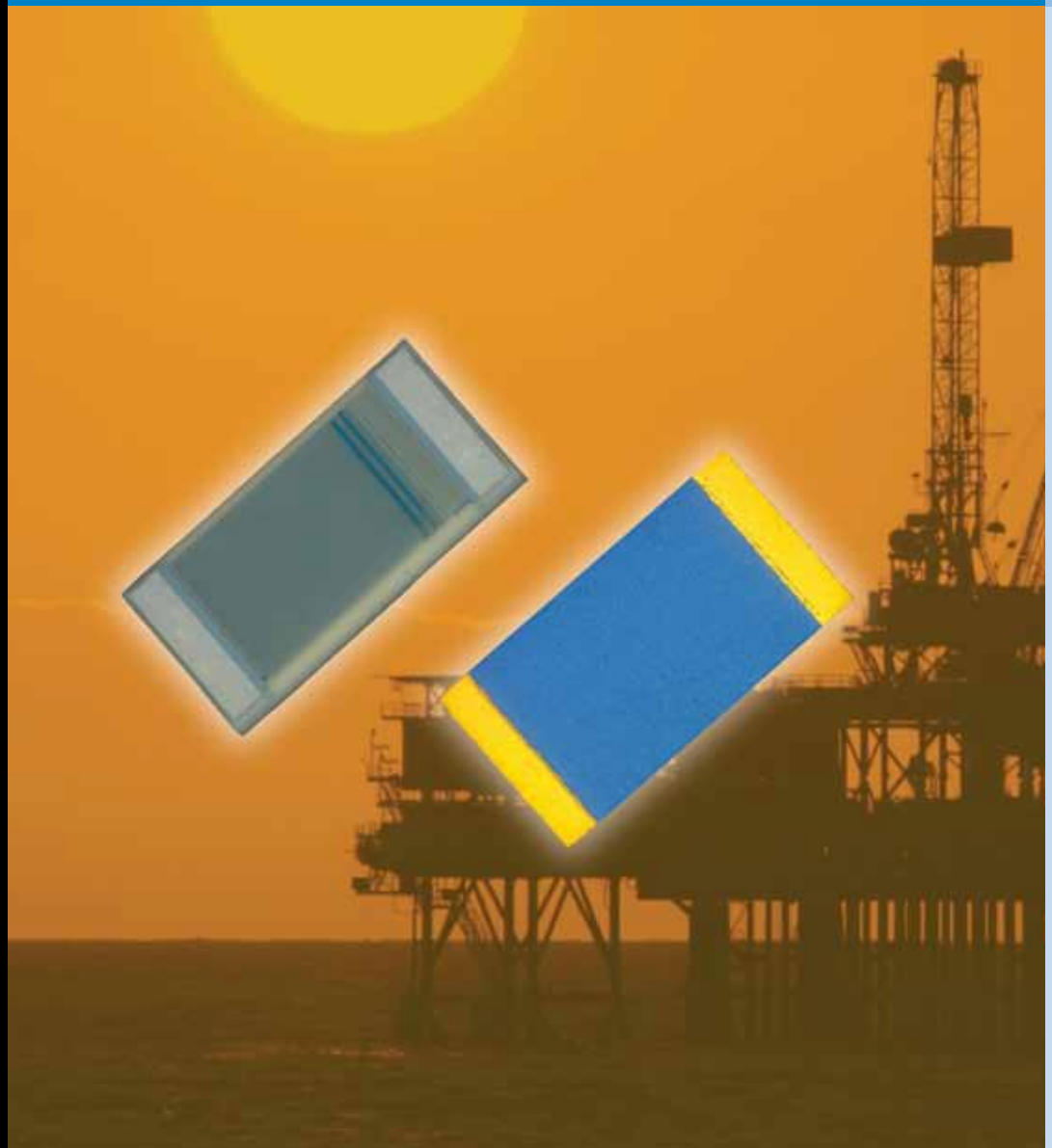




VISHAY SFERNICE PRODUCTS FOR DOWN HOLE APPLICATIONS

RESISTIVE PRODUCTS

CAPABILITIES



High Temperature 230 °C



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.

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
- www.vishay.com/doc?53047: Power Dissipation Considerations in High Precision Vishay Sfernice Thin Film Chips Resistors and Arrays (High Temperature Applications)

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: 0.5 % at nominal power after 1000 h at 215 °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 7M Ω (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: 0.5 % at nominal power after 1000 h at 215 °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 7M Ω (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 0 Ω 1 to 10M

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