23/17
Normalized V_g Change vs. Junction Temperature

Normalized DC Holding Current vs. Case Temperature

Soldering Parameters

- **Reflow Condition**: Pb-Free assembly (see Fig. 1)
- **Pre Heat**
  - Temperature Min (T_{min}) - +150°C
  - Temperature Max (T_{max}) - +200°C
  - Time (Min to Max) (t_p) - 60-180 secs.
- **Average ramp up rate (Liquidus Temp (T_L) to peak)** - 3°C/sec. Max.
- **T_{Simax} to T_L - Ramp-up Rate** - 3°C/sec. Max.
- **Reflow**
  - Temperature (T_L) (Liquidus) - +217°C
  - Temperature (T_L) - 60-150 secs.
- **Peak Temp (T_P)** - +260°(+0/-5)°C
- **Time within 5°C of actual Peak Temp (t_p)** - 30 secs. Max.
- **Ramp-down Rate** - 6°C/sec. Max.
- **Time 25°C to Peak Temp (T_P)** - 8 min. Max.
- **Do not exceed** - +260°C

Environmental Specifications

- **High Temp Voltage Blocking**
  - 80% Rated V_{rms} (V_{peak}) +125°C or +150°C, 504 or 1008 hrs. MilSTD-750 (Method 1041) EIA/JEDEC, JESD22-A-101
- **Temp Cycling**
  - -65°C to +150°C, 15 min. dwell, 10 up to 100 cycles. MilSTD-750 (Method 1051) EIA/JEDEC, JESD22-A-104
- **Biased Temp & Humidity**
  - 52 V_{dc} (+85°C) 85%RH, 504 up to 1008 hrs. EIA/JEDEC, JESD22-A-101
- **High Temp Storage**
  - +150°C 1008 hrs. MilSTD-750 (Method 1031) EIA/JEDEC, JESD22-A-101
- **Low Temp Storage**
  - -65°C, 1008 hrs.
- **Thermal Shock**
  - 0°C to +100°C, 5 min. dwell, 10 sec. transfer, 10 cycles. MilSTD-750 (Method 1056) EIA/JEDEC, JESD22-A-106
- **Autoclave (Pressure Cooker Test)**
  - +121°C, 100%RH, 2 atm, 24 up to 168 hrs. EIA/JEDEC, JESD22-A-102
- **Resistance to Solder Heat**
  - +260°C, 30 secs. MilSTD-750 (Method 2031)
- **Moisture Sensitivity Level**

**Physical Specifications**

- **Lead Material**: Copper Alloy
- **Terminal Finish**: 100% Matte-Tin Plated
- **Body Material**: UL recognized epoxy meeting flammability classification V-0

**Part Numbering**

- **Type**: A: Asymmetrical SIDACTor
- **MEDIAN VOLTAGE**: PACKAGE TYPE
- **I_{rr} RATING**: CONSTRUCTION VARIABLE
- **PACKING OPTIONS**: RP: Reel Pack, TP: Tube Pack, RoHS COMPLIANT

- **PART NUMBERING**
  - A: Asymmetrical SIDACTor
  - U: Upper Package Type
  - 4: I_{rr} RATING
  - L: Lower Package Type
  - X: Construction Variable

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Revised: 02/23/17
**Part Marking**

**Dimensions – MS-013**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Inches</th>
<th>Millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.360</td>
<td>9.14</td>
</tr>
<tr>
<td>B</td>
<td>0.352</td>
<td>8.94</td>
</tr>
<tr>
<td>C</td>
<td>0.400</td>
<td>10.16</td>
</tr>
<tr>
<td>D</td>
<td>0.043</td>
<td>1.09</td>
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<tr>
<td>E</td>
<td>0.047</td>
<td>1.19</td>
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<tr>
<td>F</td>
<td>0.293</td>
<td>7.44</td>
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<tr>
<td>G</td>
<td>0.289</td>
<td>7.34</td>
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<tr>
<td>H</td>
<td>0.089</td>
<td>2.26</td>
</tr>
<tr>
<td>J</td>
<td>0.041</td>
<td>1.04</td>
</tr>
<tr>
<td>K</td>
<td>0.020</td>
<td>0.51</td>
</tr>
<tr>
<td>BSC*</td>
<td>0.133</td>
<td>3.38</td>
</tr>
</tbody>
</table>

* BSC = Basic Spacing between Centers

**Tape and Reel Specification – MS-013**

**Tube Pack Specification – MS-013**

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