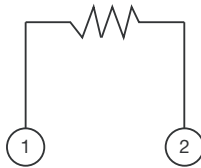


## High Value, High Voltage Precision SIP Thin Film Resistor, Through Hole Network


**SCHEMATIC**

**FEATURES**

- High nominal precision resistors (value range 50K to 10M)
- Highly accurate resistance tolerance (up to  $\pm 0.01\%$ )
- Conformal coating flame resistant (UL 94 V-0) rating
- Ultra low TCR ( $\pm 5$  ppm/ $^{\circ}$ C)
- High voltage
- Flame resistant (UL 94 V-0 rating)
- HVPS2 voltage rating up to 1800 V
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**Note**

\* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

**APPLICATIONS**

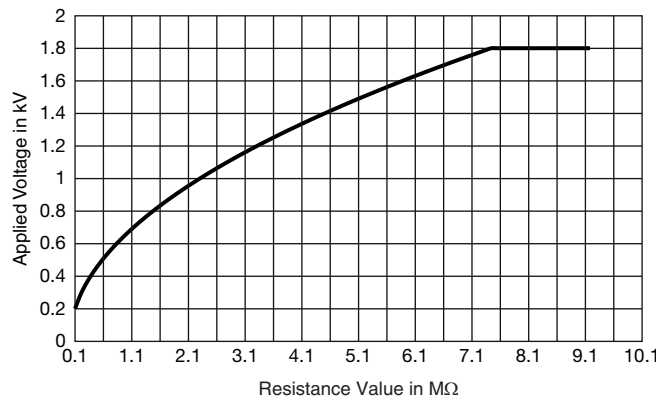
- Precise instrumentation (medical, test etc.)
- Precision amplifiers

STANDARD ELECTRICAL SPECIFICATIONS		
TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	2	-
Resistance Range	50 000 $\Omega$ to 5000 k $\Omega$ (HVPS1) 100 000 $\Omega$ to 10 000 k $\Omega$ (HVPS2)	-
TCR: Absolute	5 ppm/ $^{\circ}$ C to 25 ppm/ $^{\circ}$ C	-55 $^{\circ}$ C to +125 $^{\circ}$ C
TCR: Tracking	-	-
Tolerance: Absolute	$\pm 0.01\%$ to $\pm 1.0\%$	Maximum at +70 $^{\circ}$ C
Tolerance: Ratio	-	-
Power Rating: Resistor	125 mW (HVPS1) 400 mW (HVPS2)	-
Power Rating: Package	-	-
Stability: Absolute	$\Delta R \pm 0.05\%$	2000 h at +70 $^{\circ}$ C
Stability: Ratio	-	-
Voltage Coefficient	< 1.0 ppm/V	-
Working Voltage	250 V (HVPS1) up to 1800 V (HVPS2) <sup>(1)</sup>	-
Operating Temperature Range	-55 $^{\circ}$ C to +125 $^{\circ}$ C	-
Storage Temperature Range	-	-
Noise	< -30 dB	-
Thermal EMF	< 0.1 $\mu$ V/ $^{\circ}$ C	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01\%$	1 year at +25 $^{\circ}$ C
Shelf Life Stability: Ratio	-	-

**Note**

<sup>(1)</sup> See chart

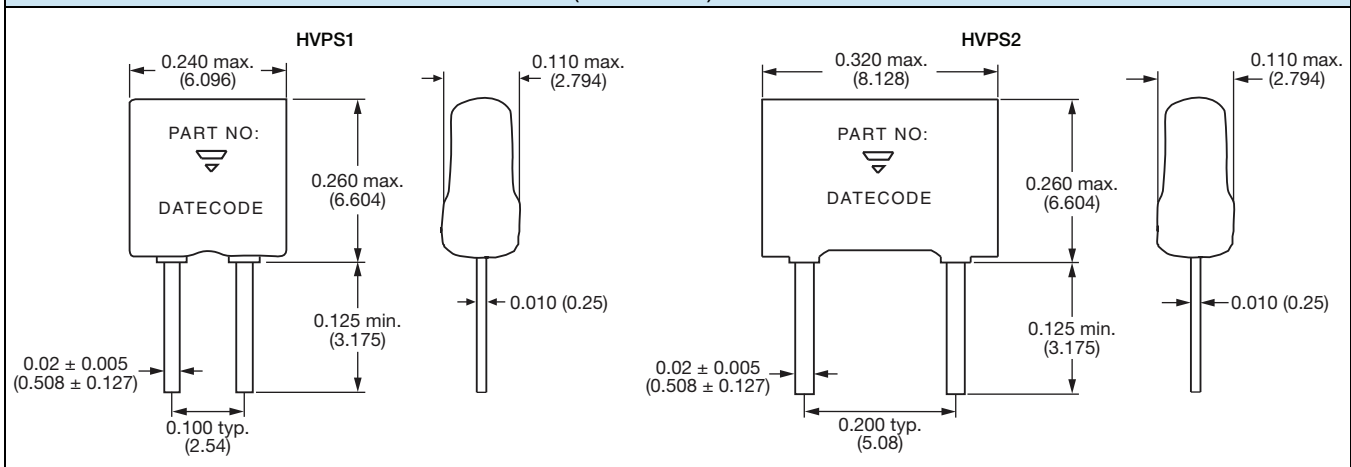
**HVPS2 MAX. APPLIED VOLTAGE AT 0.400 W VERSUS RESISTANCE VALUE**



**HVPS2 VOLTAGE RATING BY VALUE**

WORKING VOLTAGE	RESISTANCE RANGE
200	100K to 400K
400	401K to 900K
600	901K to 1.6M
800	1.6M to 2.5M
1000	2.5M to 3.6M
1200	3.6M to 4.9M
1400	4.9M to 6.4M
1600	6.4M to 8.1M
1800	8.1M to 10M

**DIMENSIONS AND IMPRINTING in inches (millimeters)**





MECHANICAL SPECIFICATIONS	
Resistive Element	Passivated nichrome
Substrate Material	Alumina
Body	Epoxy coated
Terminals	Copper alloy
Tin/Lead Option	Sn60 - Sn63
Lead (Pb)-free Option	Sn96.5, Ag3.0, Cu0.5
Tin/Lead and Lead (Pb)-free Finish	Hot solder dip

**GLOBAL PART NUMBER INFORMATION**

New Global Part Numbering: HVPS1E1003QUF

H	V	P	S	1	E	1	0	0	3	Q	U	F	
H	V	P	S	2	S	Y	2	0	0	3	T	U	F

<b>GLOBAL MODEL</b> (3 or 4 digits)  <b>HVPS1</b> <b>HVPS2</b> (tin lead)  <b>HVPS1S</b> <b>HVPS2S</b> (lead (Pb)-free) (e1)	<b>TCR</b>  <b>E</b> = 25 ppm/°C <b>D</b> = 15 ppm/°C <b>Y</b> = 10 ppm/°C <b>Z</b> = 5 ppm/°C	<b>RESISTANCE</b>  First 3 digits are significant figures. Last digit specifies the number of zeros to follow.  e.g.: 1001 = 1K 1002 = 10K 1005 = 10M	<b>TOLERANCE</b>  <b>A</b> = 0.05 % <b>B</b> = 0.1 % <b>D</b> = 0.5 % <b>F</b> = 1.0 % <b>Q</b> = 0.02 % <b>T</b> = 0.01 %	<b>PACKAGING</b>  <b>UF</b> = tubed
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**Historical Part Number example: HVPS1E5004B (for reference purposes only)**

<b>HVPS1</b>	<b>E</b>	<b>5004</b>	<b>B</b>
SERIES	TCR CHARACTERISTICS	RESISTANCE	TOLERANCE



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