

## Metal Oxide Resistors, Standard



### FEATURES

- Rugged metal oxide film
- Lead (Pb)-free solder contacts
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Compatible with "Restriction of the use of Hazardous Substances" (RoHS) directive 2002/95/EC (issue 2004)
- High power dissipation (up to 4 W)
- High temperature coating (refer power derating graph)
- Used in applications with high endurance demands



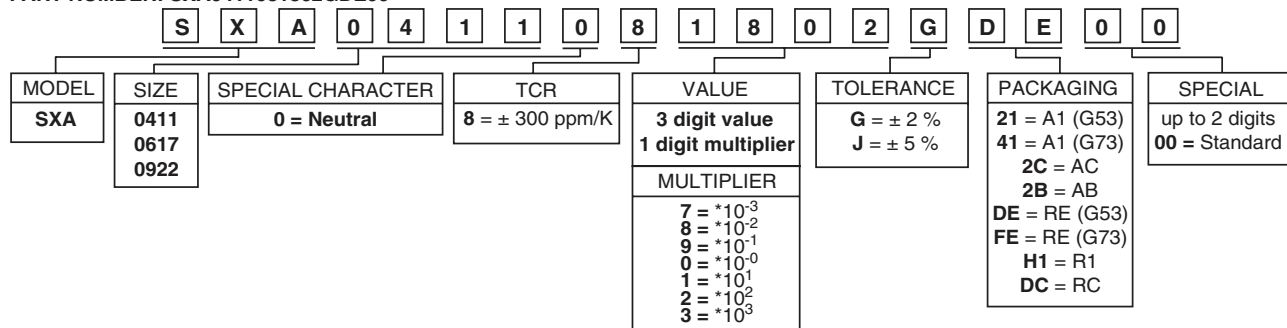
### STANDARD ELECTRICAL SPECIFICATIONS

MODEL	POWER RATING P <sub>70°C</sub> W	LIMITING ELEMENT VOLTAGE MAX. V <sub>≅</sub>	TEMPERATURE COEFFICIENT ppm/K	TOLERANCE %	RESISTANCE RANGE Ω	E-SERIES
SXA0411	0.7	$\sqrt{P \times R}$	300	± 2 ± 5	1R0 - 9R53 R16 - 9R53	48 24
SXA0411	1.0	350	300	± 2 ± 5	10R - 100K 10R - 100K	48 24
SXA0617	1.5	$\sqrt{P \times R}$	300	± 2 ± 5	1R0 - 9R53 R16 - 9R53	48 24
SXA0617	2.0	500	300	± 2 ± 5	10R - 100K 10R - 100K	48 24
SXA0922	4.0	500	300	± 2 ± 5	10R - 68K 5R1 - 68K	48 24

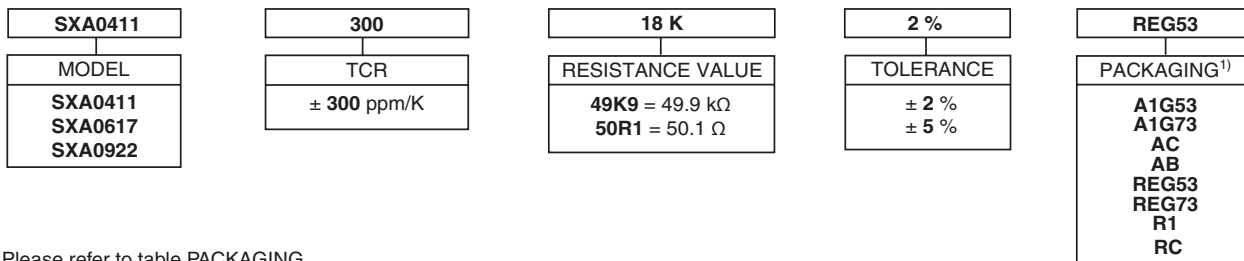
- TCR 200 ppm/°C on request
- Coating: grey
- Marking: SXA0411 and SXA0617 color code (no TCR band); SXA0922 print marked

### PART NUMBER AND PRODUCT DESCRIPTION

PART NUMBER: SXA0411081802GDE00



PRODUCT DESCRIPTION: SXA0411 300 18 K 2 % REG53

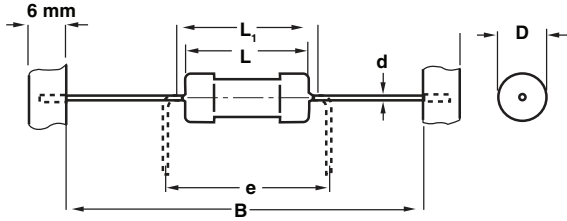


<sup>1)</sup> Please refer to table PACKAGING.

### Note

- The PART NUMBER shown above is to facilitate the unified part numbering system for ordering products.

**DIMENSIONS**

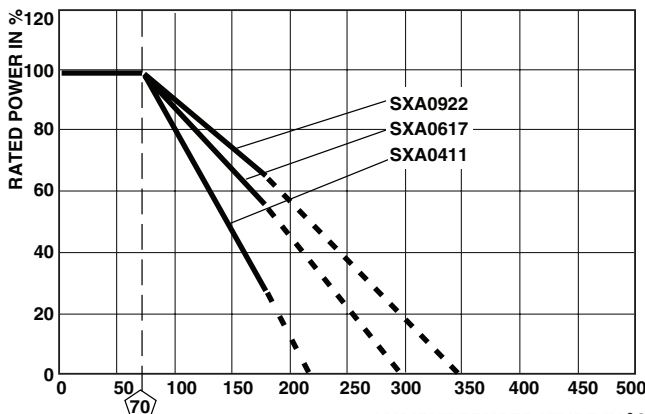


MODEL	DIMENSIONS [in millimeters]					
	D	L	L <sub>1</sub> max	B	d	e
SXA0411	3.8 -0.4	11.0 -0.6	14.0	73 ± 1 <sup>1)</sup>	0.7	12.5
SXA0617	5.2 -0.5	15.8 -0.8	19.8	83 ± 1 <sup>1)</sup>	0.8	17.5
SXA0922	8.4 -0.6	22.2 -0.9	26.2	83 ± 1	0.8	25.0

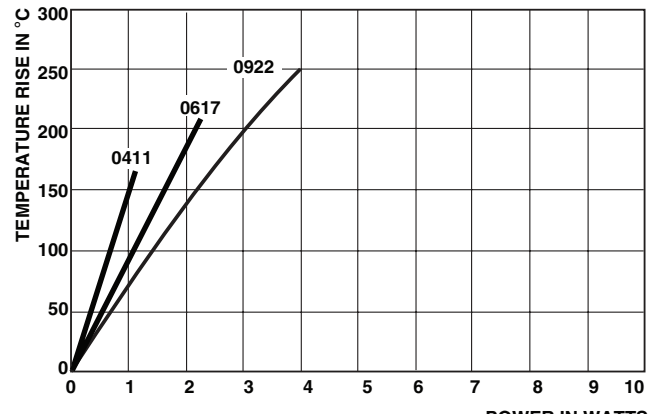
- Taping in acc. with IEC60286
- D and L measured in acc. with IEC60294
- d according to IEC60301
- 1) Also available in 53 mm tape

TECHNICAL SPECIFICATIONS						
PARAMETER	UNIT	SXA0411		SXA0617		SXA0922
Rated Dissipation at 70 °C	W	0.7	1	1.5	2	4
Limiting Element Voltage <sup>1)</sup>	V <sub>≡</sub>	≤ 350		≤ 500		≤ 500
Insulation Voltage (1 min)	V <sub>eff</sub>	> 600		> 600		> 600
Thermal Resistance	K/W	≤ 150		≤ 110		≤ 70
Insulation Resistance	Ω	≥ 10 <sup>11</sup>				
Category Temperature Range	°C	- 55 to + 175				
Terminal Strength, axial	N	> 60		> 80		> 80
Failure Rated	10 <sup>-8</sup> /h	< 3				
Weight	g	0.52		1.1		3.2

1) Rated Voltage  $\sqrt{P \times R}$

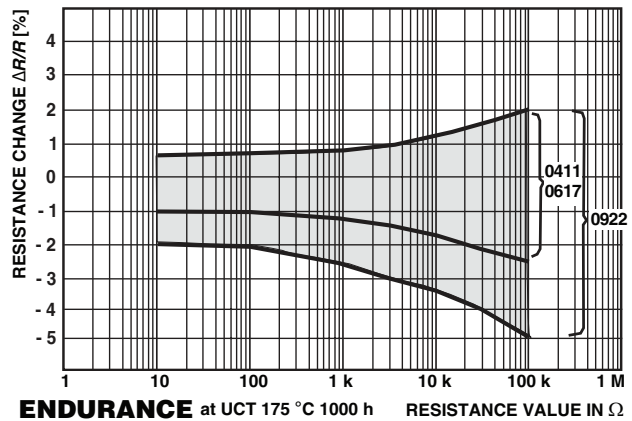
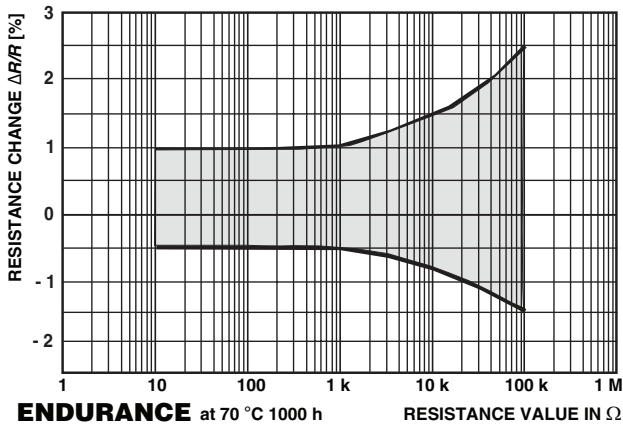
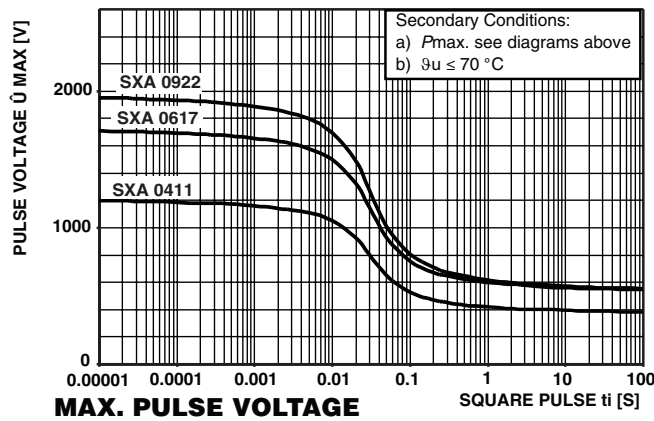
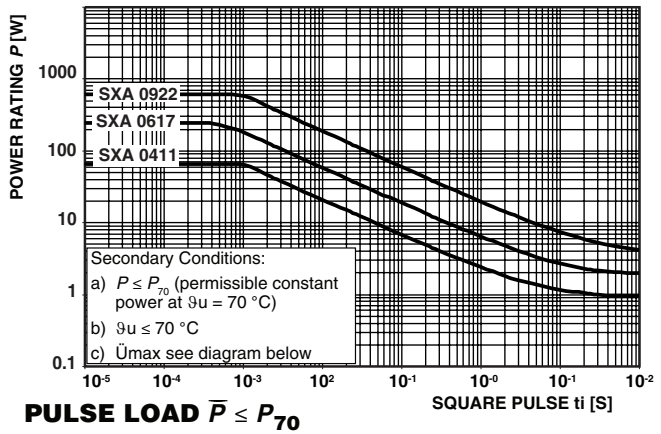
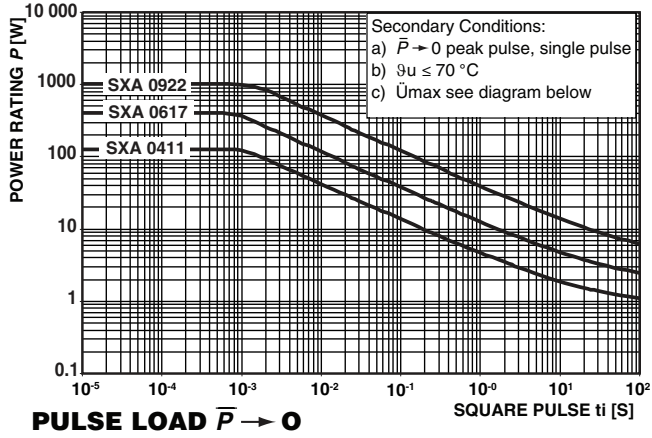


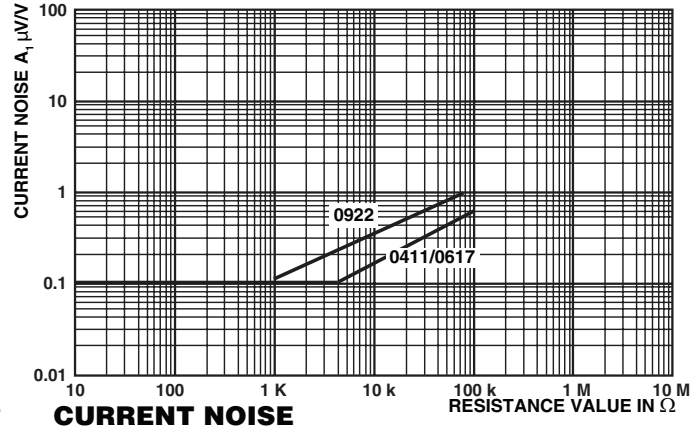
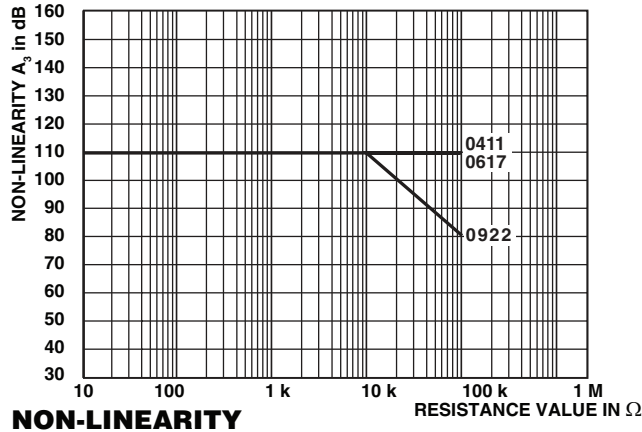
**DERATING**



**TEMPERATURE RISE**

PACKAGING						
MODEL	REEL			BOX		
	PIECES/REEL	CODE	MIN. ORDER QTY PACKAGING UNITS	PIECES/BOX	CODE	MIN. ORDER QTY PACKAGING UNITS
SXA0411	2500	RE	1	1000	A1	1
SXA0617	1000	R1	2	500	AC	2
SXA0922	500	RC	2	250	AB	4





PERFORMANCE			
TEST	CONDITIONS OF TEST	REQUIREMENTS <sup>1)</sup>	
		0411/0617	0922
Endurance at 70 °C IEC 60115-1 4.25.1	1000 hours at 70 °C 1.5 "ON", 0.5 hours "OFF" 8000 hours at 70 °C 1.5 hours "ON", 0.5 "OFF"	≤ ± 2.5 % ≤ ± 5.0	≤ ± 5.0 % ≤ ± 10 %
Endurance at UCT IEC60115-1 4.25.3	1000 hours at 175 °C without load 8000 hours at 175 °C without load	≤ ± 2.5 % ≤ ± 5.0 %	
Overload Test IEC 60115-1 4.13	Short time overload at 2.5 x rated power or twice the limiting voltage for 5 seconds	≤ ± 0.5 %	
Thermal Shock IEC 60115-1 4.19 IEC60068-2-14	Rapid change between upper and lower category temperature	≤ ± 0.5 %	
Climatic Sequence IEC60115-1 4.23	Dry heat, damp heat cyclic, cold, low air pressure	≤ ± 1.0 %	
Damp Heat Steady State IEC 60115-1 4.18 IEC60068-2-3	56 days at 40 °C and 93 % relative humidity and U = 0.1 x rated power	≤ ± 1.0 %	
Resistance to Soldering Heat IEC 60115-1 4.18 IEC60068-2-20	10 seconds at 260 °C solder bath temperature	≤ ± 0.25 %	
Robustness of Terminations IEC 60115-1 4.16	Tensile, bending and torsion	≤ ± 0.25 %	
Vibration IEC 60115-1 4.22	0.75 mm or 10 g, 10 Hz - 500 Hz	≤ ± 0.25 %	

<sup>1)</sup> For a resistance range from 10 Ω to 100 kΩ

APPLICABLE SPECIFICATIONS
<ul style="list-style-type: none"> <li>• CECC 40000</li> <li>• EN 140 000/IEC 60115-1</li> </ul>



## Disclaimer

All product specifications and data are subject to change without notice.

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.