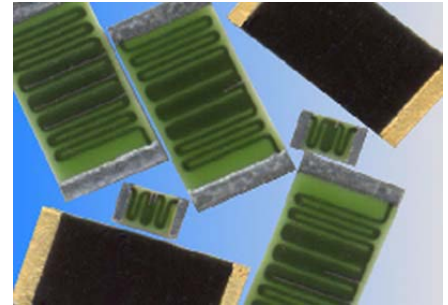


- Features:
- Ohmic values to 50G
  - Available with wire bondable terminations
  - Tight tolerances to 0.1%
  - Utilizes fine film resistor deposition technology
  - Superior pulse handling capabilities
  - Low TCR to 25 ppm/°C
  - Low VCR to 1 ppm/volt
  - Very low noise
  - Ultra high stability
  - Custom sizes available
  - Higher (up to 1Tohm) or lower resistance values may be available (contact factory)
  - Standard HVC parts are unmarked
  - RoHS compliant and halogen-free



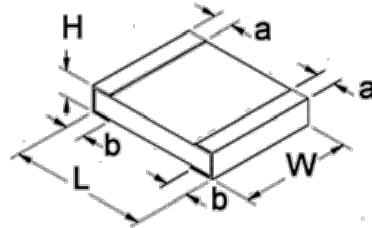
| Electrical Specifications |                             |  |                                   |                               |             |             |            |           |           |            |     |
|---------------------------|-----------------------------|--|-----------------------------------|-------------------------------|-------------|-------------|------------|-----------|-----------|------------|-----|
| Type / Code               | Power Rating (Watts) @ 70°C | Maximum Working Voltage <sup>(1)</sup> | Resistane Temperature Coefficient | Ohmic Range (Ω) and Tolerance |             |             |            |           |           |            |     |
|                           |                             |  |                                   | 0.1%                          | 0.25%       | 0.5%        | 1%         | 2%        | 5%        | 10%        | 20% |
| HVC0603                   | 0.06W                       | 400V                                   | ± 50 ppm/°C                       | -                             | 10K - 10M   | 10K - 100M  | 10K - 500M |           |           |            |     |
|                           |                             |  | ± 100 ppm/°C                      |                               |             | 10K - 500M  | 10K - 1G   |           | 10K - 1G  |            |     |
|                           |                             |  | ± 200 ppm/°C                      |                               |             |             | 10K - 10G  |           | 10K - 50G |            |     |
| HVC0805                   | 0.2W                        | 600V                                   | ± 50 ppm/°C                       | -                             | 10K - 10M   | 10K - 500M  |            |           |           |            |     |
|                           |                             |  | ± 100 ppm/°C                      |                               |             | 10K - 1G    | 10K - 1G   |           |           |            |     |
|                           |                             |  | ± 200 ppm/°C                      |                               |             |             | 10K - 10G  |           | 10K - 50G |            |     |
| HVC1206                   | 0.33                        | 1500V                                  | ± 25 ppm/°C                       | 1M - 100M                     | 1M - 100M   |             |            |           |           |            |     |
|                           |                             |  | ± 50 ppm/°C                       | 100K - 100M                   | 100K - 100M | 100K - 500M |            |           |           |            |     |
|                           |                             |  | ± 100 ppm/°C                      | 10K - 100M                    | 10K - 100M  | 10K - 500M  | 10K - 1G   | 10K - 1G  |           |            |     |
|                           |                             |  | ± 200 ppm/°C                      |                               |             |             |            | 10K - 10G |           | 10K - 50G  |     |
| HVC2010                   | 1W                          | 2000V                                  | ± 25 ppm/°C                       | 1M - 100M                     | 1M - 100M   |             |            |           |           |            |     |
|                           |                             |  | ± 50 ppm/°C                       | 100K - 100M                   | 100K - 100M | 100K - 500M |            |           |           |            |     |
|                           |                             |  | ± 100 ppm/°C                      | 10K - 100M                    | 10K - 100M  | 10K - 500M  | 10K - 1G   | 10K - 1G  |           |            |     |
|                           |                             |  | ± 200 ppm/°C                      |                               |             |             |            | 10K - 10G |           | 10K - 50G  |     |
| HVC2512                   | 2W                          | 3000V                                  | ± 25 ppm/°C                       | 1M - 100M                     | 1M - 500M   |             |            |           |           |            |     |
|                           |                             |  | ± 50 ppm/°C                       | 100K - 100M                   | 100K - 500M | 100K - 1G   |            |           |           |            |     |
|                           |                             |  | ± 100 ppm/°C                      | 10K - 100M                    | 10K - 500M  | 10K - 1G    | 10K - 10G  |           |           | 100K - 10G |     |
|                           |                             |  | ± 200 ppm/°C                      |                               |             |             | 10K - 10G  |           |           | 100K - 50G |     |
| HVC3512                   | 3W                          | 3500V                                  | ± 25 ppm/°C                       | 1M - 100M                     | 1M - 500M   |             |            |           |           |            |     |
|                           |                             |  | ± 50 ppm/°C                       | 100K - 100M                   | 100K - 500M | 100K - 1G   |            |           |           |            |     |
|                           |                             |  | ± 100 ppm/°C                      | 10K - 100M                    | 10K - 500M  | 10K - 1G    | 10K - 10G  |           |           | 100K - 10G |     |
|                           |                             |  | ± 200 ppm/°C                      |                               |             |             | 10K - 10G  |           |           | 100K - 50G |     |

Proper terminal isolation is required to achieve the voltage ratings for each given size.

(1) The continuous maximum voltage applied cannot exceed the maximum power rating and is ohmic value dependent.

Note: Other case sizes and tolerances are available.

**Mechanical Specifications**



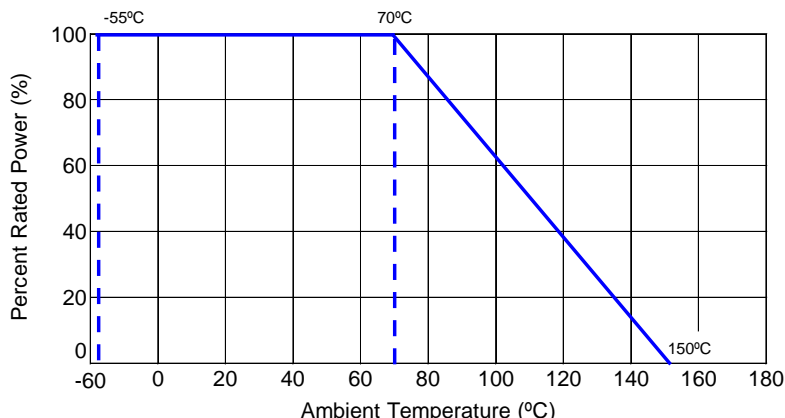
| Type / Code | L<br>Body Length            | W<br>Body Width              | H<br>Body Height (Max.) | a<br>Top Termination         | b<br>Bottom Termination      | Unit         |
|-------------|-----------------------------|------------------------------|-------------------------|------------------------------|------------------------------|--------------|
| HVC0603     | 0.063 ± 0.01<br>1.60 ± 0.25 | 0.031 ± 0.005<br>0.79 ± 0.13 | 0.020<br>0.51           | 0.010 ± 0.005<br>0.25 ± 0.13 | 0.012 ± 0.008<br>0.30 ± 0.20 | inches<br>mm |
| HVC0805     | 0.079 ± 0.01<br>2.01 ± 0.25 | 0.050 ± 0.005<br>1.27 ± 0.13 | 0.025<br>0.64           | 0.010 ± 0.005<br>0.25 ± 0.13 | 0.013 ± 0.008<br>0.33 ± 0.20 | inches<br>mm |
| HVC1206     | 0.126 ± 0.01<br>3.20 ± 0.25 | 0.063 ± 0.005<br>1.60 ± 0.13 | 0.030<br>0.76           | 0.010 ± 0.005<br>0.25 ± 0.13 | 0.020 ± 0.010<br>0.51 ± 0.25 | inches<br>mm |
| HVC2010     | 0.200 ± 0.01<br>5.08 ± 0.25 | 0.100 ± 0.005<br>2.54 ± 0.13 | 0.030<br>0.76           | 0.018 ± 0.010<br>0.46 ± 0.25 | 0.020 ± 0.010<br>0.51 ± 0.25 | inches<br>mm |
| HVC2512     | 0.250 ± 0.01<br>6.35 ± 0.25 | 0.125 ± 0.005<br>3.18 ± 0.13 | 0.030<br>0.76           | 0.020 ± 0.010<br>0.51 ± 0.25 | 0.024 ± 0.010<br>0.61 ± 0.25 | inches<br>mm |
| HVC3512     | 0.350 ± 0.01<br>8.89 ± 0.25 | 0.125 ± 0.005<br>3.18 ± 0.13 | 0.030<br>0.76           | 0.020 ± 0.010<br>0.51 ± 0.25 | 0.024 ± 0.010<br>0.61 ± 0.25 | inches<br>mm |

**Performance Characteristics**

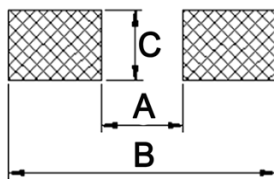
| Test                            | Typical Performance |
|---------------------------------|---------------------|
| Short Time Overload             | 0.1%                |
| Load Life                       | 0.1%                |
| Temperature Cycle               | 0.1%                |
| Moisture Resistance             | 0.1%                |
| Shock                           | 0.05%               |
| Vibration                       | 0.05%               |
| Dielectric Withstanding Voltage | 0.05%               |
| Resistance to Soldering Heat    | 0.05%               |

| Parameter             | Typical  |
|-----------------------|--|
| Operating Temperature | -55°C to 150°C   |
| TCR                   | measured from 25°C to 75°C   |
| Pulse Capability      | 10X rated wattage<br>Consult factory for custom pulse applications |
| Resistance Value      | Measured at 100V<br>Consult factory for custom test voltages       |

**Power Derating Curve:**



**Recommended Pad Layout**



| Type / Code | A     | B     | C     | Unit   |
|-------------|-------|-------|-------|--------|
| HVC0603     | 0.031 | 0.083 | 0.035 | inches |
|             | 0.80  | 2.10  | 0.90  | mm     |
| HVC0805     | 0.047 | 0.118 | 0.051 | inches |
|             | 1.20  | 3.00  | 1.30  | mm     |
| HVC1206     | 0.087 | 0.165 | 0.063 | inches |
|             | 2.20  | 4.20  | 1.60  | mm     |
| HVC2010     | 0.138 | 0.240 | 0.110 | inches |
|             | 3.50  | 6.10  | 2.80  | mm     |
| HVC2512     | 0.150 | 0.315 | 0.138 | inches |
|             | 3.80  | 8.00  | 3.50  | mm     |

**RoHS Compliance**

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union’s directive regarding “Restrictions on Hazardous Substances” (RoHS 2). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament.

**RoHS Compliance Status**

| Standard Product Series | Description   | Package / Termination Type | Standard Series RoHS Compliant | Lead-Free Termination Composition | Lead-Free Mfg. Effective Date (Std Product Series) | Lead-Free Effective Date Code (YY/WW) |
|-------------------------|---|----------------------------|--------------------------------|-----------------------------------|--|---------------------------------------|
| HVC                     | High Voltage Thick Film Surface Mount Chip Resistor | SMD                        | YES(1)                         | 100% Matte Sn ("T")               | Always   | Always                                |

Note (1): RoHS Compliant by means of exemption 7c-l.

**“Conflict Metals” Commitment**

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the “conflict region” of the Eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

**Compliance to “REACH”**

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, “The Registration, Evaluation, Authorization and Restriction of Chemicals”, otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

**Environmental Policy**

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

**How to Order**

|          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1        | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 11       | 12       | 13       | 14       | 15       |
| <b>H</b> | <b>V</b> | <b>C</b> | <b>B</b> | <b>2</b> | <b>5</b> | <b>1</b> | <b>2</b> | <b>F</b> | <b>K</b> | <b>C</b> | <b>1</b> | <b>0</b> | <b>M</b> | <b>0</b> |

| Product Series  | Size | Power | Tolerance |       | Packaging |                        |                  |       | TCR  |     | Resistance Value   |
|---|------|-------|-----------|-------|-----------|------------------------|------------------|-------|------|-----|--|
| HVCB<br>Solderable wraparound<br>(100% matte tin)     | 0603 | 0.06W | Code      | Tol   | T         | 7" Reel - Paper Tape   | 0603, 0805       | 5,000 | Code | ppm | Four characters with the multiplier used as the decimal holder.<br>10 Kohm = 10K0<br>1 Mohm = 1M00<br>10 Gohm = 10G0 |
|   | 0805 | 0.2W  | B         | 0.1%  |           |                        | C                | 25    |      |     |  |
| HVCG<br>Wire bondable (gold)                          | 1206 | 0.33W | C         | 0.25% | T         | 7" Reel - Plastic Tape | 2010             | 4,000 | D    | 100 |  |
|   | 2010 | 1W    | D         | 0.5%  |           |                        | L                | 200   |      |     |  |
| HVCS<br>Solderable single surface<br>(Sn/Pb)          | 2512 | 2W    | F         | 1%    | K         | 7" Reel - Paper Tape   | 0603, 0805, 1206 | 1,000 | M    | 300 |  |
|   | 3512 | 3W    | G         | 2%    |           |                        | 2010, 2512, 3512 | 1,000 |      |     |  |
| HVCZ<br>Solderable single surface<br>(100% matte tin) |      |       | J         | 5%    | D         | 7" Reel - Paper Tape   | 0603, 0805, 1206 | 500   |      |     |  |
|   |      |       | K         | 10%   |           |                        | 2010, 2512, 3512 | 500   |      |     |  |
|   |      |       | M         | 20%   | B         | Bulk                   | All Sizes        | 1,000 |      |     |  |
|   |      |       |           |       |           |                        |                  |       |      |     |  |

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