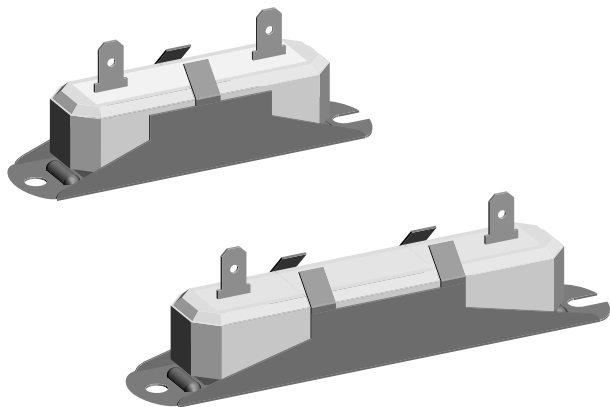




## Wirewound Resistors, Special Purpose, Commercial, High Power



## FEATURES

- High power / size ratio
- Quick connect terminals
- Complete welded construction
- High surge capability
- Non-inductive styles available
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package
- SPR2214 is available with a center terminal option
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS\*

Available

HALOGEN

FREE

Available

GREEN

[5-2008]

Available

## 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.

## STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25^{\circ}\text{C}}$ W WITHOUT HEAT SINK	POWER RATING $P_{25^{\circ}\text{C}}$ W WITH HEAT SINK <sup>(1)</sup>	RESISTANCE RANGE $\Omega$	TOLERANCE $\pm \%$
SPR2213	SPR-2213	40	70	0.5 to 24K	5, 10
SPR2214	SPR-2214	50	100	1.0 to 44K	5, 10

## Note

<sup>(1)</sup> Recommended heat sink is 12" x 12" x 0.125" thick aluminum panel (294 sq. in. surface area).

## TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	SPR2213, SPR2214 RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	$\pm 30$ 10 $\Omega$ and above; $\pm 50$ below 10 $\Omega$
Short Time Overload	-	10 x rated power for 5 s
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	$^{\circ}\text{C}$	-65 to +275
Dielectric Withstanding Voltage	$V_{AC}$	2500

## GLOBAL PART NUMBER INFORMATION

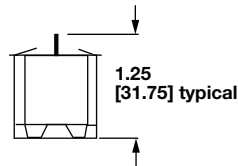
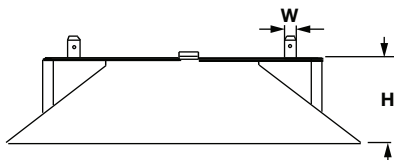
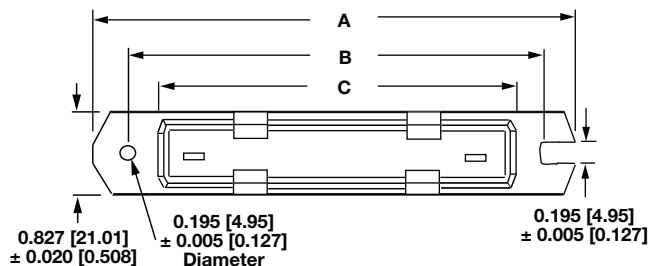
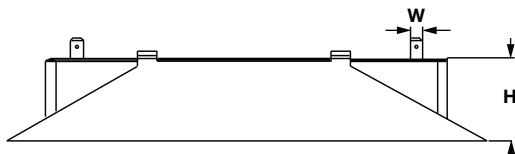
Global Part Numbering example: SPR221375R000JD

S	P	R	2	2	1	3	7	5	R	0	0	0	J	D		
GLOBAL MODEL			VALUE		TOLERANCE		PACKAGING				SPECIAL					
SPR2213 SPR2214			R = decimal K = thousand R15000 = 0.15 Ω 1K5000 = 1500 Ω		J = ± 5.0 % K = ± 10.0 %		D = skin pack (S51) K = RoHS compliant, skin pack (E51)				(dash number) (up to 2 digits) from 1 to 99 as applicable					
Historical Part Numbering example: SPR-2213 75 Ω 5 % S51																
SPR-2213			75 Ω			5 %			S51							
HISTORICAL MODEL			RESISTANCE VALUE			TOLERANCE CODE			PACKAGING							

## Note

- Brackets used with "D" packaging code are not RoHS/Green compliant.

**DIMENSIONS** in inches [millimeters]

**SPR2213**

**SPR2214**


GLOBAL MODEL	DIMENSIONS in inches [millimeters]				
	A TYPICAL	B ± 0.031 [0.794]	C ± 0.031 [0.794]	W ± 0.005 [0.127]	H TYPICAL
SPR2213	3.375 [85.73]	3.00 [76.20]	2.50 [63.50]	0.250 x 0.031 [6.35 x 0.794]	0.810 [20.57]
SPR2214	4.563 [115.90]	4.125 [104.78]	3.625 [92.08]	0.250 x 0.031 [6.35 x 0.794]	0.810 [20.57]

**MATERIAL SPECIFICATIONS**

**Element:** copper-nickel alloy or nickel-chrome alloy, depending on resistance value

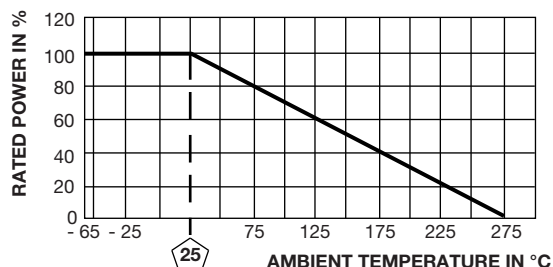
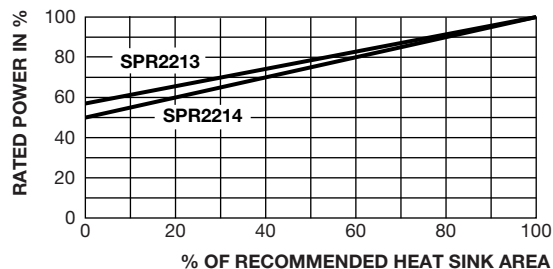
**Core:** steatite ceramic

**Body:** steatite ceramic case with inorganic potting compound

**Terminals:** nickel plated steel

**Bracket:** zinc plated steel

**Part Marking:** DALE, model, wattage, value, tolerance, date code

**DERATING**

**HEAT SINK DERATING**


PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal Shock	Rated power applied until thermally stable, then a minimum of 15 min at -55 °C	± (2.0 % + 0.05 Ω) ΔR
Short Time Overload	10 x rated power for 5 s	± (2.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V <sub>RMS</sub> , 1 min	± (0.1 % + 0.05 Ω) ΔR
Low Temperature Storage	-65 °C for 24 h	± (2.0 % + 0.05 Ω) ΔR
High Temperature Exposure	250 h at +275 °C	± (2.0 % + 0.05 Ω) ΔR
Moisture Resistance	MIL-STD-202 Method 106, 7b not applicable	± (2.0 % + 0.05 Ω) ΔR
Shock, Specified Pulse	MIL-STD-202 Method 213, 100 g's for 6 ms, 10 shocks	± (0.2 % + 0.05 Ω) ΔR
Vibration, High Frequency	Frequency varied 10 Hz to 2000 Hz, 20 g peak, 2 directions 6 h each	± (0.2 % + 0.05 Ω) ΔR
Load Life	1000 h at rated power, +25 °C, 1.5 h "ON", 0.5 h "OFF"	± (3.0 % + 0.05 Ω) ΔR



## 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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

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.