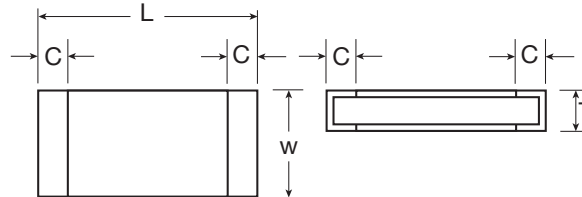


High Voltage Chip Resistors – HVCR

Features

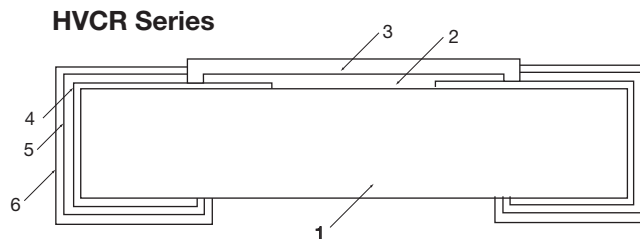
- High Voltage Chip Resistors
- Flat Chip Resistors for surface mount applications

Dimensions



	0402	0603	0805	1206	2010	2512
L (Length) Inches (mm)	0.040 ± .002 (1.0 ± 0.05)	0.063 ± .004 (1.6 ± 0.1)	0.079 ± .006 (2.0 ± 0.15)	0.126 ± .006 (3.2 ± 0.15)	0.197 ± .006 (5.0 ± 0.15)	0.248 ± .006 (6.3 ± 0.15)
W (Width) Inches (mm)	0.020 ± .001 (0.5 ± 0.02)	0.031 ± .004 (0.8 ± 0.1)	0.050 ± .006 (1.25 ± 0.15)	0.063 ± .006 (1.6 ± 0.15)	0.098 ± .006 (2.50 ± 0.15)	0.126 ± .006 (3.2 ± 0.15)
T (Thickness) Inches (mm)	0.014 ± .002 (0.35 ± .05)	0.018 ± .004 (0.45 ± 0.1)	0.018 ± .006 (0.45 ± 0.15)	0.022 ± .006 (0.56 ± 0.15)	0.022 ± .006 (0.56 ± 0.15)	0.022 ± .006 (0.56 ± 0.15)
C (End Band) Inches (mm)	0.008 ± .004 (0.2 ± 0.1)	0.012 ± .006 (0.30 ± 0.15)	0.014 ± .006 (0.35 ± 0.15)	0.020 ± .008 (0.50 ± 0.20)	0.024 ± .008 (0.60 ± 0.20)	0.024 ± .008 (0.60 ± 0.20)

Structure



Description		
1	Substrate	Alumina
2	Resistive element	Ruthenium Oxide (RuO ₂)
3	Protective coating	Boro-Silicate Glass
4	Inner termination	Silver Palladium (Ag-Pd)
5	Inner Plating	Nickel (Ni)
6	Outer Plating	Solder Plating, 100% matte Tin (Sn)

All components in this section are RoHS compliant per the EU directives and definitions.

For standard resistance values, please see "EIA Standard Resistance Values" on page 62.

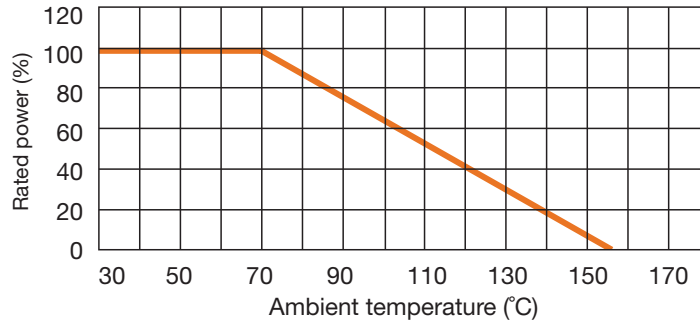
Specifications

Series	Power Rating at 70°C	Max. Working Voltage	Max. Overload Voltage	T.C.R. Temperature Coefficient of Resistance (PPM/°C)	Resistance Range
HVCR0402-16W	0.063W	*E = \sqrt{PR} or 100V whichever is less	200V	10Ω – 1MegΩ: ±100 1.02MegΩ – 10MegΩ: ±200	Zero, 10Ω - 10MegΩ
HVCR0603-10W	0.10W	*E = \sqrt{PR} or 100V whichever is less	200V	10Ω – 1MegΩ: ±100 1.02MegΩ – 10MegΩ: ±200	Zero, 10Ω - 10MegΩ
HVCR0805-8W	0.125W	*E = \sqrt{PR} or 300V whichever is less	600V	10Ω – 1MegΩ: ±100 1.02MegΩ – 10MegΩ: ±200	Zero, 10Ω - 10MegΩ
HVCR1206-4W	0.25W	*E = \sqrt{PR} or 500V whichever is less	1000V	10Ω – 1MegΩ: ±100 1.02MegΩ – 10MegΩ: ±200	Zero, 10Ω - 10MegΩ
HVCR2010-2W	0.50W	*E = \sqrt{PR} or 500V whichever is less	1000V	10Ω – 1MegΩ: ±100 1.02MegΩ – 10MegΩ: ±200	Zero, 10Ω - 10MegΩ
HVCR2512-1W	1.00W	*E = \sqrt{PR} or 500V whichever is less	1000V	10Ω – 1MegΩ: ±100 1.02MegΩ – 10MegΩ: ±200	Zero, 10Ω - 10MegΩ

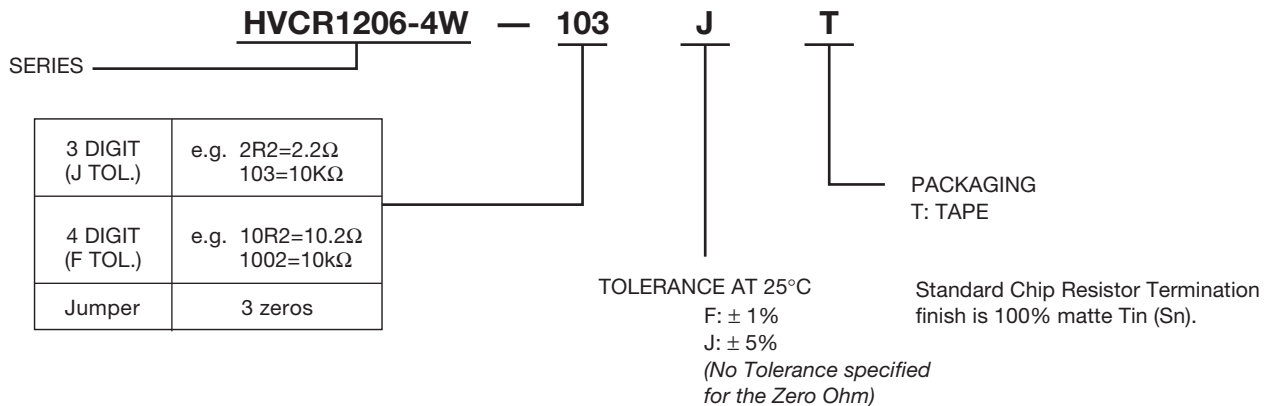
Operating Temp. Range is -55°C to +155°C • DC Resistance Value of zero ohm is 50m ohms max.

*E = \sqrt{PR} where E = Rated Voltage (V); P = Rated Power (P) and R = Nominal Resistance (Ω).

Derating Curve



How To Order



0603 — 1% Chip Resistors may not be marked. (For HVCR Series)

Please consult your salesperson if marking is required. (See the data sheet on Marking Codes)

- E-24 Standard Resistance values that are available in 1%, may be marked with the standard 3-digit code identifier or an alpha numeric code.
For the alpha numeric marking see page 62 for details.
- NOTE: See page 61 for Standard Resistance Values
- NOTE: Other nominal resistance values may also be available, please contact your sales representative for further information.

All components in this section are RoHS compliant per the EU directives and definitions.
For standard resistance values, please see "EIA Standard Resistance Values" on page 62.

Characteristics

Item	Test Basis: JIS-C-5202	Specification Requirements	Typical
Short-time Overload	2.5 x rated voltage DC for 5 sec.	±1% +0.5Ω, no arc evidence	within ±0.4%
Load Life	70°C, rated voltage for 1.5 hrs. on/0.5 hr. off for 1000 hrs.	<1 meg. ±2% +0.1Ω; > 1 meg. ±3%	—
Resistance to Soldering Heat	260°C for 10 seconds	±1% +0.05Ω, no mechanical damage	—
Temperature Cycling	-55 ~ +125° C, 5 cycles.	± 1.0%	—
Solderability	230°C, 3 seconds, flux applied	95% minimum coverage	more than 97-98%
Dry Heat Resistance	+125°C for 1,000 hours	±3% +0.1Ω, no mechanical damage	within ±0.5%
Pull Terminal Strength	500G load for 30 seconds	±1% +0.05Ω, no mechanical damage	within ±0.2%
PCB Terminal Strength	1/45mm bend for 10 seconds	±1% +0.05Ω, no mechanical damage	within ±0.2%
Moisture Resistance, Thermal Shock	-55°C to +125°C, 5 cycles	±1% +0.05Ω, no mechanical damage	within ±0.2%
Moisture Load Life	40°C, 95% R.H., 1.5 hr. on, 0.5 hr. off, 1,000 hours	<1 meg ±2% +0.1Ω; > 1 meg. ±3%	—
Insulation Resistance	Max. Overload Voltage for 1 minute	≥ 10 G	more than 10 Meg.
Voltage Proof	1.5 times Rated Voltage for 1 minute	No breakdown or flashover	—
Low Temperature Exposure	-55°C for 1,000 hours	±3% +0.1Ω, no mechanical damage	within ±0.5%