

# LVC Series

## Low Value Chip



Ohmite's LVC Series low value chip resistors are ideal for today's current sense applications requiring low profile, low cost solutions. Available in 0.5, 0.75, and 1 watt sizes, footprints are 1206, 2010, and 2512 size respectively. These resistors are offered in ohmic ranges from 0.10 to 4.7 ohms in standard 1% and 2% in E12 values depending on value.

The LVC Series resistors are well suited for a variety of industrial and commercial applications.

### APPLICATIONS

- Switching Power Supplies
- Cellular
- Telecom and Wireless
- Computer
- RF

### FEATURES

- Industry Standard Sizes
- Terminal Barrier Resists Ag Migration
- Working Temperature Range is from -40°C to +125°C
- Designed for Automatic Insertion

### SERIES SPECIFICATIONS

| Series | Power Rating | Max. Current | Resistance Range* | TCR ppm/°C | Resistance Tolerance |    |  |
|--------|--------------|--------------|-------------------|------------|----------------------|----|--|
| LVC06  | 0.5W         | 32A          | 10m-15m           | 500        | 10mΩ ~ 22mΩ          | 2% |  |
|        |              |              | 18m-27m           | 350        | 27mΩ ~ 4.7Ω          | 1% |  |
|        |              |              | 33m-47m           | 200        |                      |    |  |
|        |              |              | 50m- 4.7          | 100        |                      |    |  |
| LVC20  | 0.75W        | 40A          | 10m-15m           | 500        |                      |    |  |
|        |              |              | 18m-27m           | 350        |                      |    |  |
|        |              |              | 33m-47m           | 200        |                      |    |  |
|        |              |              | 50m- 4.7          | 100        |                      |    |  |
| LVC25  | 1.0W         | 45A          | 10m-15m           | 500        |                      |    |  |
|        |              |              | 18m-27m           | 350        |                      |    |  |
|        |              |              | 33m-47m           | 200        |                      |    |  |
|        |              |              | 50m- 4.7          | 100        |                      |    |  |

\* E-12 values and 20, 25, 50

### CHARACTERISTICS

|                              |                                                                                                                                                                                                              |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Substrate</b>             | Alumina 96%                                                                                                                                                                                                  |
| <b>Resistor</b>              | Thick Film, Ni-Cr Alloy                                                                                                                                                                                      |
| <b>Electrode</b>             | Sn, Ni, Cu                                                                                                                                                                                                   |
| <b>Coating</b>               | Epoxy resin                                                                                                                                                                                                  |
| <b>Max. Working Volts</b>    | $V = \sqrt{PR}$ (P = Rated Watts, R = Resistance Value)                                                                                                                                                      |
| <b>Derating</b>              | 100% @ 70°C, Derates Linearly to Zero @ 125°C                                                                                                                                                                |
| <b>Operating temp. range</b> | -40°C ~ +125°C                                                                                                                                                                                               |
| <b>Soldering</b>             | The recommended soldering condition for both reflow and wave soldering is as follows:<br>Preheating: 150° ~ 180°C 60 ~ 120 sec.<br>Soldering: min. 230°C 30 ~ 40 sec.<br>Max. temp.: max. 260°C max. 10 sec. |

### PERFORMANCE DATA

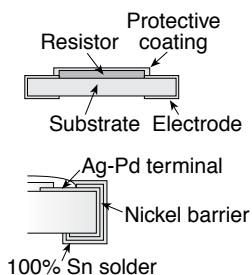
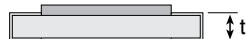
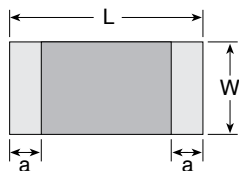
|                                  |                                                                              |                                                                                     |
|----------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Moisture resistance</b>       | 60°C±2°C, 90%~95% RH, Rated voltage 1.5h ON, 0.5h OFF, 1000h                 | ±(0.5%+0.0005Ω)                                                                     |
| <b>Temperature Cycle</b>         | -40°C (30min.)/+125°C (30min.), 5 cycles                                     | ±(0.5%+0.0005Ω)                                                                     |
| <b>Short Time Overload</b>       | Rated voltage x 2.5 for 5s                                                   | ±(0.5%+0.0005Ω)                                                                     |
| <b>Endurance</b>                 | 70°C±3°C, Rated voltage 1.5h ON, 0.5h OFF, 1000h                             | ±(0.5%+0.0005Ω)                                                                     |
| <b>Resistance to Solder Heat</b> | 260°C±5°C for 10±1s                                                          | ±(0.5%+0.0005Ω)                                                                     |
| <b>Terminal strength</b>         | Bending width: 2mm for 10s±1s, Glass epoxy substrate with thickness of 1.6mm | ±(0.5%+0.0005Ω)                                                                     |
| <b>Solderability</b>             | 245°C±5°C for 3s±0.5s                                                        | Min. 90% coverage                                                                   |
| <b>Max. Overload Current</b>     | (A) Time applied: max. 10msec Interval: min. 60sec                           | LVC06 $I = \sqrt{(32/R)}$<br>LVC20 $I = \sqrt{(50/R)}$<br>LVC25 $I = \sqrt{(64/R)}$ |

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### DIMENSIONS

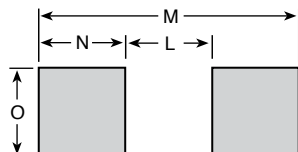
(mm)



| Size                     | L<br>±0.2 | W<br>±0.2 | t<br>±0.15 | a<br>±0.15 |
|--------------------------|-----------|-----------|------------|------------|
| LVC06<br>(EIA size 1206) | 3.2       | 1.6       | 0.5        | 1.0        |
| LVC20<br>(EIA size 2010) | 5.0       | 2.5       | 0.5        | 1.7        |
| LVC25<br>(EIA size 2512) | 6.4       | 3.2       | 0.5        | 2.0        |

### Land Pattern

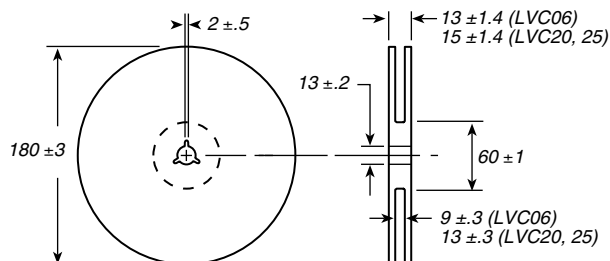
Land pattern dimensions are for reference only



| Size  | M     | N     | O     | L     |
|-------|-------|-------|-------|-------|
| LVC06 | 0.146 | 0.040 | 0.080 | 0.066 |
| LVC20 | 0.229 | 0.056 | 0.120 | 0.117 |
| LVC25 | 0.288 | 0.068 | 0.150 | 0.152 |

### REEL SPECIFICATIONS

5,000 pc/reel



### ORDERING INFORMATION

| RoHS Compliant           |                                                  |                               |                                    |                                                       |
|--------------------------|--------------------------------------------------|-------------------------------|------------------------------------|-------------------------------------------------------|
| LVC06FR560E V            |                                                  |                               |                                    |                                                       |
| Low Value<br>Chip Series | Case Size<br>06 = 1206<br>20 = 2010<br>25 = 2512 | Tolerance<br>F = 1%<br>G = 2% | Ohms<br>R249 = 0.249<br>1R00 = 1.0 | Taping Code<br>blank = bulk package<br>V = reel taped |

| Ohm range                       | Tol. | Available Ohm Values                                                                                                                                                                                    |
|---------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.027 ~ 4.7                     | 1%   | 0.027, 0.033, 0.039, 0.047, 0.050, 0.056, 0.068, 0.082, 0.10, 0.12, 0.15, 0.18, 0.20, 0.22, 0.25, 0.27, 0.33, 0.39, 0.47, 0.50, 0.56, 0.68, 0.82, 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.5, 2.7, 3.3, 3.9, 4.7 |
| 0.010 ~ 0.022                   | 2%   | 0.010, 0.012, 0.015, 0.018, 0.020, 0.022                                                                                                                                                                |
| Only E12 values plus 20, 25, 50 |      |                                                                                                                                                                                                         |