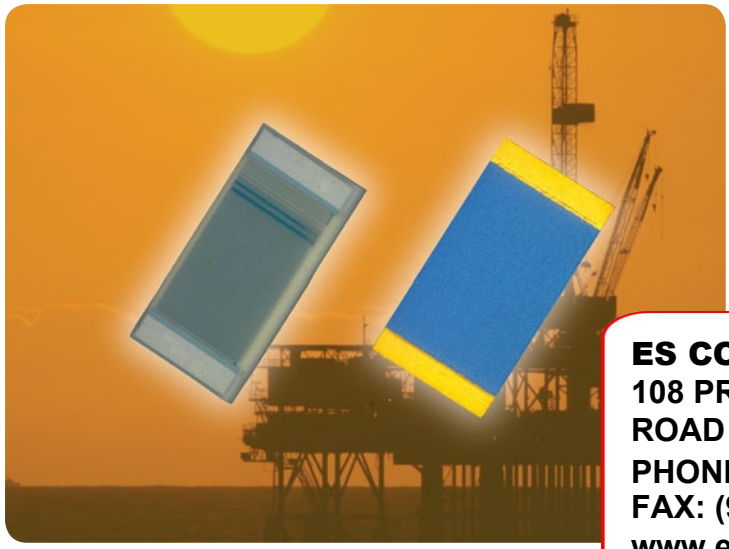
RESISTORS FOR DOWN HOLE APPLICATIONS

Vishay Sfernice

High Temperature up to 230 °C



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INTRODUCTION

In oil and gas exploration drilling, well logging data is collected during the drilling process and during exploitation from instrumentation installed directly within the drill. This instrumentation is exposed to harsh environments, including extreme temperatures, pressure, moisture, shock, and vibration. Once commissioned, the instrumentation must be relied on to function for 5 to 10 years, powered at temperatures up to 215 °C with no maintenance. The components used for this instrumentation must be able to withstand these harsh conditions while maintaining their accuracy. Failure of the data logging equipment, necessitating its removal for repairs, can cause costly delays. Vishay Sfernice helps to avoid this possibility by offering several high reliability and high precision resistors and resistor networks for down hole data logging instrumentation.

RESOURCES

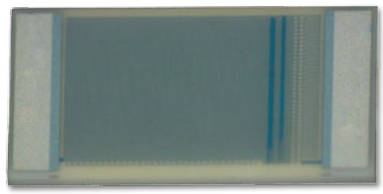
- To aid design engineers, Vishay Sfernice provides the following application notes: www.vishay.com/doc?53048: *Power Dissipation in High Precision Vishay Sfernice Chip Resistors and Arrays*; and www.vishay.com/doc?53047: *Power Dissipation Considerations in High Precision Vishay Sfernice Thin Film Chips Resistors and Arrays (High Temperature Applications)*
- For technical questions contact sferthinfilm@vishay.com
- Sales Contacts: http://www.vishay.com/doc?99914

RESISTORS FOR DOWN HOLE APPLICATIONS

Vishay Sfernice

Die Resistors and Die Networks

RMKHT



Key Features and Benefits:

- Operating temperature up to 215 °C
- Storage temperature up to 230 °C
- Load life stability of 0.3 % after 2000 hours at 220 °C
- Storage stability: 0.5 % after 8000 h at 230 °C, no power
- Wide range of dies: from 20 mil x 20 mil to 67 mil x 134 mil
- Wide ohmic range 10 Ω to 7M6 (depending on size)
- Tight tolerance: down to 0.05 % - tolerance ratio down to 0.02 %
- Tight temperature coefficient: down to 25 ppm [- 55 °C; + 215 °C] - TCR ratio down to 2 ppm

Thin Film Chip Resistors and Resistors Arrays

PHT and PRA option 0051

Key Features and Benefits:

- Operating temperature up to 215 °C
- Storage temperature up to 230 °C
- Load life stability: 0.3 % after 2000 h at P*n* at 220 °C
- Storage stability: 0.5 % after 8000 h at 230 °C, no power
- Wide range of wraparound chips: 0402 to 2010
- Wide ohmic range 10 Ω to 7M6 (depending on size)
- Tight tolerance: down to 0.05 % - tolerance ratio down to 0.02 %
- Tight temperature coefficient: down to 25 ppm [- 55 °C; + 215 °C] - TCR ratio down to 2 ppm

THICK FILM CHIP RESISTORS

CHPHT

Key Features and Benefits:

- Operating temperature up to 215 °C
- Storage temperature up to 230 °C
- Load life stability: 1 % at nominal power after 1000 h at 215 °C
- Storage stability: 1 % after 8000 h at 230 °C, no power
- Wide range of wraparound chips: 0402 to 2512
- Wide ohmic range 0Ω1 to 10M