High Pulse Wirewound Resistor, Noise Suppressor



FEATURES

- High grade alumina ceramic core
- 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

Pb-free

RoHS COMPLIANT

HALOGEN FREE GREEN (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	0.50 W	1 kΩ to 5 kΩ	± 10 %, ± 20 %
HPR 1	1 W	1 kΩ to 5 kΩ	± 10 %, ± 20 %
HPR 2	2 W	1 kΩ to 5 kΩ	± 10 %, ± 20 %

Note

- Customer specific resistance values are available on request

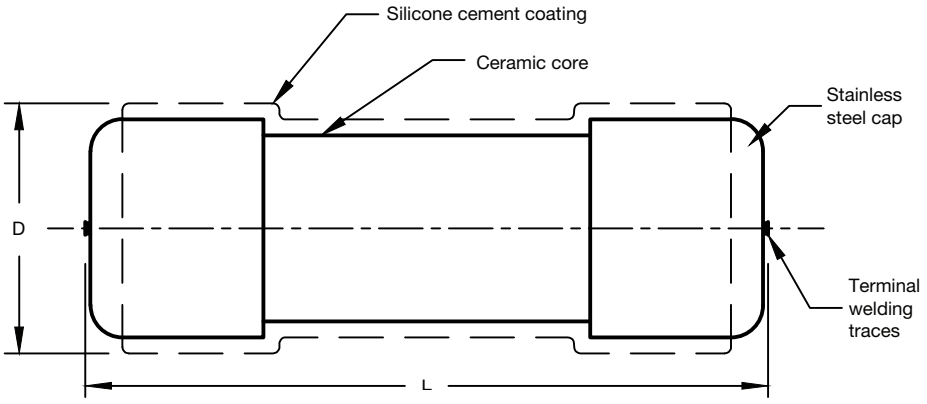
TECHNICAL SPECIFICATIONS			
DESCRIPTION	HPR 1/2	HPR 1	HPR 2
Imperial size	0411	0519	0522
Typical inductance	22 µH at 1 MHz, 1 V		
Basic specifications	IEC 60115-1		
Climatic category	-55 ° C / +200 ° C / 56 days		
Termination	Stainless steel caps		
Lacquer coating	Non-flammable silicone cement meets IEC 60115-1, 4.26 active flammability test and IEC 60115-1, 4.35 passive flammability needle flame test		

DIMENSIONS - HPR types, mass and relevant physical dimensions			
TYPE	Ø $D_{MAX.}$ (mm)	Ø $L_{MAX.}$ (mm)	MASS (mg)
HPR0500	3.9	11.0	360
HPR1000	5.2	18.7	993
HPR2000	4.8	22	1135

For technical questions, contact: ww1resistors@vishay.com

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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

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** **HPR2000**	**0** = neutral	**0** = neutral	3 digit value 1 digit multiplier **Multiplier** **1** = $*10^1$	**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 **HPR2000**	**5K** = 5 kΩ	**K** = ± 10 % **M** = ± 20 %		

PACKAGING

PRODUCT TYPE	CODE	QUANTITY	DESCRIPTION
HPR0500	LX	1000	Loose in box
HPR1000			
HPR2000			

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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 (1)
- The Global Automotive Declarable Substance List (GADSL) (2)
- The REACH regulation (1907/2006/EC) and the related list of substances with very high concern (SVHC) (3) 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.

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.

ASSEMBLY

The resistor is mounted inside noise suppressor spark plug cap. Connections are taken mechanically through a spring and through a screw electrode. The spark plug cap assembly is molded with epoxy resin or thermoplastic materials.

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
(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 (ΔR)
4.13	-	Short time overload	Room temperature; 10 x rated power P_{40}; 10 cycles; 5 s ON and 45 s OFF	± 2 %
4.19	14 (Na)	Rapid change of temperature	30 min at -55 °C and 30 min at +155 °C; 500 cycles	± 3 %
4.23	-	Climatic sequence:	-	± 2 %
4.23.2	2 (Bb)	dry heat	16 h; 200 °C	
4.23.3	30 (Db)	damp heat (accelerated) 1st cycle	24 h; 55 °C; 90 % to 100 % RH	
4.23.4	1 (Ab)	cold	2 h; -40 °C	
4.23.5	13 (M)	low air pressure	2 h; 8.5 kPa; 15 °C to 35 °C	
4.23.6	30 (Db)	damp heat remaining cyclic	5 days; 55 °C; 95 % to 100 % RH; 5 cycles	
4.24	78 (Cab)	Damp heat (steady state)	56 days; (40 ± 2) °C; (93 ± 5) % RH	± 3 %
4.25.1	-	Endurance (at room temperature)	1000 h; loaded with 116 % of P_{40}; 1.5 h ON and 0.5 h OFF	± 3 %
4.25.3	-	Endurance (at 200 °C)	1000 h; without load	± 5 %

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