Axial Cemented Fusible Wirewound Safety Resistor

FEATURES

- UL1412 recognized fusible wirewound resistor; UL file no. E362452
- Maximum surge voltage handling capability: 4 kV (for $R > 75\ \Omega$) as per IEC 61000-4-5
- Fusing time < 25 s for 45 W overload
- Sn coated Cu termination wires
- $P_{40} = 3$ W
- Ohmic range: 4.7 Ω to 100 Ω, 5 %
- Non-flammable silicon cement coating for immediate interruption without flame and explosion when mains voltage (230 V_{AC}) is applied
- Specially designed for applications in electric appliances, energy meters
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

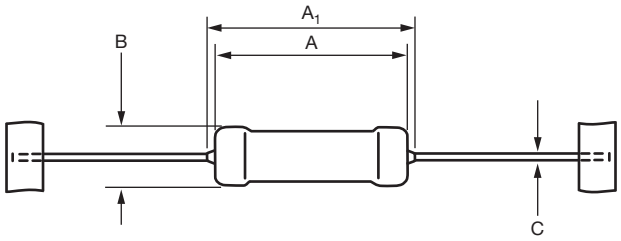
AC03 safety resistor (AC03..CS) is designed to be used as fusible safety resistor (or, AC mains input resistors). It uses specially selected resistive winding wire and special non flammable silicon cement coating material to ensure safe and silent fusing operation in overload conditions. The resistor fuses “without a bang” when AC mains voltage is applied. At the same time, it acts as a in-rush current limiting resistor for the normal operation. The specially developed lacquer coating has superior thermal and electrical insulating properties. This allows designers to more easily meet the requirements of safety approval, whilst eliminating the need to put additional fuses in series with the input resistor.

STANDARD ELECTRICAL SPECIFICATIONS					
TYPE	POWER RATING P_{40} W	POWER RATING P_{70} W	LIMITING VOLTAGE $U_{max.}$ V	RESISTANCE RANGE (1) Ω TCR = ± 200 ppm/K	TOLERANCE %
AC03..CS	3	2.5	$\sqrt{P \times R}$	4.7 to 100	± 5

Note

(1) Resistance value to be selected for ± 5 % from E24 series, special ohmic values are available on request

DIMENSIONS



DIMENSIONS - Resistor types, mass, and relevant physical dimensions					
TYPE	$A_{max.}$	$A_{1\ max.}$	$B_{max.}$	$C_{nom.}$	MASS
AC03..CS	13.0 mm	19 mm	6.0 mm	0.8 mm	0.78 g

PACKAGING						
TYPE	CODE	QUANTITY	DESCRIPTION	TAPE WIDTH	PITCH	DIMENSION
AC03..CS	AC	500 pieces	Taped acc. to IEC60286-1; fan folded in a box	63 mm	5 mm	85 mm x 58 mm x 260 mm

PART NUMBER AND PRODUCT DESCRIPTION

Part Number: AC03000002209JACCS

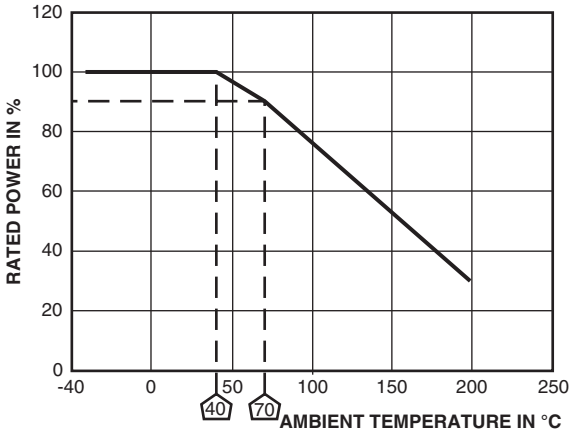
A	C	0	3	0	0	0	0	0	2	2	0	9	J	A	C	C	S

TYPE	VERSION	TCR/MATERIAL	RESISTANCE	TOLERANCE	PACKAGING	SPECIAL
AC03000 = AC03-CS	**0** = neutral	**0** = standard	**3 digit value** **1 digit multiplier** MULTIPLIER **8** = $*10^{-2}$ **9** = $*10^{-1}$ **0** = $*10^{0}$ **1** = $*10^{1}$	**J** = ± 5 %	**AC** = 500 pieces ammo pack	**CS** = safety resistor

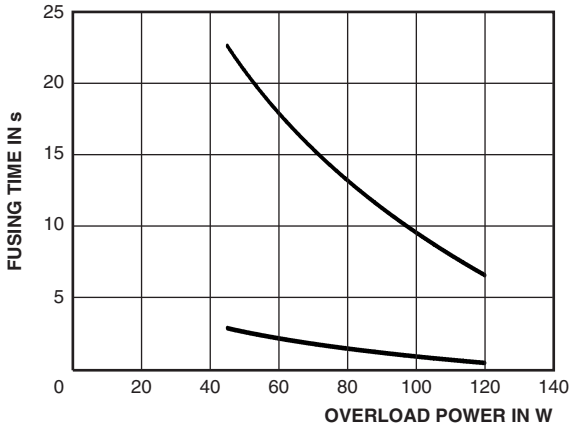
Product Description: AC03-CS 22R 5 % AC G63 CD1281

AC03-CS	22R	5 %	AC	G63	CD1281
TYPE	RESISTANCE	TOLERANCE	PACKAGING	TAPE WIDTH	SPECIAL

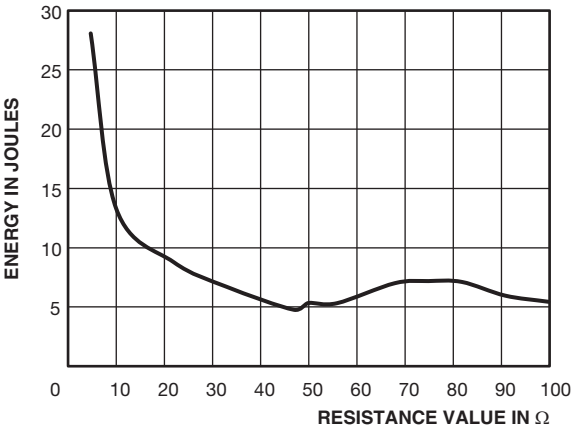
FUNCTIONAL PERFORMANCE



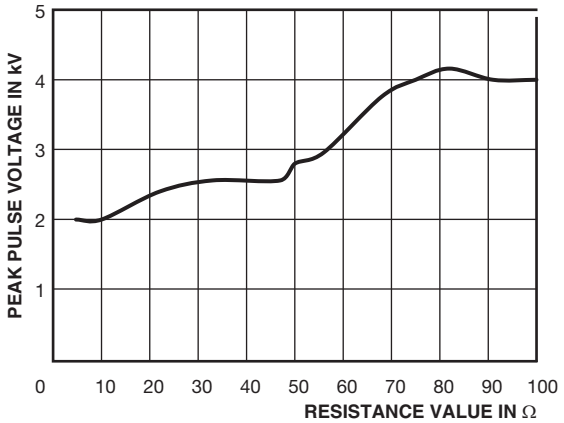
DERATING



FUSING CHARACTERISTICS OF AC03..CS: 4.7 Ω ≤ R ≤ 100 Ω



PULSE ENERGY CURVE FOR AC03..CS
(1.2/50 µs; 10 pulses at 30 s interval)



1.2/50 µs PEAK VOLTAGE LIMIT
(10 pulses at 30 s interval)

PERFORMANCE	
TEST	**PERMISSIBLE CHANGE (ΔR)**
Climatic Category (LCT/UCT/Days)	40/200/56
Climatic Sequence, IEC 60115-1, 4.23	± (1 % R + 0.05 Ω)
Damp Heat, Steady State, IEC 60115-1, 4.24, (40 ± 2) °C, 56 days, (93 ± 3) % RH	± (5 % R + 0.1 Ω)
Endurance at room temperature (116 % P_{70}), 1000 h, IEC 60115-1, 4.25.2	± (5 % R + 0.1 Ω)
Endurance at UCT, 200 °C (30 % P_{70}), 1000 h, IEC 60115-1, 4.25.3	± (5 % R + 0.1 Ω)
Resistance to Soldering Heat, IEC 60115-1, 4.18, (260 ± 5) °C, (10 ± 1) s	± (0.5 % R + 0.05 Ω)
Robustness of Termination, IEC 60115-1, 4.16	± (0.5 % R + 0.05 Ω)
Short Time Overload, IEC 60115-1, 4.13, 10 x Rated Power for 5 s	± (2 % R + 0.1 Ω)
1.2 µs/50 µs Surge Test (impedance of Surge Tester is 2 Ω) as per IEC 61000-4-5; 10 Pulses at 30 s interval	± (5 % R + 0.1 Ω)
Fail safe mains Fusing at 230 V_{AC}	Resistance > 100 kΩ, fusing time < 2 s (fusing without flames, explosion)

Notes

- Please see document “Vishay Material Category Policy”: www.vishay.com/doc?99912
- Refer www.vishay.com/doc?28730 for other details
- For further information, please contact: ww1resistors@vishay.com

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.