



## Electronic Component Definition Comments

Developing definitions for the electronic component exemption<sup>1</sup> within the new specialty metals provision passed by Congress has been difficult for the electronics industry, particularly since the language in the legislation does not conform to standard industry terminology. Of considerable concern to industry is the real threat that a static definition of “electronic component” could lock out new technologies and innovations from this exception because the information technology sector refreshes so frequently. For this reason it is imperative to include a dynamic definition with, for example, a citation to an industry product reference that is regularly updated, as we have done.

It is also difficult to identify any “electronic component” or a component that is “of a type” that is not commercially available. It is the capabilities of these assembled components that may be unique for government use.

Finally, it is virtually impossible to measure the value of specialty metals in each component. Neither the commercial nor the government market has ever before asked for such a measurement, and the global nature of the supply chain for electronics and information technology products impedes the transparency necessary to collect such information. Further, the quantity of specialty metals that may be present in either pure or alloy form is extremely minute, so that identifying and measuring those quantities would be cost prohibitive.

Other challenges we encountered in developing a definition and have tried to solve within our recommended language include the following:

- Industry could not identify a single product reference that was fully inclusive. The one cited in the attached definition does not explicitly reference plasma displays or the fasteners, mounting hardware and brackets, enclosures or racks that are necessary for the assembly and proper installation and operation of “electronic components.” We have therefore included these items within our suggested language.
- Industry found it administratively prohibitive to measure each and every possible item that could be part of an electronic component assembly for de minimis amounts of specialty metals. Furthermore, we could not identify any items that were not commercially available. Therefore, the presumptions are made in our recommended definition that if an item is an “electronic component,” it is inherently commercially available and does not contain more than a de minimis amount of specialty metals.
- To determine the value of an item, industry used the retail offering price of an item, to represent the intellectual property, capital investments and other research and development costs as the basis for the presumption that any electronic component would contain a de minimis value of specialty metals.

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<sup>1</sup> EIA and ITAA have worked to support the efforts of the larger Berry Amendment Reform Coalition and support the broader interpretations and recommendations submitted by the Coalition to the Department of Defense.

## Electronic Component Definition

**Electronic Component:** a part or combination of parts contained in an End Item, as defined in §2533b(a)(1) of Subsection V of chapter 148 of title 10 USC as amended by Section 842 of the National Defense Authorization Act, that operates by controlling the flow of electrons or other electrically charged particles in electronic circuits, using interconnections of electrical devices. Electronic Components include the products falling within the 2002 North American Industry Classification System (NAICS) manufacturing category 3344 (*below for reference*) and any subsequent updates, as well as all fasteners, mounting brackets, enclosures, and racks for those products. The products that meet this definition are commercially available and contain a de minimis amount of 10% or less of specialty metal in comparison to the overall value of the component.

### 2002 North American Industry Classification System (NAICS)

#### 3344 Semiconductor and Other Electronic Component Manufacturing

##### 33441 Semiconductor and Other Electronic Component Manufacturing

This industry comprises establishments primarily engaged in manufacturing semiconductors and other components for electronic applications. Examples of products made by these establishments are capacitors, resistors, microprocessors, bare and loaded printed circuit boards, electron tubes, electronic connectors, and computer modems.

##### 334411 Electron Tube Manufacturing

2002 NAICS	Corresponding Index Entries
334411	Cathode ray tubes (CRT) manufacturing
334411	CRT (cathode ray tube) manufacturing
334411	Electron tube parts (e.g., bases, getters, guns) (except glass blanks) manufacturing
334411	Electron tubes manufacturing
334411	Klystron tubes manufacturing
334411	Magnetron tubes manufacturing
334411	Television picture tubes manufacturing
334411	Traveling wave tubes manufacturing
334411	Tubes, cathode ray, manufacturing
334411	Tubes, electron, manufacturing
334411	Tubes, electronic, manufacturing

334411	Tubes, klystron, manufacturing
334411	Vacuum tubes manufacturing

### 334412 Bare Printed Circuit Board Manufacturing

This U.S. industry comprises establishments primarily engaged in manufacturing bare (i.e., rigid or flexible) printed circuit boards without mounted electronic components. These establishments print, perforate, plate, screen, etch, or photoprint interconnecting pathways for electric current on laminates.

2002 NAICS	Corresponding Index Entries
334412	Circuit boards, printed, bare, manufacturing
334412	Flexible wiring boards, bare, manufacturing
334412	Printed circuit boards, bare, manufacturing

### 334413 Semiconductor and Related Device Manufacturing

This U.S. industry comprises establishments primarily engaged in manufacturing semiconductors and related solid state devices. Examples of products made by these establishments are integrated circuits, memory chips, microprocessors, diodes, transistors, solar cells and other optoelectronic devices.

2002 NAICS	Corresponding Index Entries
334413	Diodes, solid-state (e.g., germanium, silicon), manufacturing
334413	Fuel cells, solid-state, manufacturing
334413	Gunn effect devices manufacturing
334413	Hall effect devices manufacturing
334413	Hybrid integrated circuits manufacturing
334413	Infrared sensors, solid-state, manufacturing
334413	Integrated microcircuits manufacturing
334413	Laser diodes manufacturing
334413	LED (light emitting diode) manufacturing
334413	Light emitting diodes (LED) manufacturing
334413	Metal oxide silicon (MOS) devices manufacturing
334413	Microcontroller chip manufacturing
334413	Microprocessor chip manufacturing
334413	Monolithic integrated circuits (solid-state) manufacturing
334413	MOS (metal oxide silicon) devices manufacturing

334413	Optoelectronic devices manufacturing
334413	Photoelectric cells, solid-state (e.g., electronic eye), manufacturing
334413	Photovoltaic devices, solid-state, manufacturing
334413	Rectifiers, semiconductor, manufacturing
334413	Semiconductor circuit networks (i.e., solid-state integrated circuits) manufacturing
334413	Semiconductor devices manufacturing
334413	Semiconductor dice and wafers manufacturing
334413	Semiconductor memory chips manufacturing
334413	Silicon wafers, chemically doped, manufacturing
334413	Solar cells manufacturing
334413	Static converters, integrated circuits, manufacturing
334413	Thin film integrated circuits manufacturing
334413	Thyristors manufacturing
334413	Transistors manufacturing
334413	Voltage regulators, integrated circuits, manufacturing
334413	Wafers (semiconductor devices) manufacturing

### **334414 Electronic Capacitor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic fixed and variable capacitors and condensers.

<b>2002 NAICS</b>	<b>Corresponding Index Entries</b>
334414	Capacitors, electronic, fixed and variable, manufacturing
334414	Condensers, electronic, manufacturing

### **334415 Electronic Resistor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic resistors, such as fixed and variable resistors, resistor networks, thermistors, and varistors.

<b>2002 NAICS</b>	<b>Corresponding Index Entries</b>
334415	Resistors, electronic, manufacturing
334415	Thermistors manufacturing
334415	Varistors manufacturing

### **334416 Electronic Coil, Transformer, and Other Inductor Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic inductors, such as coils and transformers.

<b>2002 NAICS</b>	<b>Corresponding Index Entries</b>
334416	Chokes for electronic circuitry manufacturing
334416	Inductors, electronic component-type (e.g., chokes, coils, transformers), manufacturing
334416	Telephone and telegraph transformers, electronic component-type, manufacturing
334416	Transformers, electronic component-types, manufacturing

### **334417 Electronic Connector Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic connectors, such as coaxial, cylindrical, rack and panel, pin and sleeve, printed circuit and fiber optic.

<b>2002 NAICS</b>	<b>Corresponding Index Entries</b>
334417	Coaxial connectors manufacturing
334417	Connectors, electronic (e.g., coaxial, cylindrical, printed circuit, rack and pan
334417	Cylindrical connectors, electronic, manufacturing
334417	Fiber optic connectors manufacturing
334417	Planar cable connectors manufacturing
334417	Rack and panel connectors manufacturing

### **334418 Printed Circuit Assembly (Electronic Assembly) Manufacturing**

This U.S. industry comprises establishments primarily engaged in loading components onto printed circuit boards or who manufacture and ship loaded printed circuit boards. Also known as printed circuit assemblies, electronics assemblies, or modules, these products are printed circuit boards that have some or all of the semiconductor and electronic components inserted or mounted and are inputs to a wide variety of electronic systems and devices.

<b>2002 NAICS</b>	<b>Corresponding Index Entries</b>
334418	Loaded computer boards manufacturing
334418	Loading printed circuit boards
334418	Memory boards manufacturing
334418	Peripheral controller boards manufacturing

334418	Personal computer modems manufacturing
334418	Printed circuit assemblies manufacturing
334418	Printed circuit boards loading

### **334419 Other Electronic Component Manufacturing**

This U.S. industry comprises establishments primarily engaged in manufacturing electronic components (except electron tubes; bare printed circuit boards; semiconductors and related devices; electronic capacitors; electronic resistors; coils, transformers and other inductors; connectors; and loaded printed circuit boards).

<b>2002 NAICS</b>	<b>Corresponding Index Entries</b>
334419	Computer cable (e.g., monitor, printer) manufacturing
334419	Crystals and crystal assemblies, electronic, manufacturing
334419	Filters, electronic component-type, manufacturing
334419	Harness assemblies for electronic use manufacturing
334419	Heads (e.g., recording, read/write) manufacturing
334419	LCD (liquid crystal display) unit screens manufacturing
334419	Microwave components manufacturing
334419	Needles, phonograph and styli, manufacturing
334419	Piezoelectric crystals manufacturing
334419	Piezoelectric devices manufacturing
334419	Printed circuit laminates manufacturing
334419	Quartz crystals, electronic application, manufacturing
334419	Rectifiers, electronic component-type (except semiconductor), manufacturing
334419	Resonant reed devices, electronic, manufacturing
334419	Rheostats, electronic, manufacturing
334419	Screens for liquid crystal display (LCD) manufacturing
334419	Solenoids for electronic applications manufacturing
334419	Switches for electronic applications manufacturing
334419	Transducers (except pressure) manufacturing