State of the Art, Inc.
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Restriction on Hazardous Substances (RoHS)

The latest revision of the European Union's RoHS legislation[1] prohibits the sale of products that contain more than 0.01% cadmium and 0.1% by weight lead, mercury, chromium (VI), polybrominated biphenyls, and/or polybrominated diphenylethers unless an end use exemption is granted.

State of the Art, Inc. (SOTA) products may contain lead or cadmium and may not comply with RoHS. Several codes in our part number indicate the product's RoHS status.

Examples of our part number formats are shown below.

Semi-precision thick film chip resistors: S1206CPX1000F10, S1206CPY102G30

Precision thin film chip resistors: S1206CA1000FEB, S0303AS1000FKW

Zero ohm chip resistors (jumpers): S0402CPX000

Chip attenuators: S0303AC10B0B, S0706CW6B0B, S1512CT3B0BN7

MIL-PRF-55342 chip resistors: M55342K06B100BR, D55342K07W100DT

MIL-PRF-32159 zero ohm chip resistors: M32159C12M, M32159B06T.

MIL-PRF-914 surface mount resistor networks: M914D04K1002FMM

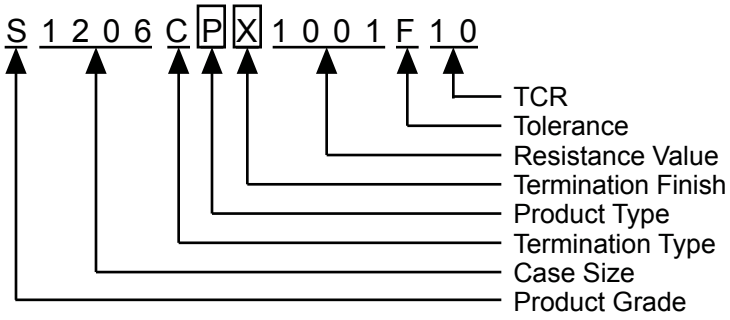
Surface mount resistor networks: SJCB20L1001FA, SD1516K1001FB.

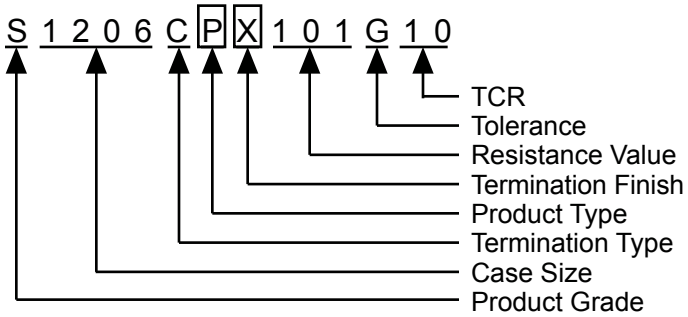
The part number codes that determine RoHS status are identified for each product type and part number format.

[1] Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast)

Semi-Precision Thick Film Chip Resistors

SOTA's semi-precision thick film resistors contain lead in a glass of these electrical components which is an exempt application.[2] These resistors may also contain lead or cadmium in other portions of the device and may not comply with RoHS. RoHS status is determined by the product and termination finish codes in the part number.





Product codes ***B*** and ***R*** (high power resistors) contain cadmium and do not comply with RoHS.

Product codes ***P, F, V, H, K,*** and ***U*** may comply with RoHS if the termination finish is RoHS compliant.

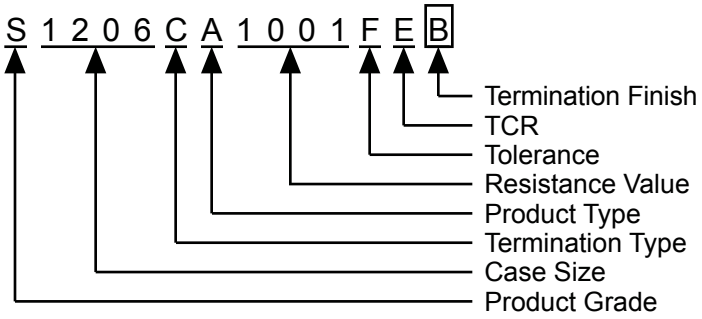
Termination Finish codes ***X***, ***N,*** and ***K*** (tin lead solder over nickel) do not comply with RoHS due to their 60/40 tin lead solder finish. Termination finish code ***P*** (platinum gold) contains cadmium and does not comply with RoHS.

Termination Finish codes ***Z*** (gold over nickel), ***Y*** (silver over nickel), ***V*** (SAC 305), and ***M*** (gold/tin solder bump), ***C*** (silver bearing)***,*** and ***G*** (gold) comply with RoHS.

[2] Exemption 7(c)-I. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

Precision Thin Film Chip Resistors

SOTA's precision thin film resistors may contain lead and may not comply with RoHS. RoHS status is determined by the termination finish code in the part number.

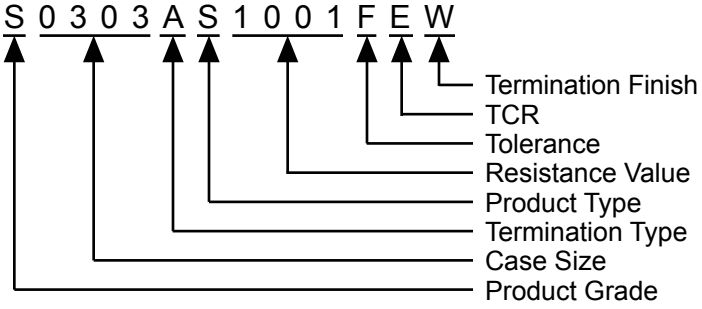


Termination Finish codes ***B*** and ***K*** (tin lead solder over nickel) do not comply with RoHS due to the 60/40 tin lead solder finish.

Termination Finish codes ***Y*** (silver over nickel), ***V*** (SAC 305), ***M*** (gold/tin solder bump), ***W*** (gold) and ***A*** (aluminum) comply with RoHS.

Precision Thin Film Silicon Resistors

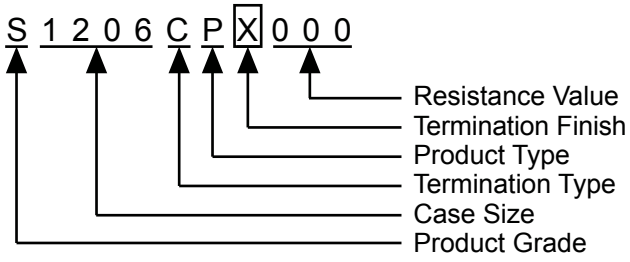
State of the Art, Inc. (SOTA) precision thin film silicon resistors comply with RoHS. Silicon resistors are identified by the product code S in the part number.



All precision thin film resistors on silicon are ROHS complaint.

Zero Ohm Chip Resistors (Jumpers)

Zero ohm chip resistors are made using thick film materials containing lead in a glass of these electrical components.[2] These resistors may also contain lead or cadmium in other portions of the device and may not be RoHS compliant. RoHS status is determined by the termination finish codes in the part number.



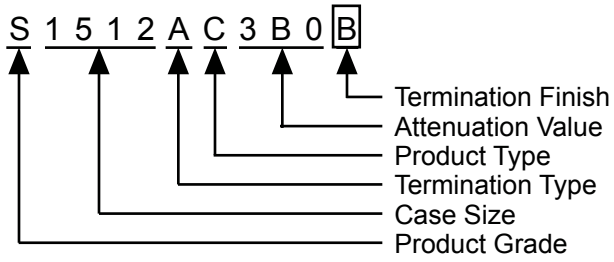
Termination Finish codes ***X***, ***N,*** and ***K*** (tin lead solder over nickel) do not comply with RoHS due to their 60/40 tin lead solder finish. Termination finish code ***P*** (platinum gold) contains cadmium and does not comply with RoHS.

Termination Finish codes ***Z*** (gold over nickel), ***Y*** (silver over nickel), ***V*** (SAC 305), and ***M*** (gold/tin solder bump), ***C*** (silver bearing)***,*** and ***G*** (gold) comply with RoHS.

[2] Exemption 7(c)-I. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

Fixed Chip Attenuators

State of the Art, Inc. (SOTA) fixed chip attenuator products with product codes W and D contain lead in a glass of these electrical components.[2] Fixed attenuator products with product codes C, M, & G do not need this exemption. Fixed chip attenuators may also contain lead in other portions of the device and may not comply with RoHS. RoHS status is determined by the termination finish code in the part number.

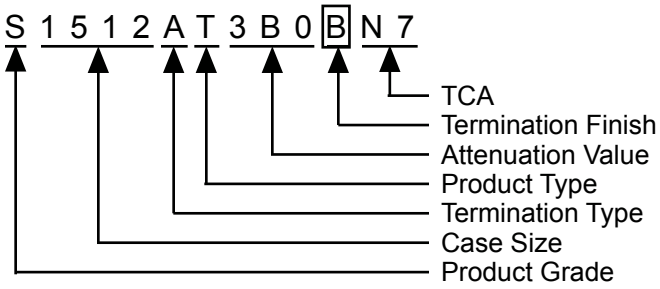


Termination Finish codes ***B*** and ***K*** (tin lead solder over nickel) do not comply with RoHS due to the 60/40 tin lead solder finish.

Termination Finish codes ***Y*** (silver over nickel), ***V*** (SAC 305), ***M*** (gold/tin solder bump) and ***W*** (gold) comply with RoHS.

Temperature Variable Attenuators

Temperature variable attenuators (product code T) contain lead in a glass of these electrical components[2] and may also contain lead in other portions of the device. RoHS status is determined by the termination finish code in the part number.



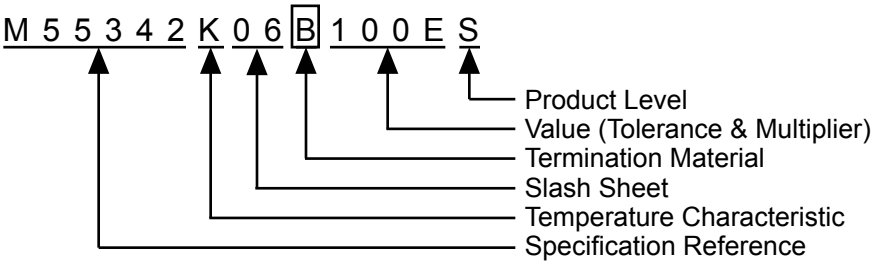
Termination Finish codes ***B*** and ***K*** (tin lead solder over nickel) do not comply with RoHS due to the 60/40 tin lead solder finish.

Termination Finish codes ***Y*** (silver over nickel), ***V*** (SAC 305), ***M*** (gold/tin solder bump) and ***W*** (gold) comply with RoHS.

[2] Exemption 7(c)-I. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

MIL-PRF-55342 Chip Resistors

MIL-PRF-55342 chip resistors may contain lead and may not be RoHS compliant. State of the Art, Inc. (SOTA) semi-precision thick film resistors contain lead in a glass of these electrical components.[2] SOTA precision thin film devices (E & H temperature characteristics and/or <1% tolerance) do not contain lead in the glass. RoHS status is determined by the termination material code in the part number:



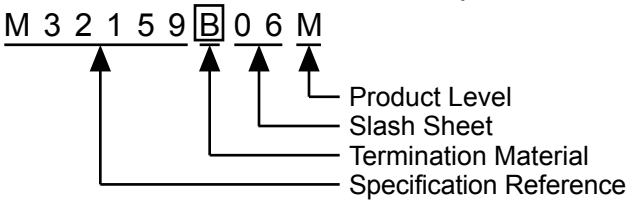
Termination Material code ***B*** (tin lead solder over nickel) does not comply with RoHS due to the 60/40 tin lead solder finish.

Termination Material code ***U*** (platinum gold) does not comply with RoHS due to the presence of cadmium.

Termination Material codes ***C*** (silver bearing), ***G*** (gold) and ***W*** (gold) comply with RoHS.

MIL-PRF-32159 Zero Ohm Chip Resistors

MIL-PRF-32159 zero ohm chip resistors contain lead in a glass of these electrical components[2] and may contain lead in the termination finish. RoHS status is determined by the termination material code in the part number:



Termination Material code ***B*** (tin lead solder over nickel) does not comply with RoHS due to the 60/40 tin lead solder finish.

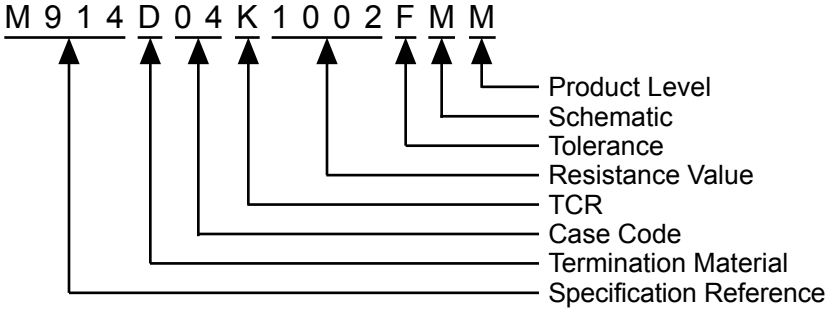
Termination Material code ***U*** (platinum gold) does not comply with RoHS due to the presence of cadmium.

Termination Material codes ***C*** (silver bearing), ***G*** (gold) and ***W*** (gold) comply with RoHS.

[2] Exemption 7(c)-I. Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound.

MIL-PRF-914 Surface Mount Resistor Networks

State of the Art, Inc. (SOTA) surface mount resistor networks do not comply with RoHS due to the lead in the 60/40 tin lead solder finish. These resistor networks are made using thick film materials that contain lead in a glass of the electrical components.[2]



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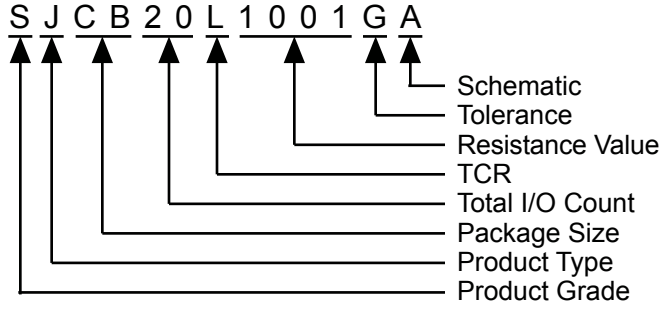
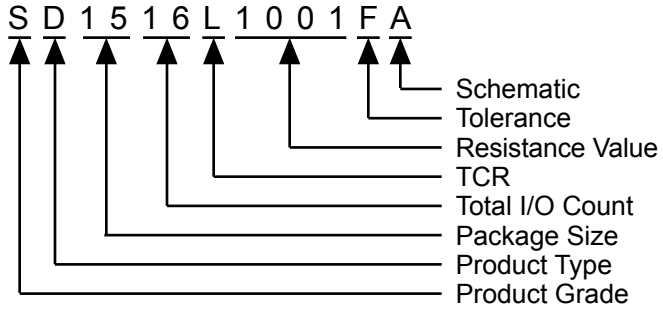
State of the Art, Inc. (SOTA) surface mount resistor networks do not comply with RoHS due to the lead in the 60/40 tin lead solder finish. These resistor networks are made using thick film materials that contain lead in a glass of the electrical components.[2]





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