

ECN/PCN No.: M1342

| For Manufacturer   |  |  |  |
|--|--|--|--|
| <b>Product Description:</b><br>MOLDING TYPE POWER INDUCTOR | <b>Abracon Part Number / Part Series:</b><br>ASPI-0630LR | <input type="checkbox"/> Documentation only<br><input checked="" type="checkbox"/> ECN<br><input type="checkbox"/> EOL | <input checked="" type="checkbox"/> Series<br><input type="checkbox"/> Part Number |
| <b>Affected Revision:</b><br>A                             | <b>New Revision:</b><br>B                                | <b>Application:</b>  | <input type="checkbox"/> Safety<br><input checked="" type="checkbox"/> Non-Safety  |

Prior to Change:

### 1.0 Key Electrical Specifications

| Part Number     | Inductance | Tolerance | DCR Typ | DCR Max | Saturation Current | Temperature Rise Current |
|-----------------|------------|-----------|---------|---------|--------------------|--------------------------|
| Units           | μH         | %         | mΩ      | mΩ      | A                  | A                        |
| Symbol          | L          | M         |         |         | Isat               | Irms                     |
| ASPI-0630LR-R47 | 0.47       | M         | 3.5     | 4.1     | 20.0               | 18.0                     |
| ASPI-0630LR-R56 | 0.56       | M         | 4.7     | 5.0     | 18.0               | 17.0                     |
| ASPI-0630LR-R68 | 0.68       | M         | 6.0     | 6.5     | 17.0               | 16.0                     |
| ASPI-0630LR-R82 | 0.82       | M         | 7.0     | 7.5     | 16.0               | 14.0                     |
| ASPI-0630LR-1R0 | 1.0        | M         | 8.5     | 9.0     | 15.0               | 12.0                     |
| ASPI-0630LR-1R5 | 1.5        | M         | 10.5    | 12.0    | 14.0               | 10.0                     |
| ASPI-0630LR-2R2 | 2.2        | M         | 16.0    | 18.5    | 10.0               | 8.0                      |
| ASPI-0630LR-3R3 | 3.3        | M         | 25.0    | 28.0    | 10.0               | 6.5                      |
| ASPI-0630LR-4R7 | 4.7        | M         | 32.5    | 35.0    | 6.5                | 5.5                      |
| ASPI-0630LR-5R6 | 5.6        | M         | 32.5    | 35.5    | 5.0                | 6.0                      |
| ASPI-0630LR-6R8 | 6.8        | M         | 54.0    | 60.0    | 6.0                | 4.5                      |
| ASPI-0630LR-100 | 10.0       | M         | 62.0    | 68.0    | 5.5                | 4.0                      |
| ASPI-0630LR-150 | 15.0       | M         | 110.0   | 120.0   | 5.0                | 3.0                      |
| ASPI-0630LR-220 | 22.0       | M         | 152.0   | 167.0   | 2.5                | 2.5                      |

### Test Conditions

1. Inductance is measured in HP-4284A Precision LCR Meter.
2. RDC is measured in HP-4338B milli ohm meter.(or equivalent).
3. Isat: Based on inductance change ( $\Delta L/L_0 : \leq -30\%$ )
4. Irms: Based on temperature rise ( $\Delta T : 40^\circ\text{C TYP.}$ )

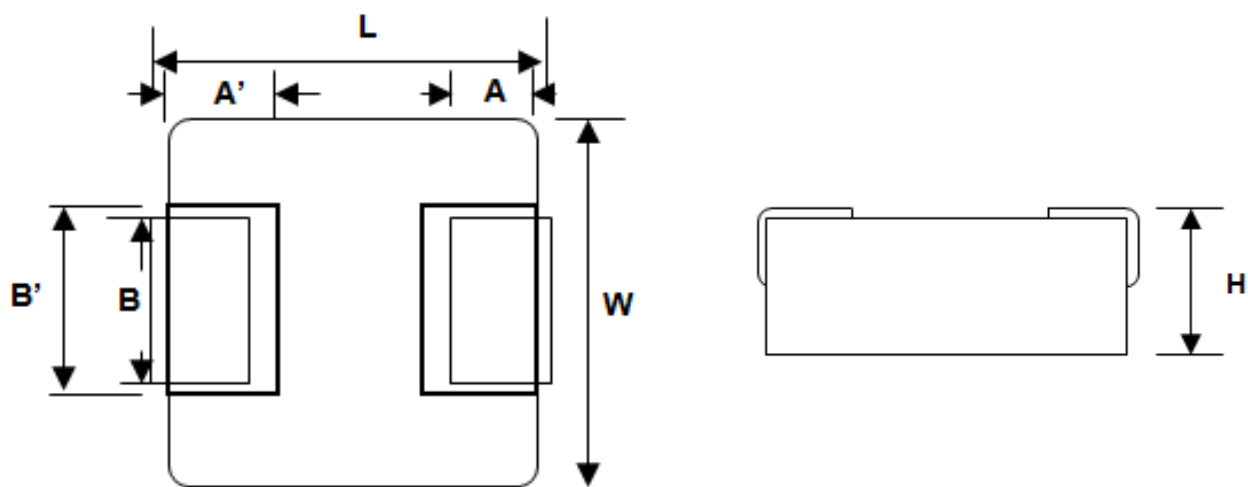
### Operating Temperature

-55°C to +125°C (Including self generated heat)

### Storage Temperature and Humidity

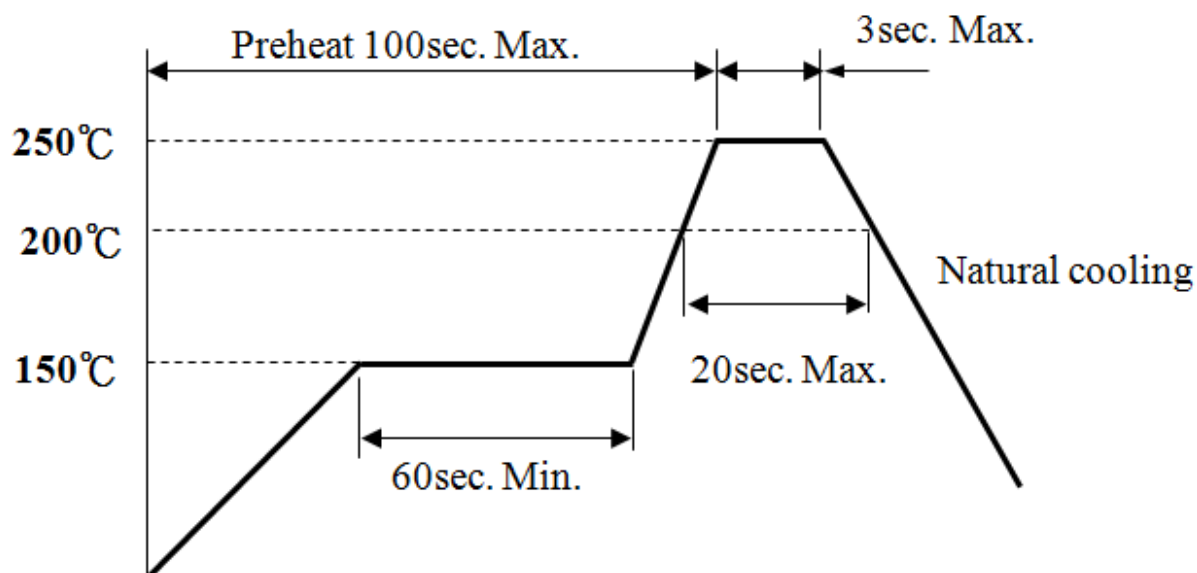
+25°C to +35°C, 45% to 85% RH

**Mechanical Dimension**

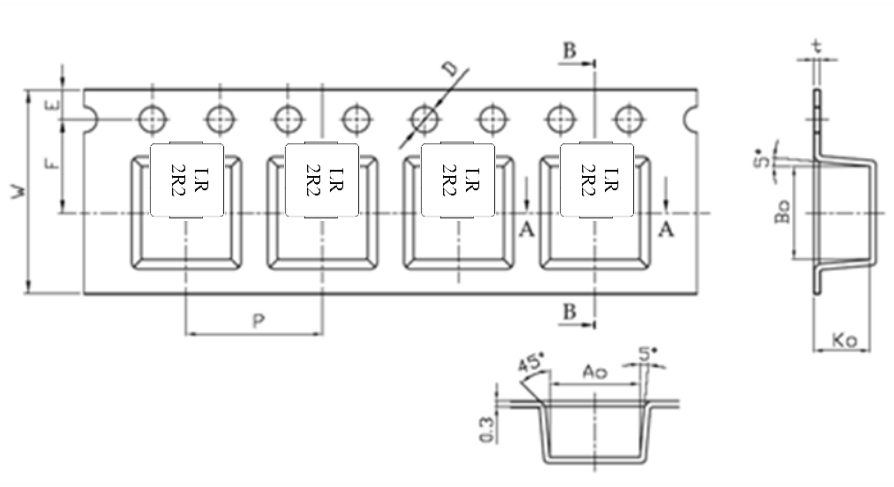


| A        | A'       | B        | B'       | L        | W         | H max |
|----------|----------|----------|----------|----------|-----------|-------|
| 1.6 ±0.4 | 2.0 ±0.1 | 3.0 ±0.3 | 3.4 ±0.2 | 7.2 ±0.3 | 6.65 ±0.2 | 3.0   |

**Reflow Profile**



**7.0 Packing**  
**T15: 1,500pcs / reel**



|    |      |
|----|------|
| A0 | 7.2  |
| B0 | 7.5  |
| K0 | 3.6  |
| P  | 12.0 |
| t  | 0.3  |
| W  | 16   |
| E  | 1.75 |
| F  | 7.5  |
| D  | 1.5  |

**After Change:**
**Electrical Specifications**

| Part Number     | Inductance    | Tolerance | DCR Max          | Saturation Current Typ. | Temperature Rise Current Typ. |
|-----------------|---------------|-----------|------------------|-------------------------|-------------------------------|
| Units           | $\mu\text{H}$ | %         | $\text{m}\Omega$ | A                       | A                             |
| Symbol          | L             | M         |                  | Isat                    | Irms                          |
| ASPI-0630LR-R22 | 0.22          | M         | 3.0              | 34.0                    | 24.0                          |
| ASPI-0630LR-R33 | 0.33          | M         | 3.5              | 23.0                    | 21.0                          |
| ASPI-0630LR-R47 | 0.47          | M         | 4.1              | 20.0                    | 18.0                          |
| ASPI-0630LR-R56 | 0.56          | M         | 5.0              | 18.0                    | 16.0                          |
| ASPI-0630LR-R68 | 0.68          | M         | 6.5              | 17.0                    | 16.0                          |
| ASPI-0630LR-R82 | 0.82          | M         | 7.5              | 16.0                    | 14.0                          |
| ASPI-0630LR-1R0 | 1.0           | M         | 9.0              | 15.0                    | 12.0                          |
| ASPI-0630LR-1R5 | 1.5           | M         | 12.1             | 12.0                    | 10.0                          |
| ASPI-0630LR-2R2 | 2.2           | M         | 18.5             | 10.0                    | 8.0                           |
| ASPI-0630LR-3R3 | 3.3           | M         | 28.0             | 9.5                     | 6.5                           |
| ASPI-0630LR-4R7 | 4.7           | M         | 35.0             | 6.5                     | 5.5                           |
| ASPI-0630LR-5R6 | 5.6           | M         | 42.0             | 5.0                     | 5.0                           |
| ASPI-0630LR-6R8 | 6.8           | M         | 60.0             | 6.0                     | 4.5                           |
| ASPI-0630LR-8R2 | 8.2           | M         | 60.0             | 5.5                     | 5.0                           |
| ASPI-0630LR-100 | 10.0          | M         | 68.0             | 5.5                     | 4.0                           |
| ASPI-0630LR-150 | 15.0          | M         | 120.0            | 4.0                     | 3.0                           |
| ASPI-0630LR-220 | 22.0          | M         | 170.0            | 2.5                     | 2.5                           |
| ASPI-0630LR-330 | 33.0          | M         | 270.0            | 2.5                     | 2.0                           |
| ASPI-0630LR-470 | 47.0          | M         | 385.0            | 2.0                     | 1.5                           |

**Test Conditions**

Inductance is measured using Wayne Kerr3260+3265B at 100KHz, 1V.

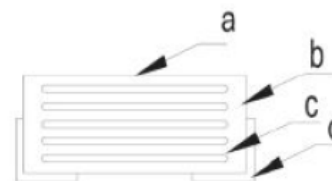
RDC is measured using HIOKI3540.

Isat: Based on inductance change ( $\Delta L/L_0 : \leq -30\%$ )

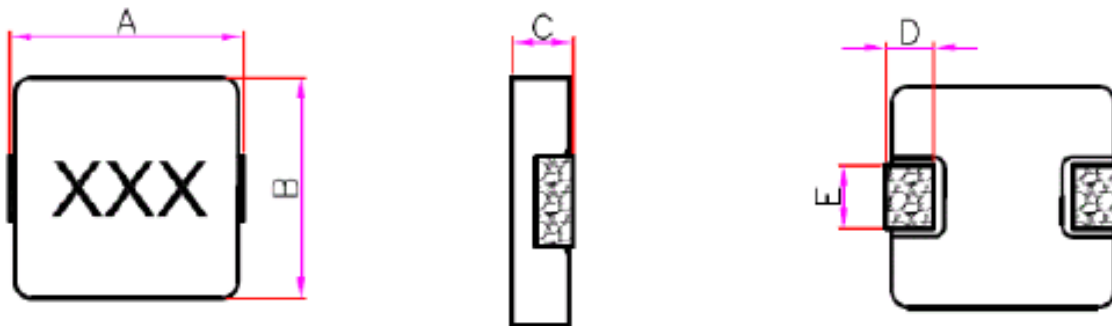
Irms: Based on temperature rise ( $\Delta T : 40^\circ\text{C TYP.}$ )

**Materials**

| No. | Description | Specification            |
|-----|-------------|--------------------------|
| a   | Marking     | Ink (black)              |
| b   | Core        | Alloy Sponge Powder      |
| c   | Wire        | Polyurethane copper wire |
| d   | Terminal    | Copper plated with Sn    |

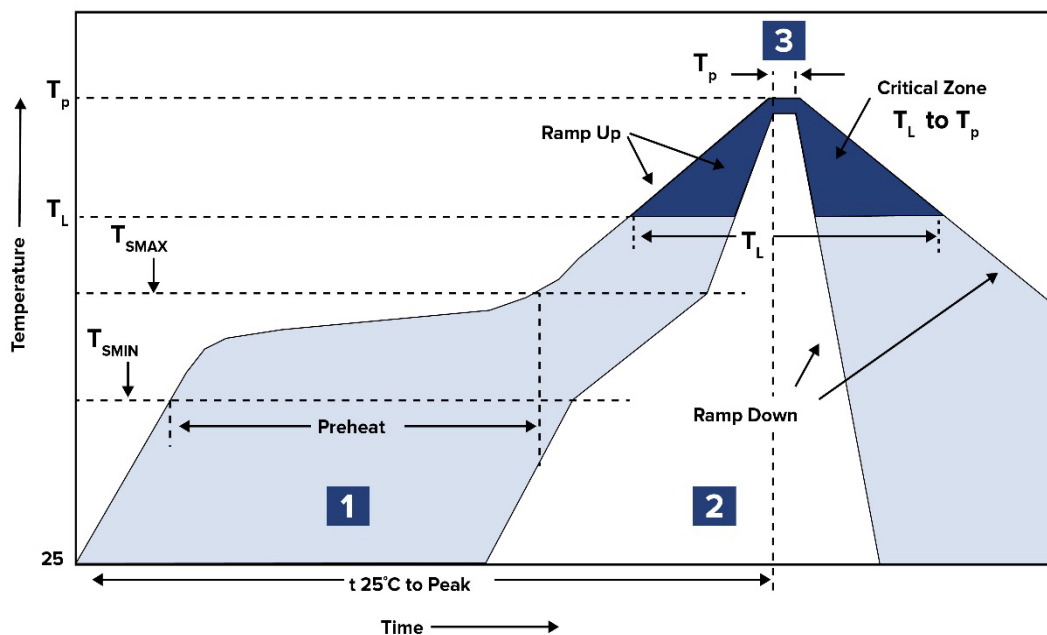


Mechanical Specifications

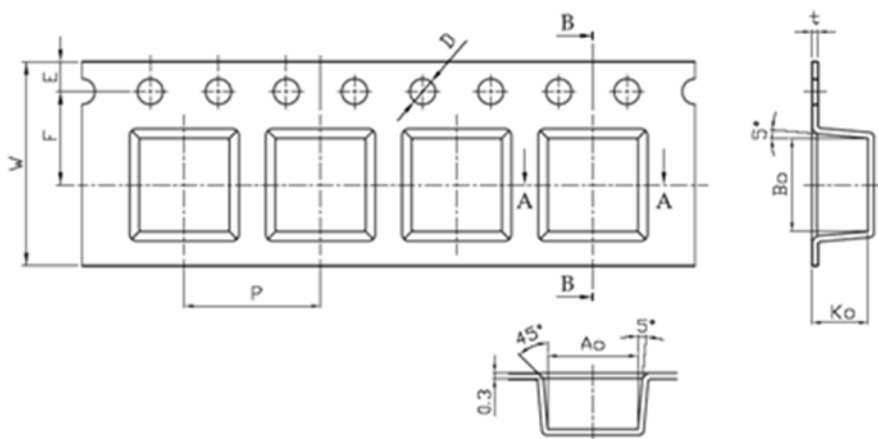


| A        | B         | C        | D        | E         |
|----------|-----------|----------|----------|-----------|
| 7.1 ±0.4 | 6.6 ±0.25 | 2.8 ±0.2 | 1.6 ±0.4 | 3.00 ±0.3 |

Reflow Profile



| Zone | Description | Temperature                               | Times        |
|------|-------------|---|--------------|
| 1    | Preheat     | $T_{SMIN} \sim T_{SMAX}$<br>150°C ~ 200°C | 60 ~120 Sec. |
| 2    | Reflow      | $T_L$<br>217°C                            | 60 ~90 Sec.  |
| 3    | Peak heat   | $T_P$<br>255°C (0/ -5°C)                  | 10 sec. Max  |

**Packing**
**T15: 1,500pcs / reel**


|           |                 |
|-----------|-----------------|
| <b>A0</b> | <b>6.9 ±0.3</b> |
| <b>B0</b> | <b>7.5</b>      |
| <b>K0</b> | <b>3.3 ±0.3</b> |
| <b>P</b>  | <b>12.0</b>     |
| <b>t</b>  | <b>0.35 Max</b> |
| <b>W</b>  | <b>16</b>       |
| <b>E</b>  | <b>1.75</b>     |
| <b>F</b>  | <b>7.5</b>      |
| <b>D</b>  | <b>1.5</b>      |

**Cause/Reason for Change:** R22, R33, 8R2, 330, 470 were added to the series. The electrical specs of multiple parts have been updated. Dimensions graphics and reflow profile were updated; minor changes to the tape dimensions. Dimensions values has been adjusted to include max tolerances (there is no change in physical dimensions of parts)

**Change Plan**

|                        |                            |
|------------------------|----------------------------|
| <b>Effective Date:</b> | <b>Additional Remarks:</b> |
|------------------------|----------------------------|

**Change Declaration:** The change does not affect the form or fit of any device in the series.

|                                 |                                   |  |
|---------------------------------|-----------------------------------|--|
| <b>Issued Date:</b><br>3/2/2022 | <b>Issued By:</b><br>Ahmed Alamin | <b>Issued Department:</b><br>Engineering |
|---------------------------------|-----------------------------------|--|

|   |  |   |
|---|--|---|
| <b>Approval:</b><br>Syed Raza<br>Engineering VP | <b>Approval:</b><br>Reuben Quintanilla<br>Quality Director | <b>Approval:</b><br>Ying Huang<br>Purchasing Director |
|---|--|---|

**For Abracon EOL only**

|                                       |   |
|---------------------------------------|---|
| <b>Last Time Buy (if applicable):</b> | <b>Alternate Part Number / Part Series:</b> |
|---------------------------------------|---|

|                             |                             |                             |
|-----------------------------|-----------------------------|-----------------------------|
| <b>Additional Approval:</b> | <b>Additional Approval:</b> | <b>Additional Approval:</b> |
|-----------------------------|-----------------------------|-----------------------------|

**Customer Approval (If Applicable)**

**Qualification Status:**

Approved  Not accepted

*Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.*

|                              |                          |
|------------------------------|--------------------------|
| <b>Customer Part Number:</b> | <b>Customer Project:</b> |
|------------------------------|--------------------------|

|                          |                                |                                  |
|--------------------------|--------------------------------|----------------------------------|
| <b>Company Name:</b>     | <b>Company Representative:</b> | <b>Representative Signature:</b> |
| <b>Customer Remarks:</b> |                                |                                  |