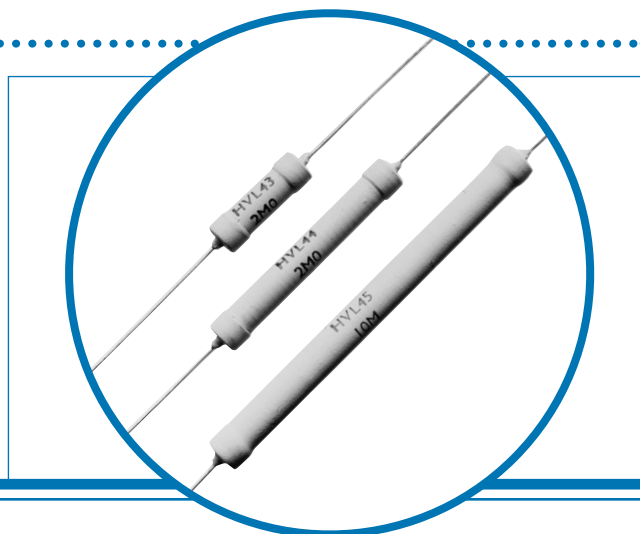


# High Voltage Low Inductance Thick film Resistors

## HVL Series

- Working voltage up to 48kV
- Low inductance
- Resistance up to 4G
- Low temperature coefficient of resistance
- Low voltage coefficient
- Sets of resistors with matched characteristics

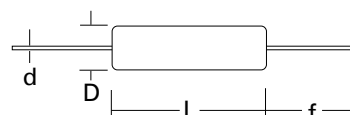


## Electrical Data

		HVL 43	HVL 44	HVL 45	Notes
Power rating at 70°C	watts	1.5	3.5	5.0	
Resistance range	ohms	1K to 1G	1K to 2G	1K to 4G	
Limiting element voltage	volts	4K	14K	24K	In air
		8K	28K	48K	In oil
TCR (20°C to 70°C)	ppm/°C	25, 50, 100			Values >1G: TCR is 250ppm/°C
Resistance tolerance	%	1, 2, 5			Closer tolerances over restricted range
Values		E24 preferred values			Any value to special order
Thermal impedance	°C/watt	31	27	20	
Ambient temperature range		-55 to 155			

## Physical Data

Dimensions (mm) and Weight (g)							
Type	L max.	D max.	f min.	d nom.	PCB mounting centres	Min. bend radius	Wt. nom.
HVL 43	25.4	8.0	30	0.8	31.8	1.2	3.1
HVL 44	50.8	8.0	30	0.8	57.2	1.2	5.6
HVL 45	84.2	8.0	30	0.8	87.2	1.2	5.6



### Construction

A ruthenium oxide based resistive film is fired onto a high quality ceramic former. Cap and lead assemblies are force fitted to the former. The resistor is adjusted to value and the body is protected with a silicone coating.

### Terminations

**Material** Solder coated copper wire.

**Strength** The terminations meet the requirements of IEC 68.2.21.

**Solderability** The terminations meet the requirements of IEC 115-1, Clause 4.17.3.2.

### Marking

Type reference, resistance value, tolerance and date code are legend marked. The resistance value conforms to IEC 62.

### Solvent Resistance

The body protection and marking are resistant to all normal industrial cleaning solvents suitable for printed circuits.

### General Note

Welwyn Components reserves the right to make changes in product specification without notice or liability. All information is subject to Welwyn's own data and is considered accurate at time of going to print.

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# High Voltage Low Inductance Thick film Resistors

HVL Series

## Performance Data

		Maximum	Typical
Load at rated power: 1000 hours at 70°C	$\Delta R\%$	1	0.3
Shelf life: 12 months at room temperature	$\Delta R\%$	0.3	0.1
Derating from rated power at 70°C		Zero at 155°C	
Noise (in a decade of frequency)	$\mu V/V$	5	<2.5
Voltage coefficient of resistance	ppm/volt	5	<1

### Matched Sets

Resistors in a set can be supplied for use as precision voltage dividers matched for tolerance and TCR down to 0.5% and 10ppm/°C.

ENQUIRIES ARE WELCOMED FOR SPECIAL RESISTORS AND SETS

## Application Notes

### Mounting

Due to the high voltage which can appear between the end cap and any adjacent metal part, resistors should be mounted at an adequate distance from other conductors.

For some high voltage applications it is required to immerse the components in oil or gas to reduce the effects of corona and surface tracking. The protective coating is suitable for these applications.

The axial termination should not be bent closer than twice the diameter of the terminal wire from the body of the resistor.

When the resistors are required to be plotted, the preferred encapsulant is a silicone compound.

For voltage dividers with a low resistance section below the minimum available value of 1k ohms, it is normal practice to use a Welwyn resistor, RC Series, obtainable down to 1ohm.

### Packaging

Resistors are supplied packed in boxes.

### Standard Quantities Per Box

All Types	10 or 20 per box
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