

# High Pulse Wirewound Resistor, Noise Suppressor



## FEATURES

- High grade alumina ceramic core
- AEC-Q200 qualified
- High ignition pulse, 25 kV, withstanding resistive winding element
- Non-flammable silicone cement coating
- Material categorization:  
for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
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(5-2008)

## APPLICATIONS

- EMI / RFI noise suppression in automotive ignition

## STANDARD ELECTRICAL SPECIFICATIONS

TYPE	RATED DISSIPATION $P_{40}$	RESISTANCE RANGE	RESISTANCE TOLERANCE
HPR 1/2 (HPR0500)	0.50 W	1 k $\Omega$ to 5 k $\Omega$	$\pm 10 \%$ , $\pm 20 \%$
HPR 1 (HPR1000)	1 W	1 k $\Omega$ to 5 k $\Omega$	$\pm 10 \%$ , $\pm 20 \%$

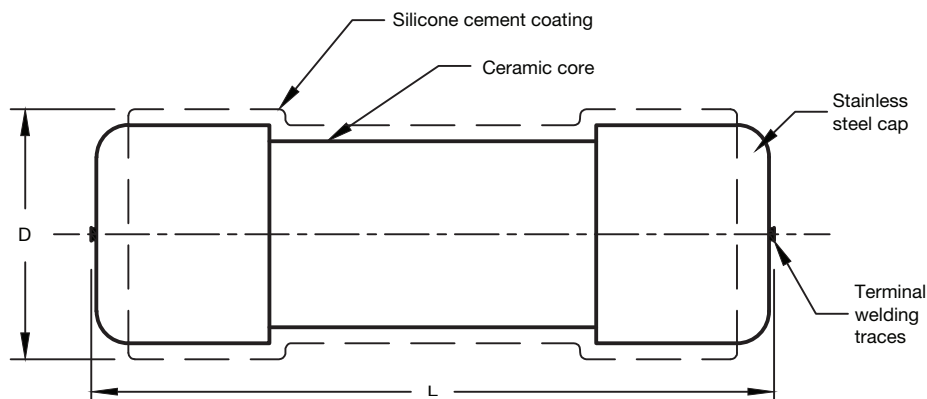
### Note

- Customer specific resistance values are available on request

## TECHNICAL SPECIFICATIONS

DESCRIPTION	HPR 1/2 (HPR0500)	HPR 1 (HPR1000)
Imperial size	0411	0519
Typical inductance	22 $\mu$ H at 1 MHz, 1 V	
Basic specifications	IEC 60115-1	
Climatic category	-55 ° C / +200 ° C / 56 days	
Termination	Stainless steel caps	
Lacquer coating	Non-flammable silicone cement meets IEC 60115-1, 4.26 active flammability test and IEC 60115-1, 4.35 passive flammability needle flame test	

## DIMENSIONS



### Notes

- Top surface of the product will be covered by silicone cement lacquer
- There will be no lacquer on the edges and on the side surface of the product

**DIMENSIONS** - HPR types, mass and relevant physical dimensions

TYPE	Ø D <sub>MAX.</sub> (mm)	Ø L <sub>MAX.</sub> (mm)	MASS (mg)
HPR 1/2 (HPR0500)	3.9	11.0	360
HPR 1 (HPR1000)	5.2	18.7	993

**PART NUMBER AND PRODUCT DESCRIPTION**

Part Number: HPR0500005001KLX00

H	P	R	0	5	0	0	0	0	5	0	0	1	K	L	X	0	0
MODEL			VARIANT			TCR / MATERIAL			RESISTANCE			TOLERANCE		PACKAGING			
HPR0500 HPR1000			0 = neutral			0 = neutral			3 digit value 1 digit multiplier  Multiplier 1 = *10 <sup>1</sup>			K = ± 10 % M = ± 20 %		LX			

Product Description: HPR0500 5K 10% LX CD xxxx

HPR0500	5K	10 %	LX	CD xxxx
TYPE	RESISTANCE	TOLERANCE	PACKAGING	SPECIAL CODE
HPR1000	5K = 5 kΩ	K = ± 10 % M = ± 20 %		

**PACKAGING**

PRODUCT TYPE	CODE	QUANTITY	DESCRIPTION
HPR 1/2 (HPR0500)	LX	1000	Loose in box
HPR 1 (HPR1000)			

**DESCRIPTION**

Stainless steel caps (terminations) are firmly pressed onto a high grade alumina ceramic core. The resistor element is a resistive wire, which is wound on this ceramic core. Resistor is coated with silicone cement protective coating designed for electrical, mechanical and climatic protection.

**MATERIALS**

Vishay acknowledges the following systems for the regulation of hazardous substances:

- IEC 62474, Material Declaration for Products of and for the Electrotechnical Industry, with the list of declarable substances given therein <sup>(1)</sup>
- The Global Automotive Declarable Substance List (GADSL) <sup>(2)</sup>
- The REACH regulation (1907/2006/EC) and the related list of substances with very high concern (SVHC) <sup>(3)</sup> for its supply chain

The products do not contain any of the banned substances as per IEC 62474, GADSL, or the SVHC list, see [www.vishay.com/how/leadfree](http://www.vishay.com/how/leadfree).

Hence the products fully comply with the following directives:

- 2000/53/EC End-of-Life Vehicle Directive (ELV) and Annex II (ELV II)
- 2011/65/EU Restriction of the Use of Hazardous Substances Directive (RoHS) with amendment 2015/863/EU
- 2012/19/EU Waste Electrical and Electronic Equipment Directive (WEEE)

Vishay pursues the elimination of conflict minerals from its supply chain, see the Conflict Minerals Policy at [www.vishay.com/doc?49037](http://www.vishay.com/doc?49037).

**ASSEMBLY**

The resistor is mounted inside noise suppressor spark plug cap. Connections are taken mechanically through a spring and through a screw electrode. The suitability of conformal coatings, if applied, shall be qualified by appropriate means to ensure the long-term stability of the whole system.

**Notes**

- (1) The IEC 62474 list of declarable substances is maintained in a dedicated database, which is available at <http://std.iec.ch/iec62474>  
 (2) The Global Automotive Declarable Substance List (GADSL) is maintained by the American Chemistry Council and available at [www.gadsl.org](http://www.gadsl.org)  
 (3) The SVHC list is maintained by the European Chemical Agency (ECHA) and available at <http://echa.europa.eu/candidate-list-table>

TEST PROCEDURES AND REQUIREMENTS				
IEC 60115-1 CLAUSE	IEC 60068-2 TEST METHOD	TEST	PROCEDURE	REQUIREMENTS PERMISSIBLE CHANGE ( $\Delta R$ )
8.1	-	Short time overload	Room temperature; 10 x rated power $P_{40}$ ; 10 cycles; 5 s ON and 45 s OFF	$\pm 2 \%$
10.1	14 (Na)	Rapid change of temperature	30 min at $-55 \text{ }^{\circ}\text{C}$ and 30 min at $+155 \text{ }^{\circ}\text{C}$ ; 500 cycles	$\pm 3 \%$
10.3	-	Climatic sequence:	-	$\pm 2 \%$
10.3.4.2	2 (Bb)	dry heat	16 h; $200 \text{ }^{\circ}\text{C}$	
10.3.4.3	30 (Db)	damp heat (accelerated) 1 <sup>st</sup> cycle	24 h; $55 \text{ }^{\circ}\text{C}$ ; 90 % to 100 % RH	
10.3.4.4	1 (Ab)	cold	2 h; $-40 \text{ }^{\circ}\text{C}$	
10.3.4.5	13 (M)	low air pressure	2 h; 8.5 kPa; $15 \text{ }^{\circ}\text{C}$ to $35 \text{ }^{\circ}\text{C}$	
10.3.4.6	30 (Db)	damp heat remaining cyclic	5 days; $55 \text{ }^{\circ}\text{C}$ ; 95 % to 100 % RH; 5 cycles	
10.4	78 (Cab)	Damp heat (steady state)	56 days; $(40 \pm 2) \text{ }^{\circ}\text{C}$ ; $(93 \pm 5) \%$ RH	$\pm 3 \%$
7.2	-	Endurance (at room temperature)	1000 h; loaded with 116 % of $P_{40}$ ; 1.5 h ON and 0.5 h OFF	$\pm 3 \%$
7.3	-	Endurance (at $200 \text{ }^{\circ}\text{C}$ )	1000 h; without load	$\pm 5 \%$



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