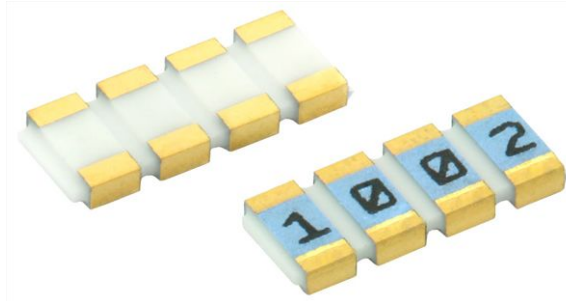


## High Temperature (230 °C) High Precision Thin Film Wraparound Chip Resistor Arrays



PRAHT arrays can be used in most applications requiring a matched pair (or set) of resistor elements at very high temperature up to 230 °C. The networks provide 2 ppm/°C TCR tracking, a ratio tolerance as tight as 0.05 % and outstanding stability. They are available in 1 mm, 1.35 mm, and 1.82 mm pitch.

### FEATURES

- Tight TCR (10 ppm/°C) and TCR tracking (to 2 ppm/°C)
- Very low noise < - 35 dB and voltage coefficient < 0.01 ppm/V
- Ratio tolerance to 0.05 %
- Gold terminations for temperature up to 230 °C
- High temperature (230 °C)
- SnAg terminations for temperature up to 200 °C
- SMD wraparound chip resistor array
- Thin film technology
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



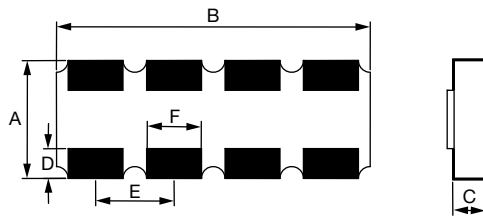
**RoHS**  
COMPLIANT  
**GREEN**  
(5-2008)  
Available

### TYPICAL PERFORMANCE

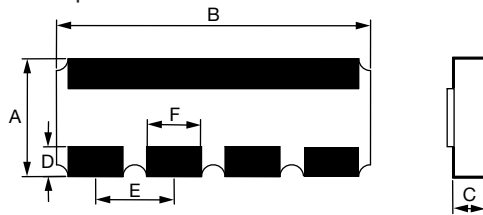
	ABSOLUTE	TRACKING
TCR	10 ppm/°C	2 ppm/°C
	ABSOLUTE	RATIO
TOL.	0.5 %	0.05 %

### DIMENSIONS

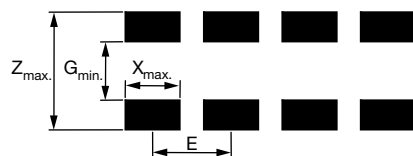
Independent resistors



One common point



Suggested land pattern  
(according to IPC-7351A)



DIM.	PRAHT 100		PRAHT 135		PRAHT 182	
	mm	mil	mm	mil	mm	mil
A	1.52 ± 0.152	60 ± 6	1.91 ± 0.152	75 ± 6	3.06 ± 0.152	120 ± 6
B	B = N x E (± 0.2 mm) B = N x E (± 8 mil)					
C	0.5 ± 0.127	20 ± 5	0.5 ± 0.127	20 ± 5	0.5 ± 0.127	20 ± 5
D	0.38 ± 0.13	15 ± 5	0.38 ± 0.13	15 ± 5	0.40 ± 0.13	16 ± 5
E	1	40	1.35	53	1.825	72
F	0.7 ± 0.1	27.6 ± 4	1.05 ± 0.1	41.4 ± 4	1.525 ± 0.1	60 ± 4
G <sub>min.</sub>	0.49	19.3	0.88	34.5	1.99	78.3
X <sub>max.</sub>	0.66	26	1.01	39.8	1.49	58.7
Z <sub>max.</sub>	2.57	101.2	2.96	116.5	4.11	161.8



GLOBAL PART NUMBER INFORMATION <sup>(1)</sup>																
New Global Part Numbering: PRAHT100I4-1K00BWGT																
P	R	A	H	T	1	0	0	-	1	K	0	0	B	W	G	T
GLOBAL MODEL	CONFIG.	NUMBERS OF RESISTORS	VALUE <sup>(2)</sup>	ABS. TOL.	RATIO TOL.	TERMINATION <sup>(3)</sup>	PACKAGING									
PRAHT 100 PRAHT 135 PRAHT 182	I: Independent C: Common	4	Decimal R or K	D = 0.5 % F = 1 % B = 0.1 %	B = 0.1 % W = 0.05 %	N: SnAg over nickel barrier G: Gold over nickel barrier	Blank = Waffle pack T = Tape and reel									
								N and G: Lead (Pb)-free/ RoHS version								

**Notes**

- <sup>(1)</sup> Part number can only have 18 digits. Depending on information needed a compromise has to be found. Consult Vishay.
- <sup>(2)</sup> When the last digit(s) of the ohmic value is (are) 0, it (they) can be omitted.  
E.g.: PRAHT100I4-2K20BWGT → can be ordered under PRAHT100I4-2K2BWGT  
PRAHT100I4-1K00BWGT → can be ordered under PRAHT100I4-1KBWGT
- <sup>(3)</sup> N termination for temperature up to 200 °C.  
G termination for temperature up to 230 °C.

STANDARD ELECTRICAL SPECIFICATIONS							
MODEL	SIZE	RESISTANCE RANGE Ω	POWER RATING PER RESISTOR <sup>(1)</sup> W	ABSOLUTE TOLERANCE ± %	RATIO TOLERANCE %	ABSOLUTE TCR <sup>(2)</sup> ± ppm/°C	RATIO TCR <sup>(2)</sup> ± ppm/°C
PRAHT 100	100	10 to 250K	0.010	0.1, 0.5, 1	0.05, 0.1	15	2
PRAHT 135	135	10 to 500K	0.0125	0.1, 0.5, 1	0.05, 0.1	15	2
PRAHT 182	182	10 to 2M	0.020	0.1, 0.5, 1	0.05, 0.1	15	2

**Notes**

- <sup>(1)</sup> At + 215 °C
- <sup>(2)</sup> At - 40 °C to + 215 °C

CLIMATIC SPECIFICATIONS	
Operating temperature range	- 55 °C to + 215 °C
Storage temperature range	- 55 °C to + 230 °C

PERFORMANCES		
TEST	SPECIFICATIONS	
Noise	≤ - 35 dB	
Voltage coefficient	≤ 0.01 ppm/V	
Limiting voltage	PRAHT 100	50 V
	PRAHT 135	100 V
	PRAHT 182	150 V

MECHANICAL SPECIFICATIONS	
Substrate	Alumina
Technology	Thin Film
Film	Nickel chromium with mineral passivation
Terminations <sup>(1)</sup>	N type: SnAg over nickel barrier
	G type: Gold over nickel barrier

**Note**

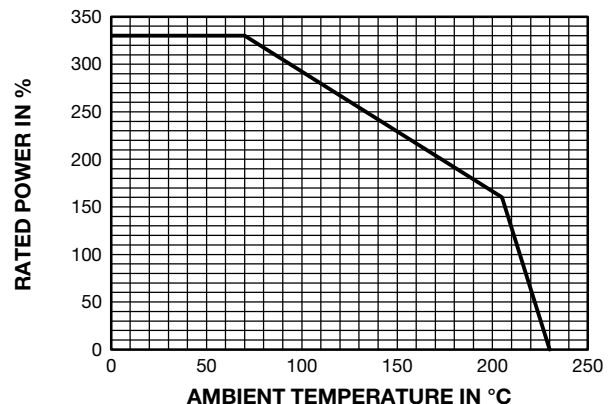
- <sup>(1)</sup> N terminations for temperatures up to 200°C.  
G terminations for temperatures up to 230°C.

**PACKAGING**

Several types of packaging are available: Waffle-pack and tape and reel.

SIZE	MOQ	NUMBER OF PIECES PER PACKAGE	
		WAFFLE PACK MAX. QUANTITY PER BOX	TAPE AND REEL
PRAHT 100 x 4	100	60	100   4000
PRAHT 135 x 4	100	60	100   4000
PRAHT 182 x 4	100	50	100   4000

**DERATING**





## PACKAGING RULES

### Waffle Pack

Can be filled up to maximum quantity indicated in the table here above, taking into account the minimum order quantity. When quantity ordered exceeds maximum quantity of a single waffle pack, the waffle packs are stacked up on the top of each other and closed by one single cover.

**To get “not stacked up” waffle pack in case of ordered quantity > maximum number of pieces per package: Please consult Vishay Sfernice for specific ordering code.**

### Tape and Reel

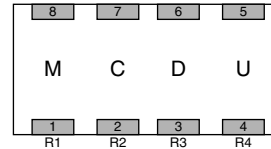
Can be filled up to maximum quantity indicated in the table here above, taking into account the minimum order quantity. When quantity ordered is between the MOQ and the maximum reel capacity, only one reel is provided.

**When several reels are needed for ordered quantity within MOQ and maximum reel capacity: Please consult Vishay Sfernice for specific ordering code.**

## MARKING

On the primary package, printed information includes Vishay S.A. trademark series and model, schematic number of resistors, ohmic value, absolute tolerance, ratio tolerance, type of termination: B tinned over nickel barrier.

### Marking on parts:



E.g.: Ohmic value 13K:

Coded 1302: M = 1, C = 3, D = 0, U = 2

PERFORMANCE			
TESTS	CONDITIONS CECC REQUIREMENTS	DRIFTS	
		ABSOLUTE PER (Typical Values)	RATIO
Overload	2.5 Un/2 s	0.05 % Rn + 0.05 Ω	0.01 % Rn
Climatic sequences	- 55 °C + 155 °C/5 moisture cycles	0.1 % Rn + 0.05 Ω	0.01 % Rn
Thermal shock	- 55 °C + 155 °C/5 cycles 30'	0.05 % Rn + 0.05 Ω	0.01 % Rn
Load life	1000 h/Pn at 215 °C	0.5 % Rn	0.25 % Rn
	8000 h/Pn at 215 °C	0.7 % Rn	0.4 % Rn
Resistance to solder heat	260 °C/10 s	0.05 % Rn + 0.05 Ω	0.01 % Rn
Moisture resistance	0.01 Pn at + 40 °C 93 % RH	0.1 % Rn + 0.05 Ω	0.01 % Rn
High temperature storage	1000 h/no load at + 155 °C	0.1 % Rn + 0.05 Ω	0.02 % Rn

### Note

- Rn: Nominal resistance



## 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.**

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Resistor Networks & Arrays](#) category:*

*Click to view products by [Vishay](#) manufacturer:*

Other Similar products are found below :

[M8340105K1002FGD03](#) [M8340105K3301JCD03](#) [M8340106M2002GCD03](#) [M8340107K1471FGD03](#) [M8340107K2002GCD03](#)  
[M8340107K2261FGD03](#) [M8340107M1501GGD03](#) [M8340108K1001FCD03](#) [M8340108K3240FGD03](#) [M8340108K4991FGD03](#)  
[M8340108K6192FGD03](#) [M8340109MA010GHD03](#) [EXB-24N121JX](#) [EXB-24N330JX](#) [EXB-24N470JX](#) [744C083101JTR](#) [EXB-U14360JX](#)  
[EXB-U18390JX](#) [744C083270JTR](#) [745C102472JP](#) [767161104G](#) [770101223](#) [ACAS06S0830339P100](#) [ACAS06S0830343P100](#)  
[ACAS06S0830344P100](#) [RM2012A-102/104-PBVW10](#) [RM2012A-102503-PBVW10](#) [8B472TR4](#) [268-15K](#) [ACAS06S0830341P100](#)  
[ACAS06S0830342P100](#) [ACAS06S0830345P100](#) [EXB-U14470JX](#) [EXB-U18330JX](#) [266-10K](#) [M8340102K1051FBD04](#)  
[M8340105M1001JCD03](#) [M8340106K4701GGD03](#) [M8340107K1004GGD03](#) [M8340108K1000GGD03](#) [M8340108K1202GGD03](#)  
[M8340108K3901GGD03](#) [M8340108K4992FGD03](#) [M8340108K5111FGD03](#) [M8340109K2202GCD03](#) [RKC8BD104J](#) [DFNA100-1TS](#)  
[745X101473JP](#) [RMKD408-10KBW](#) [MDP16-03-3K01FE04](#)