



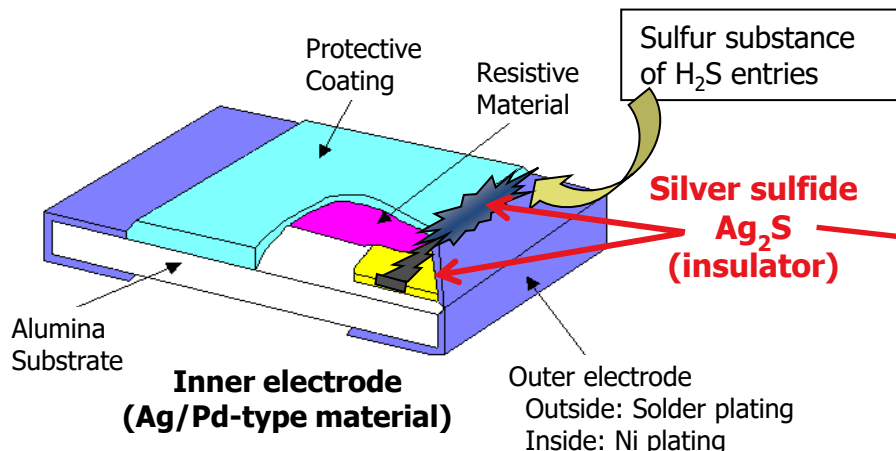
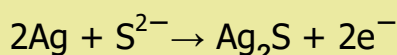
Datasheet

Sulfuration is a phenomenon that the inner electrodes (Ag/Pd-type material) of chip resistors react with sulfur gas which creates silver sulfide.

As sulfuration proceeds, the conduction of the inner electrode will be lost and the chip resistor gets disconnected.

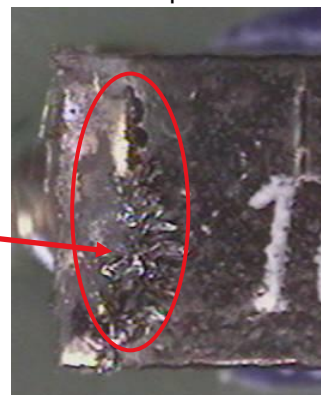
Sulfuration Phenomenon of Standard Chip Resistors

<Chemical Reaction of Silver and Sulfur>



Needle crystal of Ag₂S

Needle crystals appeared outside of chip resistor



Examples of Critical Environment

- Oil or grease for machine tools and gears sometimes includes sulfur substances
- Oil with high amount of impurities and exhaust gas after combusting the oil contains sulfur gas
- Rubber products or areas near rubber manufacturing plants
- Where fossil fuels are handled or used
- In case a PCB is molded by rubber sealing which includes sulfur
- In case components which generate sulfur are mounted in the surrounding
- (e.g. molded coatings which includes sulfur)
- Areas where volcanic gases are emitted
- Areas of biological gas cracking plants
- Near waste dumps / waste disposal sites



Datasheet

KOA's special anti-sulfuration resistors are intended to be used under harsh environment with a high level of sulfur contamination.

A high reliable material with extremely high sulfuration-proof characteristics is used in the inner top electrodes.

Thanks to technical know-how of sulfuration-proof material, KOA has been able to achieve an extremely high level of sulfuration-proof performance.

KOA's Anti-Sulfur Resistors Line-up

Resistors use anti-sulfur material for inner top electrodes

General Purpose	High Precision	High Reliability	Anti-Surge	High Power (Wide Terminal)	High Voltage
RK73B-RT RK73H-RT RK73Z-RT (01005...2512)	RK73G-RT (0402...1206)	RS73-RT (0402...1206) new	SG73_RT (0603...2512) SG73S/P-RT (High precision) (0402...1210)	WK73S-RT WK73R-RT (0508...1225)	HV73-RT (0603...2512) HV73V-RT (0603...1206)
Low ohm resistors (Current Detection)					
			SR73-RT (0402...1210)	WK73S-RT (0508...1225)	
			new		

KOA's standard types RK73 and SG73 have equivalent anti-sulfuration characteristics as our competitors "Slow Sulfuration" products.

⇒ **Anti-sulfuration: RK73_RT series** **Slow-sulfuration: RK73 series**

If it's intended to use products under harsh environment (under high density of sulphur), KOA recommends using the "Anti-Sulfuration Flat Chip Resistors" as a perfect measure.

Features

- Excellent anti-sulfuration characteristic due to using high-sulfuration-proof inner top electrode material
- Available for several standard product series (like RK73, SG73, WK73)
- Intended for use under harsh environment

Application Examples

- Industrial control systems
- Automotive
- Electric instrumentation
- Power meter / conditioner
- Solar / wind inverter circuits
- Avionics

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