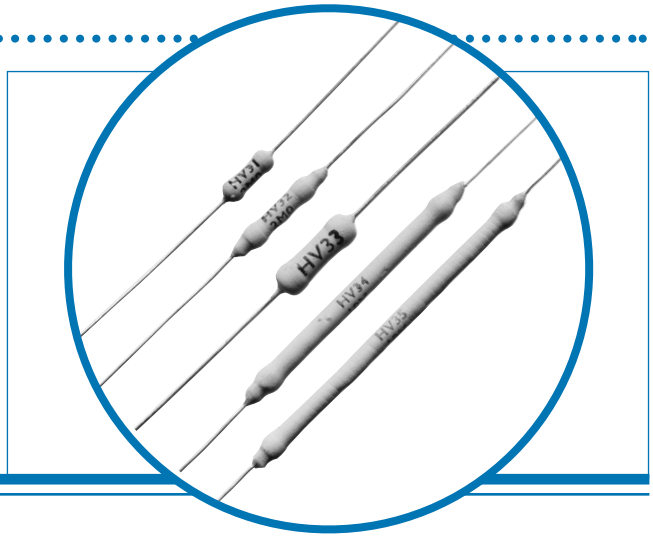
High Voltage Thick film Resistors

OBSOLETE

TT electronics
Welwyn Components

HV Series

- **Resistance up to 250M**
- **Low temperature coefficient of resistance**
- **Working voltage up to 20kV**
- **Sets of resistors with matched characteristics**



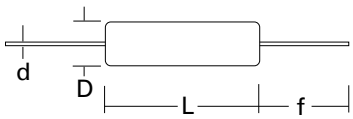
Electrical Data

		HV31	HV32	HV33	HV34	HV35	Notes
Power rating at 70°C	watts	0.5	0.75	1.0	1.25	1.5	
Resistance range	ohms	1K to 50M	1K to 100M	1K to 150M	1K to 200M	1K to 250M	
Limiting element voltage	volts	1K	2K	4K	7K	10K	In air
		2K	4K	8K	14K	20K	In oil
TCR (20°C to 70°C)	ppm/°C	50, 100					
Resistance tolerance	%	1, 2, 5					
Values		E24 preferred					Any value to special order
Thermal impedance	°C/watt	75	70	60	65	60	
Ambient temperature range	°C	-55 to 155					

Physical Data

Dimensions (mm) & Weight (g)

Type	L max	D max	f min	d nom	PCB mounting centres	Min. Bend Radius	Wt. nom
HV31	10.0	3.5	30.0	0.6	12.7	0.6	0.5
HV32	19.0	3.6	30.0	0.6	25.4	0.6	0.6
HV33	15.5	5.3	30.0	0.8	18.4	1.2	1.2
HV34	38.0	3.6	30.0	0.6	44.4	0.6	1.1
HV35	50.8	3.6	30.0	0.6	57.2	0.6	1.25



Construction

A ruthenium oxide based resistive film is fired onto a high quality ceramic former. Brass caps are force fitted to the HV32, 34 and 35 rods and plated steel caps to the 31 and 33 sizes. The resistor is adjusted to value by a helical cut in the film, and the body is protected with a silicone coating.

Marking

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

Solvent Resistance

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

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

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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Performance Data

		Maximum	Typical
Load at rated power: 1000 hours at 70°C	ΔR%	1	0.3
Shelf life: 12 months at room temperature	ΔR%	0.3	0.1
Derating from rated power at 70°C		Zero at 155°C	
Noise (in a decade of frequency)	μV/V	5	<2.5
Voltage coefficient of resistance	ppm/volt	5	<2

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 potted, 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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