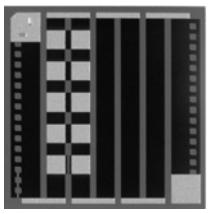
Thin Film Power Resistors



Product may not be to scale

The PWB series resistor chips offer a 1 W power rating in a relatively small size. They offer one of the best combinations of size and power available.

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

FEATURES

- Wire bondable
- Power: 1 W
- Chip size: 0.070 inches square
- Case: 0707
- Resistance range: 0.3 Ω to 20 kΩ
- Oxidized silicon substrate for good power dissipation
- Resistor material: Tantalum nitride, self-passivating
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

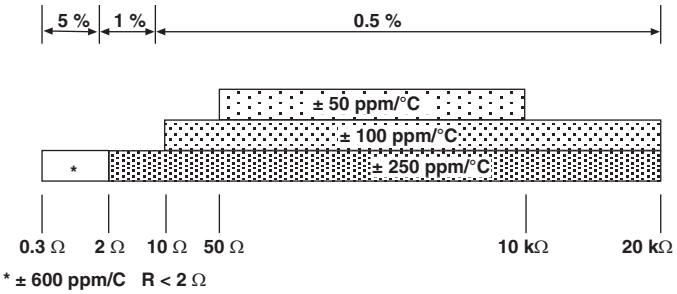
GREEN (5-2008)

APPLICATIONS

The PWB resistor chips are used mainly in higher power circuits of amplifiers where increased power loads require a more specialized resistor.

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES, AND TOLERANCES		
PARAMETER	**VALUE**	**UNIT**
Total Resistance Range	0.3 to 20K	Ω
Standard Tolerances	± 0.5, ± 1, ± 5	%
TCR	± 50, ± 100, ± 250	ppm/°C

Tightest Standard Tolerance Available



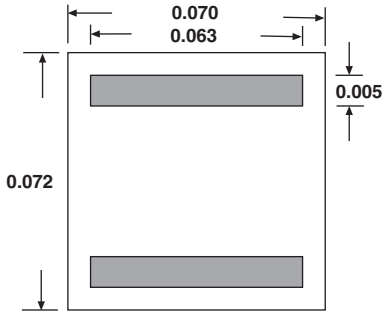
* ± 600 ppm/C R < 2 Ω

STANDARD ELECTRICAL SPECIFICATIONS		
PARAMETER	**VALUE**	**UNIT**
Noise, MIL-STD-202, Method 308 100 Ω to 250 kΩ < 100 Ω or > 251 kΩ	 - 35 typ. - 20 typ.	dB
Moisture Resistance, MIL-STD-202, Method 106	± 0.5 max. Δ*R*/*R*	%
Stability, 1000 h, + 125 °C, 500 mW	± 0.5 max. Δ*R*/*R*	%
Operating Temperature Range	- 55 to + 125	°C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	± 0.1 max. Δ*R*/*R*	%
High Temperature Exposure, + 150 °C, 100 h	± 0.2 max. Δ*R*/*R*	%
Dielectric Voltage Breakdown	200	V
Insulation Resistance	10^{12} min.	Ω
Operating Voltage Steady State 5 x Rated Power	 100 max. 200 max.	V
DC Power Rating at + 70 °C (Derated to zero at + 175 °C) (Conductive epoxy die attach to alumina substrate)	1	W
5 x Rated Power Short-Time Overload, + 25 °C, 5 s	± 0.25 max. Δ*R*/*R*	%

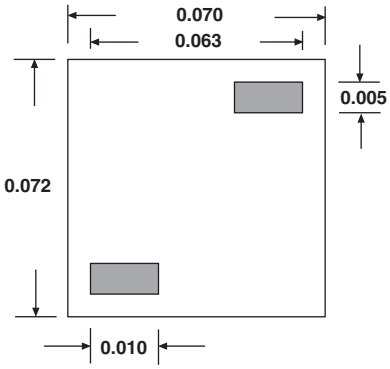
For technical questions, contact: efi@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

DIMENSIONS in inches



TYPICAL RANGE
R < 240 Ω



TYPICAL RANGE
240 Ω to 20 kΩ

SCHEMATIC



MECHANICAL SPECIFICATIONS	
PARAMETER	**VALUE**
Chip Size	0.070" x 0.070" ± 0.005" (1.781 mm x 1.781 mm ± 0.127 mm)
Chip Thickness	0.010" ± 0.002" (0.254 mm ± 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO_2
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.005" x 0.010" (0.127 mm x 0.254 mm) minimum
Number of Pads	2
Pad Material	10 kÅ minimum aluminum (Au optional)
Backing	None, lapped semiconductor silicon (Au back optional)

GLOBAL PART NUMBER INFORMATION

Global Part Number: **PWB50000FKANHWS** **PWB12500KCGGKWS**

Global Part Number Description: **PWB 5K 1 % 100 ppm Al None H WS** **PWB 1.25K 10 % 100 ppm Au Au K WS**

P	W	B	5	0	0	0	0	F	K	A	N	H	W	S

MODEL	RESISTANCE	RESISTANCE MULTIPLIER CODE	TOLERANCE CODE (%)	TCR (ppm/°C)	TERMINATION	BACK METAL	VISUAL CLASS	PACKAGING CODE
PWB 70 x 70 size Power resistor	First 4 digits are significant figures of resistance	**D** = 0.0001 **C** = 0.001 **B** = 0.01 **A** = 0.1 **0** = 1 **1** = 10	**D** = 0.5 **F** = 1.0 **G** = 2.0 **J** = 5.0 **K** = 10	**C** = ± 50 **K** = ± 100 **M** = ± 250 **Z** = + 600/ - 100	**G** = Au **A** = Al	**G** = Au **N** = None	**H** = Class H **K** = Class K	**WS** = Waffle pack 100 min, 1 mult

For technical questions, contact: efi@vishay.com

THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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.

© 2021 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED