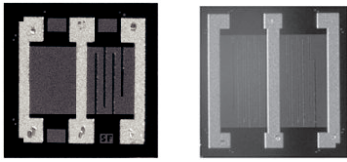




# Thin Film Resistor Divider Network on Silicon, User Trimmable



Product may not be to scale

The SC7 and SCB series resistor chips offer a combination of nichrome user trimmability as a single resistor or as a ratio trim while maintaining the excellent TCR tracking characteristics of two resistors on the same chip.

The SC7 and SCBs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The SC7 and SCBs are 100 % electrically tested and visually inspected to MIL-STD-883, method 2032 class H or class K.

### FEATURES

- Wire bondable
- Chip size  
SC7 - 0.030" x 0.030"  
SCB - 0.050" x 0.050"
- Resistance range  $R_T$ :  
100  $\Omega$  to 20 k $\Omega$  for SC7  
100  $\Omega$  to 50 k $\Omega$  for SCB
- Case: 0303, 0505
- Silicon substrate
- Power: 250 mW or 400 mW capability
- Resistor material: Nichrome
- User trimmable

### APPLICATIONS

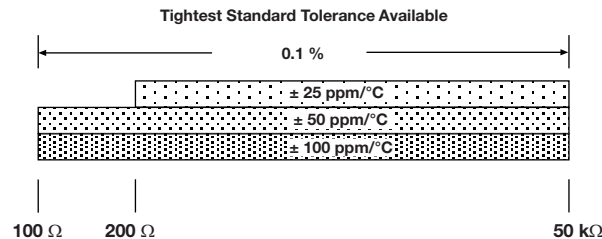
Vishay EFI SC7 and SCB chip resistors have excellent power dissipation capability and are ideally suited for prototyping.

Typical application areas are:

- Amplifiers
- Oscillators
- Attenuators
- Couplers
- Filters

Recommended for hermetic environments where die is not exposed to moisture

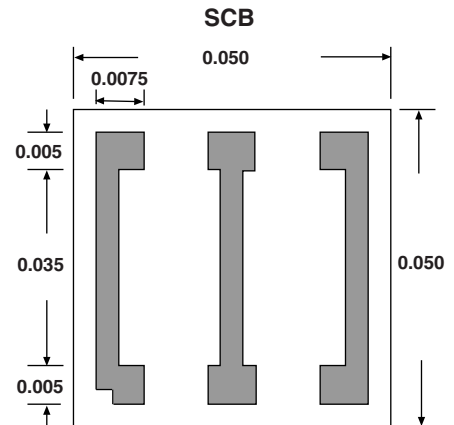
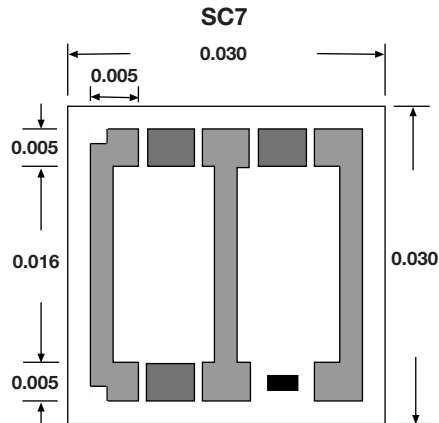
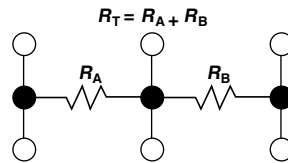
TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES		
PARAMETER	VALUE	UNIT
Total Resistance Range	100 to 50K	$\Omega$
Standard Tolerances	$\pm 0.1$	%
TCR	$\pm 25, \pm 50, \pm 100$	ppm/ $^{\circ}$ C



STANDARD ELECTRICAL SPECIFICATIONS		
PARAMETER	VALUE	UNIT
Noise, MIL-STD-202, Method 308	- 20 typ.	dB
Stability, 1000 h, + 125 $^{\circ}$ C at Rated Power	+ 0.1 max. $\Delta R/R$	%
Operating Temperature Range	- 55 to + 125	$^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	+ 0.25 max. $\Delta R/R$	%
High Temperature Exposure, + 150 $^{\circ}$ C, 100 h	+ 0.25 max. $\Delta R/R$	%
Dielectric Voltage Breakdown	400	V
Insulation Resistance	$10^{12}$ min.	$\Omega$
Operating Voltage	100 max.	V
DC Power Rating at 70 $^{\circ}$ C Derating to Zero at 150 $^{\circ}$ C	0.25 max. (0.030") 0.4 max. (0.050")	W
5 x Rated Power Short-Time Overload, + 25 $^{\circ}$ C, 5 s	+ 0.25 max. $\Delta R/R$	%

### Note

- Performance characteristics are not guaranteed once user trimmed

**DIMENSIONS** in inches

**SCHEMATIC**


MECHANICAL SPECIFICATIONS	
PARAMETER	VALUE
Chip Size	0.030" x 0.030" ± 0.003" (0.76 mm x 0.76 mm ± 0.076 mm) 0.050" x 0.050" ± 0.003" (1.27 mm x 1.27 mm ± 0.076 mm)
Chip Thickness	0.010" ± 0.002" (0.25 mm ± 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO <sub>2</sub>
Resistor Material	Nichrome
Bonding Pad Size	0.005" x 0.005" (0.127 mm x 0.127 mm) min.
Number of Pads	6
Pad Material	15 kÅ minimum gold standard
Backing	None, lapped semiconductor silicon

GLOBAL PART NUMBER INFORMATION																
Global Part Number: SC75000KCKKGNHS																
Global Part Number Description: SC7 5K 10 % RT 0.25 % 100 ppm/°C 10 ppm/°C Au None H WS																
S	C	7	5	0	0	0	0	K	C	K	K	G	N	H	W	S
MODEL	RESISTANCE (R TOTAL)	RESISTANCE MULTIPLIER CODE	TOL. CODE (%)	RATIO TOL. (%)	TCR (ppm/°C)	TC TRACK (ppm/°C)	TERMINATION	BACK METAL	VISUAL CLASS	PACKAGING CODE						
SC7 = 30 x 30 size SCB = 50 x 50 size	First 4 digits are significant figures of resistance	B = 0.01 A = 0.1 0 = 1 1 = 10	B = 0.1 C = 0.25 D = 0.5 F = 1.0 G = 2.0 J = 5.0 K = 10	B = 0.1 C = 0.25 D = 0.5 F = 1.0 G = 2.0 U = User N = No	E = ± 25 C = ± 50 K = ± 100 M = ± 250	G = ± 2 J = ± 5 K = ± 10 N = No	G = Au A = Al	G = Au N = None	H = Class H K = Class K	WS = Waffle pack 100 min., 1 mult						



## 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 and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. 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.