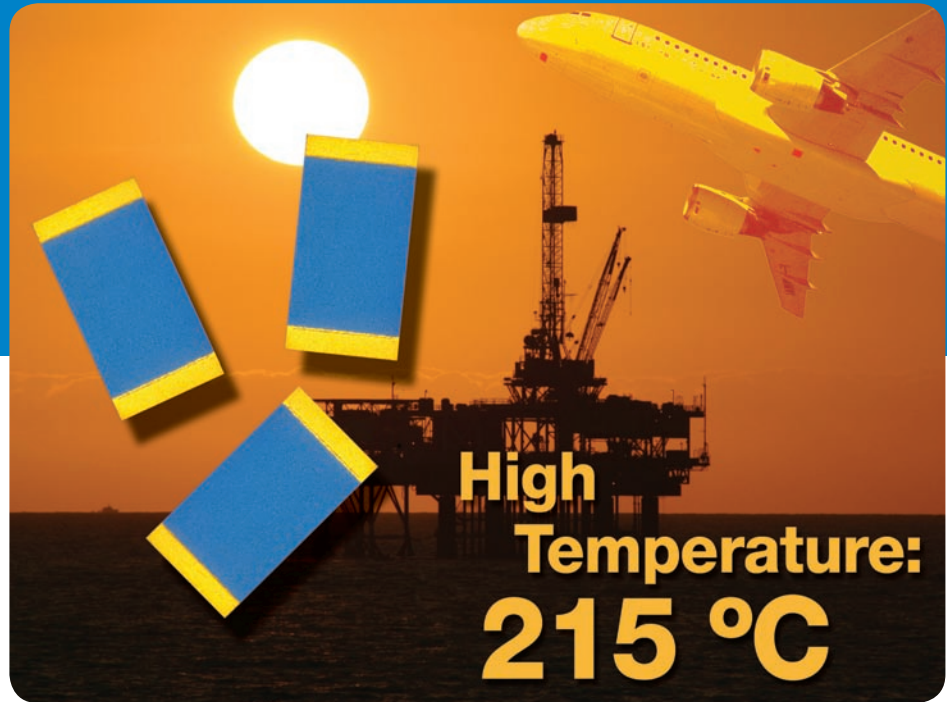




THIN FILM CHIP RESISTORS

PHT



High Temperature (215 °C) – High Precision Wraparound Thin Film Chip Resistors

KEY BENEFITS

- Operating temperature range [- 55 °C; + 215 °C]
- Storage temperature [- 55 °C; + 230 °C]
- Temperature coefficient down to 25 ppm [- 55 °C; + 215 °C]
- Tolerance down to 0.05 %
- Wide ohmic range (10R – 7M Ω)
- Load life stability 0.5 % after 1000 h at P_n at 215 °C

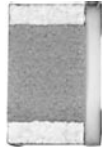
APPLICATIONS

- Down hole drilling instruments

High Temperature (215 °C) – High Precision Wraparound Thin Film Chip Resistors

FEATURES

- Operating temperature range: -55 °C; +215 °C
- Storage temperature: -55 °C; +230 °C
- Gold terminations (< 1 μ thick)
- 4 sizes available (0603, 0805, 1206, 2010) - other sizes upon request
- Temperature coefficient down to 25 ppm (-55 °C; +215 °C)
- Tolerance down to 0.05 %
- Load life stability, 0.5 % max after 1000 h at 215 °C (ambient) at Pn
- Compliant to RoHS directive 2002/95/EC



INTRODUCTION

For applications such as down hole applications, the need for parts able to withstand very severe conditions (temperature as high as 215 °C powered or up to 230 °C un-powered) has leaded Vishay Sfernice to push out the limit of the thin film technology.

Designers might read the application note: Power Dissipation Considerations in High Precision Vishay Sfernice Thin Film Chip Resistors and Arrays (P, PPA etc...) (High Temperature Application) www.vishay.com/doc:53047 in conjunction with this data sheet to help them to properly design their PCBs and get the best performances of the PHT. Vishay Sfernice R&D engineers will be willing to support any customer design considerations.

DIMENSIONS in millimeters (inches)



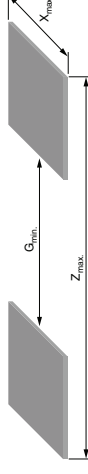
CASE SIZE	A		B		C	D/E	
	MAX. TOL. +0.152 (+0.006)	MIN. TOL. -0.152 (-0.006)	MAX. TOL. +0.127 (+0.005)	MIN. TOL. -0.127 (-0.005)		NOMINAL	TOLERANCE
0603	1.52 (0.060)		0.85 (0.033)		0.5 (0.02) ± 0.127 (0.005)	0.38 (0.015)	0.13 (0.005)
0805	1.91 (0.075)		1.27 (0.050)			0.40 (0.016)	
1206	3.06 (0.120)		1.60 (0.063)			0.48 (0.019)	
2010	5.08 (0.200)		2.54 (0.100)				

** Please see document "Vishay Material Category Policy": www.vishay.com/doc:299902

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For technical questions, contact sfer@vishay.com

SUGGESTED LAND PATTERN (to IPC-7351A)



CHIP SIZE	DIMENSIONS (in millimeter)			
	Z _{max}	Z _{min}	G _{min}	X _{max}
0603	2.37	0.35	0.35	0.98
0805	2.76	0.74	0.74	1.40
1206	3.91	1.85	1.85	1.73
2010	5.93	3.71	3.71	2.67

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Series	0603, 0805, 1206, 2010	
Ohmic Range (1)	10R to 7MΩ (depending on series)	
Temperature Coefficient (2)	25 ppm/°C, 50 ppm/°C, 100 ppm/°C	-55 °C; +215 °C
Tolerance	0.05 %, 0.1 %, 0.5 %, 1 %	
Power Rating (Pn) (3)	12.5 mW to 100 mW	215 °C
Operating Temperature Range	-55 °C; +215 °C	
Limiting Voltage (3)	75 V to 300 V	
Load Life Stability	0.50 %	1000 h/215 °C (ambient) at Pn
Storage Temperature Range	-55 °C; +230 °C	
Shelf Life Stability	0.35 % typ. (0.5 % max.)	4000 h/230 °C

Notes

- Please refer to table 3 for TCR versus ohmic values
- See table 2
- See table 1

Caution:

Performances obtained with following mounting conditions:
PCB: Polyimide
Solder paste: PbSnAg (93.5/5/1.5)

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Build **Vishay** into your Design