

Semiconductors, Printed Circuit Boards, Other Electronic Components

2000

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Information about the scope of the survey, methodology, explanation of terms and historical notes for this survey may be found in the introduction of the 1998 Manufacturing Profiles, issued December 2000.

Current data are released electronically on Internet for all individual surveys as they become available. Use: <http://www.census.gov/econ/www/manumenu.html>. Individual reports can be accessed by choosing "Current Industrial Reports (CIR's)," clicking on "Report Number Index;" from the "Industrial Products by Numeric Index," choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (WK format) to your personal computer.

These data are also available through the U.S. Department of Commerce and STAT-USA Electronic Bulletin Board by subscription. To access, dial 202-482-3870 and follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information. The Internet address is: www.stat-usa.gov/.

NOTE. Data are now published on the new North American Industry Classification System (NAICS) basis and therefore are not always comparable

to the old Standard Industrial Classification (SIC) code. For further information on NAICS, see www.census.gov/epcd/www/naics.html.

SUMMARY OF FINDINGS

During 2000, the total value of shipments of semiconductors, printed circuit boards, and other electronic components was \$168,268.3 million. This represents an 18.8-percent increase from the revised 1999 total of \$141,659.9 million. The 2000 data include electron tubes and parts, \$4,306.4 million, a decrease of 1.8 percent from 1999; printed circuit boards, \$11,129.1 million, an increase of 21.6 percent from 1999; semiconductors and related devices, \$90,383.3 million, an increase of 17.9 percent over the revised total from 1999. Capacitors increased 30.8 percent to \$2,662.7 million; resistors increased by 5.7 percent to \$1,026.1 million; coils and transformers had an 18.1-percent increase to \$1,679.7 million; electronic connectors was \$6,712.1 million in 2000, compared to \$4,988.4 million in 1999, an increase of 34.5 percent; and other electronic components increased to \$50,368.9 million, from a revised 1999 total of \$42,059.9 million, an increase of 19.7 percent.

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Philippe S.J. Morris, 301-457-4819.

For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-457-4673.

U S C E N S U S B U R E A U

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U.S. Department of Commerce
Economics and Statistics Administration
U.S. Census Bureau



Table 1. Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components
by Class of Product: 1995 to 2000
[Value in million of dollars]

| Product code | Product description | 2000 | 1999 | 1998 | 1997 | 1996 | 1995 |
|--------------|---|----------|----------|----------|----------|----------|----------|
| 3344111 | Transmittal, industrial, and special-purpose electron tubes (except x-ray)..... | 705.5 | 672.9 | 629.5 | 655.9 | 611.4 | 854.9 |
| 3344114 | Receiving type electron tubes and cathode ray picture tubes..... | 3,457.5 | 3,578.5 | 3,367.1 | 3,433.6 | 3,272.0 | 2,907.0 |
| 3344117 | Electron tube parts..... | 143.4 | 136.4 | 146.6 | 161.0 | 153.1 | 120.2 |
| 3344120 | Printed circuit boards..... | 11,129.1 | 9,149.9 | 8,473.2 | 8,702.4 | 8,216.8 | 8,367.3 |
| 3344131 | Integrated microcircuits (semiconductor networks)..... | 76,508.0 | 62,868.4 | 57,643.5 | 57,019.4 | 52,639.3 | 48,437.9 |
| 3344134 | Transistors..... | 1,375.3 | 993.7 | 887.0 | 1,500.2 | 945.9 | 942.5 |
| 3344137 | Diodes and rectifiers..... | 629.1 | 1,038.3 | 907.6 | 1,190.5 | 861.4 | 1,066.7 |
| 334413A | Other semiconductor devices..... | 11,870.9 | 11,745.4 | 11,055.8 | 10,262.3 | 10,976.1 | 12,639.4 |
| 3344140 | Capacitors for electronic applications..... | 2,662.7 | 2,035.1 | 1,946.9 | 2,098.7 | 1,653.4 | 1,785.3 |
| 3344150 | Resistors..... | 1,026.1 | 970.6 | 944.6 | 993.4 | 911.9 | 953.2 |
| 3344160 | Coils, transformers, reactors, and chokes for electronic applications..... | 1,679.7 | 1,422.5 | 1,368.3 | 1,425.7 | 1,435.6 | 1,411.8 |
| 3344171 | Coaxial connectors..... | 781.7 | 630.5 | 590.3 | 581.0 | 656.9 | 731.6 |
| 3344174 | Cylindrical connectors..... | 658.7 | 549.5 | 579.5 | 554.9 | 642.5 | 552.9 |
| 3344177 | Rack and panel connectors..... | 676.2 | 391.4 | 745.6 | 657.9 | 530.7 | 540.5 |
| 334417A | Printed circuit connectors..... | 2,389.3 | 1,375.8 | 1,124.8 | 1,276.5 | 1,095.3 | 1,026.4 |
| 334417D | Other connectors, including parts..... | 2,206.2 | 2,041.2 | 1,973.1 | 2,208.8 | 1,617.1 | 1,401.9 |
| 3344191 | Filters (except microwave) and piezoelectric devices..... | 1,075.6 | 857.5 | 797.5 | 814.7 | 719.3 | 729.2 |
| 3342207 | Microwave components and devices..... | 2,449.8 | 1,621.6 | 1,580.7 | 1,439.8 | 1,251.4 | 1,233.4 |
| 3344194 | Transducers, electrical/electronic input or output..... | 1,408.3 | 1,330.7 | 1,372.7 | 1,219.6 | 1,104.8 | 1,111.3 |
| 3344197 | Switches, mechanical types for electronic circuitry..... | 901.3 | 883.4 | 882.5 | 791.2 | 738.0 | 666.3 |
| 334418A | Printed circuit assemblies..... | 35,992.3 | 30,090.9 | 26,046.5 | 27,040.2 | 24,937.3 | 24,447.7 |
| 334419D | All other electronic components, n.e.c..... | 8,541.6 | 7,275.7 | 7,322.4 | 7,484.7 | 7,199.1 | 6,978.1 |

n.e.c. Not elsewhere classified.

Table 2. Quantity and Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000 and 1999
 [Quantity in thousands of units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2000 | | 1999 | |
|--------------|--|-------------|----------|--------------|-----------|-----------|
| | | | Quantity | Value | Quantity | Value |
| 334411 | Electron tubes..... | (NA) | (X) | 4,306,350 | (X) | 4,387,727 |
| 3344111 | Transmittal, industrial, and special purpose electron tubes (except X-ray)..... | 34 | (X) | 705,516 | (X) | 672,877 |
| | Power and special purpose tubes: | | | | | |
| 3344111105 | High vacuum tubes, including triodes, multigrid external and internal anodes, diodes, and other..... | 6 | 85 | 69,282 | 102 | 68,720 |
| 3344111110 | Gas and vapor tubes, including Ignitron, gas duplexers, spark gaps and others..... | 10 | 648 | 31,796 r/ | 369 r/ | 31,657 |
| 3344111115 | Klystrons, including amplifier, reflex, and other..... | 6 | 298 | 55,274 | 285 | 51,480 |
| 3344111120 | Magnetrons, including pulsed, fixed, tunable, cross-field, continuous wave and other..... | 4 | 17 | 43,729 | 18 | 39,698 |
| | Traveling wave tubes (TWT): | | | | | |
| | Forward wave: | | | | | |
| | Continuous wave (CW): | | | | | |
| 3344111225 | Up to and including 10 watts CW power output rating 1/..... | 1 | (D) | (D) | (D) | (D) |
| 3344111230 | Over 10 watts CW power output rating 1/..... | 4 | 3,383 | 97,785 | 3,154 | 95,781 |
| | Pulsed power: | | | | | |
| 3644111235 | Up to and including 1 kW peak power output rating 2/..... | 2 | (D) | (D) | (D) | (D) |
| 3344111240 | Over 1 kW peak power output rating 2/..... | 5 | 1,078 | 84,567 | 1,029 | 84,343 |
| 3344111265 | Backward wave | - | - | - | - | - |
| | Light sensing tubes: | | | | | |
| 3344111345 | Camera tubes, photo emissive and photo conductive 3/..... | 3 | (D) | (D) | (D) | (D) |
| 3344111350 | Image intensifiers and converters 3/..... | 3 | (D) | (D) | (D) | (D) |
| 3344111355 | Photo multipliers and other 3/..... | 3 | 95 | 103,832 | 85 | 88,585 |
| 3344111360 | Light emitting devices, including storage tubes all sizes, cathode ray tubes, color and monochrome (industrial and military), special display devices, including alphanumeric readout tubes, figure indicating tubes, and other..... | 10 | 1,564 | 118,006 | 2,133 | 127,491 |
| 3344111370 | Miscellaneous special-purpose tubes (reference cavities, radiation detection (geiger, neutron counters, etc.), beam deflection, decade counters, orbital beam, vacuum gauges, vacuum capacitors, switches, relays, etc.)..... | 8 | (X) | 101,245 | (X) r/ | 85,122 |
| 3344114 | Receiving type electron tubes and cathode ray picture tubes..... | (NA) | (X) | 3,457,465 | (X) | 3,578,490 |
| 3344114005 | Receiving type electron tubes, all types, including rebuilt | 2 | (D) | (D) | (D) | (D) |
| | Television tubes, including any defective tube that has been rebuilt: | | | | | |
| | Color having a video display diagonal of: | | | | | |
| 3344114010 | 50 cm and under (20 inches and under) 4/..... | 6 | (D) | (D) | (D) | (D) |
| 3344114015 | Over 50 cm but not exceeding 63 cm (21 through 25 inches) 4/..... | 2 | 12,965 | 1,026,361 r/ | 12,348 r/ | 1,091,285 |
| 3344114020 | Exceeding 63 cm (26 inches and over)..... | 9 | 18,103 | 2,357,063 r/ | 17,159 r/ | 2,415,077 |
| 3344114025 | Other, including rebuilt color and new and rebuilt black and white..... | 5 | (D) | (D) | (D) | (D) |
| 3344117030 | Electron tube parts (except glass blanks): bases, getters, cathodes, headers, guns..... | 16 | (X) | 143,369 | (X) | 136,360 |
| 334412 | Printed-circuit (wiring) boards..... | 542 | (X) | 11,129,098 | (X) | 9,149,931 |
| 3344120105 | Single-sided glass printed..... | 265 | (X) | 404,665 | (X) r/ | 331,639 |
| 3344120210 | Double-sided glass printed..... | 361 | (X) | 1,573,898 | (X) | 1,254,604 |
| 3344120315 | Multilayer glass printed..... | 352 | (X) | 6,040,174 | (X) | 4,943,590 |
| 3344120420 | Single-sided flex printed..... | 47 | (X) | 196,369 | (X) r/ | 170,862 |
| 3344120425 | Double-sided flex printed..... | 45 | (X) | 118,475 | (X) | 140,965 |
| 3344120430 | Multilayer flex and rigid/flex printed..... | 56 | (X) | 285,192 | (X) r/ | 273,065 |
| 3344120435 | All paper/mat/composite printed boards..... | 16 | (X) | 36,981 | (X) | 39,342 |
| 3344120440 | Other substitute printed boards..... | 64 | (X) | 1,484,874 | (X) r/ | 1,318,885 |
| 3344120545 | Receipts for contract work on printed circuit boards (etching, dip-soldering, imprinting, etc.), but not printed board assembly..... | 72 | (X) | 988,470 | (X) r/ | 676,979 |

Continued

Table 2. Quantity and Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000 and 1999
 [Quantity in thousands of units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2000 | | 1999 | |
|--------------|---|-------------|------------|--------------|--------------|------------|
| | | | Quantity | Value | Quantity | Value |
| 334413 | Semiconductors and related devices..... | (NA) | (X) | 90,383,333 | (X) | 76,645,796 |
| 3344131 | Monolithic integrated circuits..... | 217 | 19,169,902 | 76,507,982 | 16,165,544 | 62,868,410 |
| | Monolithic integrated circuits, digital, nonsilicon (e.g., gallium arsenide): | | | | | |
| 3344131036 | Memory | 4 | (D) | (D) | (D) | (D) |
| 3344131048 | Logic and other..... | 11 | 329,676 | 1,667,833 r/ | 253,508 | 1,322,422 |
| | Monolithic integrated circuits, digital, silicon: | | | | | |
| | Bipolar transistors, memory: | | | | | |
| 3344131015 | Static read-write random access (SRAM) 5/..... | 6 | (D) | (D) | (D) | (D) |
| 3344131021 | Other memory 5/..... | 5 | 5,854 | 9,208 | 3,695 r/ | 5,535 |
| | Other bipolar transistors, including logic: | | | | | |
| 3344131024 | Transistor-transistor logic (TTL)..... | 12 | 232,553 | 238,148 | 370,150 | 178,963 |
| 3344131027 | Emitter coupled logic (ECL)..... | 5 | (D) | (D) | (D) | (D) |
| 3344131030 | Other..... | 9 | 1,361,860 | 1,395,060 | (D) | (D) |
| | Metal oxide semiconductor (MOS) field effect transistors: | | | | | |
| | Volatile memory DRAMS (dynamic read-write random access): | | | | | |
| 3344131064 | Not over 80 k | 6 | (D) | (D) | (D) | (D) |
| 3344131066 | Over 80 k but not over 300 k | 4 | (D) | (D) | (D) | (D) |
| 3344131068 | Over 300 k but not over 3 MB | 2 | (D) | (D) | (D) | (D) |
| 3344131070 | Over 3 MB but not over 15 MB | 4 | (D) | (D) | (D) | (D) |
| 3344131072 | Over 15 MB..... | 8 | (D) | (D) | 502,725 | 3,625,418 |
| | Volatile memory SRAMS (static read-write random access): | | | | | |
| 3344131082 | Not over 40 k..... | 6 | 123,001 | 192,830 r/ | 75,154 r/ | 224,129 |
| 3344131084 | Over 40 k but not over 80 k..... | 8 | 31,736 | 88,083 | 48,640 | 123,664 |
| 3344131086 | Over 80 k but not over 300 k | 11 | 35,685 | 161,008 | 63,392 r/ | 275,832 |
| 3344131088 | Over 300 k but not over 3MB | 9 | 191,828 | 609,190 | 31,533 | 190,209 |
| 3344131090 | Over 3 MB | 8 | 51,918 | 957,931 | (D) r/ | (D) |
| | Nonvolatile EEPROMs (electrically erasable programmable read-only memory): | | | | | |
| 3344131092 | Not over 80 k 6/..... | 7 | (D) | (D) | 370,113 | 307,034 |
| 3344131094 | Over 80 k but not over 900 k 6/ | 6 | (D) | (D) | 30,731 | 149,860 |
| 3344131096 | Over 900 k 6/..... | 6 | 1,016,272 | 943,830 r/ | 1,484 r/ | 40,252 |
| | Nonvolatile EPROMs (erasable, except electrically, programmable read-only memory): | | | | | |
| 3344131074 | Not over 80 k..... | 5 | 9,268 | 33,872 | (D) | (D) |
| 3344131076 | Over 80 k but not over 900 k..... | 11 | (D) | (D) | (D) | (D) |
| 3344131078 | Over 900 k..... | 7 | 52,754.0 | 95,598 | (D) | (D) |
| 3344131080 | Other nonvolatile memory..... | 13 | 1,210,165 | 4,998,580 | 650,434 | 2,901,252 |
| | Other, including microprocessors, controllers, application specific integrated circuits (ASIC's), and programable logic arrays (PLA's): | | | | | |
| 3344131054 | Microprocessors having an internal data bus of 8 bits or less..... | 13 | 1,220,734 | 990,386 | 557,227 | 952,111 |
| 3344131057 | Microprocessors having an internal data bus of 16 bits..... | 12 | 190,694 | 1,370,425 | (D) | (D) |
| 3344131060 | Microprocessors having an internal data bus of 32 bits or more..... | 20 | (D) | (D) | (D) | (D) |
| 3344131033 | Other (microcontrollers, ASIC's, PLA's, etc.)..... | 36 | 1,226,538 | 9,757,107 | 1,321,030 | 9,312,414 |
| | Other digital, silicon, including bipolar combined with MOS: | | | | | |
| 3344131039 | Complementary BiMOS (BiCMOS)..... | 4 | (D) | (D) | 174,428 | 669,527 |
| 3344131042 | Other complementary BiMOS(BiCMOS), including logic..... | 11 | 1,072,277 | 766,917 | 755,393 | 480,582 |
| 3344131045 | Other digital silicon ICs..... | 21 | 3,083,492 | 2,944,642 r/ | 444,934 r/ | 1,721,012 |
| | Nondigital silicon monolithic integrated circuits (e.g., linear, analog): | | | | | |
| 3344131062 | Radio frequency..... | 5 | (D) | (D) | 1,304,689 r/ | 156,071 |
| 3344131003 | Other, analog..... | 25 | 2,488,148 | 3,009,360 r/ | 2,770,449 | 2,983,393 |
| 3344131006 | Other, including mixed signal (analog and digital), logic..... | 10 | 540,059 | 1,008,978 | (D) | (D) |
| 3344131009 | Other, including mixed signal (analog and digital), other..... | 22 | 1,002,748 | 4,423,374 r/ | 754,475 | 3,404,558 |
| | Hybrid integrated circuits: | | | | | |
| 3344131018 | Radio frequency..... | 25 | 367,554 | 334,789 | 129,024 | 426,941 |
| 3344131051 | Other..... | 51 | 123,718 | 722,484 | 95,695 | 726,047 |
| 3344131012 | Other..... | 54 | 1,014,879 | 4,089,059 | 3,685,154 r/ | 4,947,746 |
| 3344134 | Transistors..... | 34 | (X) | 1,375,314 | (X) | 993,745 |
| 3344134005 | Signal (less than 1 watt dissipation) 7/..... | 17 | (X) | (D) | (X) | 187,850 |
| 3344134010 | Power (1 watt or greater dissipation) 7/..... | 29 | (X) | 1,375,314 | (X) r/ | 805,895 |

Continued

Table 2. Quantity and Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000 and 1999
 [Quantity in thousands of units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2000 | | 1999 | |
|--------------|--|-------------|-----------|------------|-----------|------------|
| | | | Quantity | Value | Quantity | Value |
| 3344137 | Diodes and rectifiers..... | 51 | 506,593 | 629,125 | 5,286,347 | 1,038,280 |
| 3344137010 | Signal diodes and assemblies thereof (maximum current 0.5 amps)..... | 19 | 31,752 | 15,164 | 39,229 | 18,895 |
| 3344137015 | Semiconductor rectifiers/power diodes and assemblies thereof (current rating greater than 0.5 amps)..... | 28 | 147,634 | 149,191 | 1,172,423 | r/ 560,109 |
| 3344137025 | Zener diodes (voltage regulator and voltage reference diodes) 8/..... | 20 | (D) | (D) | (D) | (D) |
| 3344137005 | Selenium rectifiers 8/..... | 3 | 137,680 | 73,403 | 3,539,963 | 215,740 |
| 3344137020 | Microwave diodes (mixers, detectors, varactors, parametric, harmonic generators, etc.)..... | 14 | 189,527 | 391,367 | 534,732 | r/ 243,536 |
| 334413A | Other semiconductor devices..... | 180 | (X) | 11,870,912 | (X) | 11,745,361 |
| | Light-sensitive and light-emitting devices: | | | | | |
| 334413A005 | Solar cells..... | 16 | (X) | 123,792 | (X) r/ | 161,371 |
| 334413A010 | Photovoltaic modules..... | 11 | (X) | 122,242 | (X) r/ | 99,760 |
| | Light-emitting diodes (LED) | | | | | |
| 334413A015 | Discrete, infrared and laser..... | 19 | (X) | 271,064 | (X) r/ | 153,157 |
| 334413A020 | Alpha or numeric displays..... | 7 | (X) | (D) | (X) r/ | 80,634 |
| 334413A025 | Photodiodes, including infrared detectors..... | 17 | (X) | 132,353 | (X) r/ | 104,544 |
| 334413A030 | Optical coupled isolators, including sensors and emitters..... | 5 | (X) | (D) | (X) | 375,433 |
| 334413A035 | Other light sensitive and light-emitting devices, including photovoltaic devices and photoelectric-magnetic devices..... | 12 | (X) | 1,083,196 | (X) r/ | 1,021,242 |
| | Other semiconductor devices: | | | | | |
| 334413A040 | Thyristors (SCR's, triacs, PNP diodes)..... | 8 | (X) | (D) | (X) | 148,253 |
| 334413A045 | Hall effect devices..... | - | (X) | - | (X) | - |
| 334413A050 | All other semiconductor devices (tunnel diodes, thermoelectric semiconductor junctions, metal-oxide varistors, solidstate transducers, and special semiconductor devices, n.e.c.)..... | 19 | (X) | (D) | (X) | 2,322,724 |
| | Semiconductor parts: | | | | | |
| | Chips and wafers: | | | | | |
| 334413A055 | For integrated circuits (IC's)..... | 47 | (X) | 4,763,169 | (X) r/ | 3,982,122 |
| 334413A060 | For discrete semiconductors..... | 37 | (X) | 540,237 | (X) r/ | 1,530,002 |
| 334413A065 | All other semiconductor parts (headers, packages, heat sinks, other accessories, etc.)..... | 46 | (X) | 1,938,341 | (X) | 1,766,119 |
| 334414 | Capacitors..... | 100 | (X) | 2,662,693 | (X) | 2,035,076 |
| | Paper, plastic (film), metalized, and dual (film/paper) dielectric capacitors, fixed: | | | | | |
| | Ac types: | | | | | |
| 3344140103 | Less than 300 volts..... | 18 | 18,118 | 34,662 | 18,693 | 35,410 |
| 3344140106 | 300 volts to 599 volts..... | 18 | 43,013 | 80,150 | 48,388 | 88,767 |
| 3344140109 | 600 volts to 999 volts..... | 13 | 4,923 | 11,937 | 6,624 | 10,871 |
| 3344140112 | 1,000 volts or over..... | 10 | 1,054 | 10,459 | 2,070 | 13,359 |
| | Capacitors having a reactive power handling capacity of 0.5 kVAR or less: | | | | | |
| | Dc types/other: | | | | | |
| 3344140215 | Axial lead..... | 21 | 39,762 | 46,846 | 39,800 | 41,266 |
| 3344140218 | Radial lead | 10 | 69,162 | 29,758 | 84,348 | 24,099 |
| 3344140221 | Chips and other leaded devices..... | 2 | (D) | (D) | (D) | (D) |
| | Tantalum electrolytic: | | | | | |
| 3344140324 | Metal case, including foil and wet 9/..... | 10 | (D) | (D) | (D) | (D) |
| 3344140327 | Dipped 9/ | 5 | (D) | (D) | (D) | (D) |
| 3344140330 | Chips 9/..... | 8 | (D) | (D) | (D) | (D) |
| 3344140333 | Other leaded (molded axial and molded radial) 9/..... | 2 | 1,671,127 | 430,506 | 2,114,463 | 303,866 |
| | Aluminum electrolytic: | | | | | |
| 3344140436 | Less than 18 mm through 35 mm | 4 | (D) | (D) | (D) | (D) |
| 3344140439 | Small can style (over 35mm through 51 mm) | 4 | 628 | 3,192 | 582 | 2,263 |
| 3344140442 | Other can style (over 51 mm) | 6 | 10,867 | 69,327 | 7,801 | 58,014 |
| 3344140445 | Ac motor start | 1 | (D) | (D) | (D) | (D) |
| | Ceramic dielectric, single layer: | | | | | |
| 3344140554 | Axial and radial 10/ | 8 | (D) | (D) | (D) | (D) |
| 3344140548 | Chips 10/..... | 3 | 175,353 | 24,677 | 150,292 | 23,383 |
| | Ceramic dielectric, multilayer: | | | | | |
| 3344140551 | Axial leads 11/..... | 4 | (D) | (D) | (D) | (D) |

Table 2. Quantity and Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000 and 1999
 [Quantity in thousands of units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2000 | | 1999 | |
|--------------|---|-------------|------------|------------|------------|-----------|
| | | | Quantity | Value | Quantity | Value |
| 3344140557 | Radial leads 11/..... | 9 | 4,582,874 | 184,604 | 3,493,724 | 132,844 |
| 3344140560 | Chips..... | 18 | 60,588,458 | 923,687 | 49,178,519 | 640,957 |
| | Other: | | | | | |
| 3344140663 | Mica dielectric..... | 7 | 10,635 | 8,937 r/ | 11,699 | 8,717 |
| 3344140666 | All other fixed..... | 20 | 240,252 | 109,913 | 205,362 r/ | 91,665 |
| | Variable: | | | | | |
| 3344140769 | Mica, ceramic or glass dielectric 12/..... | 4 | (D) | (D) | (D) | (D) |
| 3344140772 | Other 12/..... | 6 | 25,280 | 47,130 r/ | 22,260 r/ | 36,402 |
| 3344140875 | Parts of capacitors, including unfinished chips for further finishing and assembly..... | 11 | (X) | (D) | (X) | (D) |
| 334415 | Resistors..... | 95 | (X) | 1,026,122 | (X) | 970,587 |
| 3344150104 | Fixed carbon resistors, composition or film types..... | 12 | 49,876 | 18,993 | 46,919 | 15,211 |
| | Other fixed resistors (power capacity 20W or less): | | | | | |
| | Surface mounted, having two terminals: | | | | | |
| 3344150208 | Flat resistor chips..... | 23 | 464,552 | 84,687 | 344,827 | 60,388 |
| 3344150212 | Cylindrical leadless resistors, including metal film, metal oxide, and thick cermet film..... | 6 | (D) | (D) | (D) | (D) |
| | Surface mounted, having more than two terminals (resistor networks): | | | | | |
| 3344150216 | Dual-in-line package..... | 6 | 180,243 | 44,674 | 148,217 | 39,186 |
| 3344150220 | Other, including flat packs..... | 10 | 13,384 | 14,458 | 78,780 | 24,020 |
| | Resistors, having two leads: | | | | | |
| 3344150224 | Wirewound..... | 22 | 109,295 | 74,646 | 122,089 | 69,815 |
| 3344150228 | Other, including metal film, metal oxide, and thick cermet film..... | 18 | 558,980 | 100,650 | 556,098 | 88,733 |
| | Resistor networks, having more than two leads: | | | | | |
| 3344150232 | Single-in-line..... | 18 | 108,343 | 47,399 | 224,273 | 53,485 |
| 3344150236 | Dual-in-line..... | 7 | 30,782 | 11,284 | 30,553 | 9,626 |
| 3344150240 | Other..... | 11 | 67,650 | 65,627 | 75,672 | 70,182 |
| | Variable, nonwirewound: | | | | | |
| | Trimmers: | | | | | |
| 3344150344 | Single-turn, carbon and other film 13/..... | 7 | (D) | (D) | (D) | (D) |
| 3344150348 | Multiturn, carbon and other film 13/..... | 4 | 12,655 | 21,039 | 42,344 r. | 30,477 |
| 3344150356 | Surface mounted..... | - | - | - | - | - |
| | Potentiometers: | | | | | |
| 3344150352 | Precision type 14/..... | 12 | (D) | (D) | (D) | (D) |
| 3344150360 | Panel type 14/..... | 2 | 16,443 | 81,949 r. | 16,835 r. | 84,474 |
| | Variable, wirewound: | | | | | |
| 3344150468 | Variable wirewound (except potentiometers), including nonprecision and trimmers..... | 3 | (D) | (D) | (D) | (D) |
| 3344150464 | Potentiometers, precision type 15/..... | 9 | (D) | (D) | (D) | (D) |
| 3344150472 | Potentiometers panel type 15/..... | 3 | 2,185 | 23,714 | 2,485 | 29,473 |
| | Miscellaneous: | | | | | |
| 3344150576 | Varistors..... | 7 | (D) | (D) | (D) | (D) |
| 3344150580 | Thermistors, bead type, disc, rod..... | 13 | 468,178 | 130,681 | 433,768 | 117,950 |
| 3344150684 | Parts for resistors..... | 9 | (X) | 207,832 | (X) | (D) |
| 334416 | Coils, transformers, reactors, and chokes for electronic applications..... | 246 | (X) | 1,679,734 | (X) | 1,422,547 |
| 3344160020 | Audio frequency (AF) transformers..... | 84 | 65,608 | 145,437 | 58,750 | 134,092 |
| 3344160025 | Low frequency (LF) chokes..... | 93 | 26,799 | 108,688 | 12,127 | 70,502 |
| 3344160030 | Plate and filament transformers, including auto-transformers (except toroidal)..... | 61 | 13,186 | 129,222 | 15,183 | 129,227 |
| 3344160035 | Pulse transformers, computer, and other types..... | 87 | 45,731 | 160,663 | 42,496 | 131,581 |
| 3344160005 | Radio frequency (RF) chokes..... | 40 | 61,238 | 43,726 r/ | 46,816 r/ | 38,072 |
| 3344160010 | Radio frequency (RF) coils..... | 40 | 221,491 | 108,189 | 191,350 | 90,291 |
| 3344160015 | Intermediate frequency (IF) transformers..... | 40 | 76,021 | 123,316 r/ | 23,591 r/ | 72,781 |
| 3344160040 | Television transformers and reactors (horizontal output, vertical deflection, focus coils, deflection yokes, etc.)..... | 20 | 18,838 | 173,856 r/ | 18,164 | 162,351 |
| 3344160045 | Toroidal windings (transformers and reactors) (except complete magnetics amplifiers)..... | 113 | 188,413 | 239,585 r/ | 125,968 r/ | 198,885 |
| 3344160050 | Other (balun coils, permeability tuning devices, etc.)..... | 86 | (X) | 447,052 | (X) | 394,765 |
| 334417 | Electronic connectors..... | (NA) | (X) | 6,712,099 | (X) | 4,988,397 |
| 3344171 | Coaxial (RF) connectors..... | 55 | 899,815 | 781,688 | 644,000 | 630,507 |
| 3344171005 | Miniature (BNC, PNC, MHB)..... | 31 | 86,163 | 146,066 r/ | 23,089 | 69,411 |
| 3344171010 | Subminiature (SMA, SMB, SMC)..... | 27 | 100,523 | 148,170 r/ | 31,649 r/ | 66,316 |
| 3344171015 | Other standard and precision..... | 44 | 713,129 | 487,452 | 589,262 r/ | 494,780 |

Continued

Table 2. Quantity and Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000 and 1999
 [Quantity in thousands of units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2000 | | 1999 | |
|--------------|---|-------------|-----------|--------------|--------------|------------|
| | | | Quantity | Value | Quantity | Value |
| 3344174 | Cylindrical connectors..... | 48 | 166,007 | 658,736 | 114,411 | 549,475 |
| 3344174005 | Heavy duty and standard..... | 35 | 116,888 | 393,656 | 72,882 | 317,169 |
| 3344174010 | Miniature..... | 20 | 17,874 | 108,139 | 14,820 | 91,031 |
| 3344174015 | Subminiature..... | 16 | 31,245 | 156,941 r/ | 26,709 r/ | 141,275 |
| 3344177 | Rack and panel (rectangular) connectors..... | 44 | 1,818,648 | 676,230 | 889,173 | 391,408 |
| 3344177005 | Integral shell, Mil-C-22857 (8434) and similar types..... | 27 | 1,112,266 | 319,602 | 362,819 | 136,286 |
| | Subminiature: | | | | | |
| 3344177010 | Ribbon, including planar cable type 16/..... | 8 | (D) | (D) | (D) | (D) |
| 3344177015 | D-Subminiature, including planar cable type 16/..... | 21 | 694,058 | 307,862 | 515,319 | 212,488 |
| 3344177020 | Microminiatures..... | 10 | 12,324 | 48,766 r/ | 11,035 r/ | 42,634 |
| 334417A | Printed circuit connectors..... | 66 | 5,673,203 | 2,389,277 | 4,919,273 | 1,375,841 |
| 334417A005 | Card insertion types..... | 35 | 954,099 | 413,075 | 525,248 r/ | 96,479 |
| | Two-piece types: | | | | | |
| 334417A010 | Post, header and receptacle type..... | 37 | 3,794,243 | 777,884 | 3,794,972 | 575,671 |
| 334417A015 | Other two-piece types..... | 34 | 924,861 | 1,198,318 r/ | 599,053 r/ | 703,691 |
| 334417D | Other connectors, including parts..... | 117 | (X) | 2,206,168 | (X) | 2,041,166 |
| 334417D005 | Hermetic sealed (except single-contact and coaxial types)..... | 21 | 210,757 | 166,443 | 237,699 | 134,520 |
| 334417D010 | Plate module types..... | 6 | 10,022 | 37,075 | 9,477 | 33,373 |
| 334417D015 | Fiber optic connectors 17/..... | 15 | (D) | (D) | (D) | (D) |
| 334417D030 | Other planar cable (flat conductor or ribbon cable), excluding rack and panel (rectangular types) 17/..... | 26 | 360,078 | 493,757 | 416,841 | 438,435 |
| 334417D020 | Miscellaneous special purpose..... | 68 | 2,207,995 | 1,234,437 r/ | 1,541,194 r/ | 1,170,094 |
| 334417D025 | Parts for connectors (connectors shipped but still requiring further manufacture)..... | 31 | (X) | 274,456 | (X) | 264,744 |
| 334419 | Electronic components and subassemblies, n.e.c..... | (NA) | (X) | 50,368,921 | (X) | 42,059,878 |
| 3344191 | Filters (except microwave) and piezoelectric devices.. | 118 | 359,705 | 1,075,556 | 287,960 | 857,456 |
| 33441911 | Filters (except microwave)..... | (NA) | 172,315 | 344,553 | 157,200 | 304,303 |
| 3344191105 | Mechanical, excluding optical lenses (germanium silicon, fused quartz, rock salt, and other)..... | 9 | 677 | 45,211 r/ | 525 r/ | 33,381 |
| | Radio frequency interference/electro magnetic interference (RFI/EMI) control filters: | | | | | |
| 3344191110 | Ceramic dielectric..... | 15 | 145,478 | 151,540 | 139,246 | 139,606 |
| 3344191115 | Combination or other dielectric..... | 20 | 25,478 | 109,261 | 14,233 r/ | 99,651 |
| 3344191120 | Electronic wave filters (LC band and high pass)..... | 19 | 682 | 38,541 | 3,196 | 31,665 |
| 33441912 | Piezoelectric devices..... | (NA) | 187,390 | 731,003 | 130,760 | 553,153 |
| | Oscillator crystals: | | | | | |
| 3344191225 | AT-cut..... | 29 | 10,338 | 51,987 r/ | 8,615 r/ | 39,834 |
| 3344191230 | Other..... | 9 | 52,471 | 66,114 | 53,767 r/ | 67,545 |
| | Crystal oscillators: | | | | | |
| 3344191235 | Oven..... | 9 | 360 | 43,625 | 137 | 25,107 |
| 3344191240 | TCXO/VCXO..... | 11 | 2,308 | 40,107 | 2,768 | 38,669 |
| 3344191245 | Hybrid..... | 14 | 9,263 | 69,892 r/ | 6,026 | 53,716 |
| 3344191250 | Other..... | 6 | 3,103 | 28,591 | 2,545 | 22,472 |
| | Crystal filters: | | | | | |
| 3344191255 | Monolithic, including filter crystals and/or monolithic filter units not assembled into filters... | 5 | 691 | 9,054 r/ | 587 r/ | 9,864 |
| 3344191260 | Packaged AT-cut, including monolithic, tandem monolithic, and resonator filter assemblies..... | 7 | 71 | 2,569 r/ | 49 r/ | 1,910 |
| 3344191265 | Other..... | 8 | 76,111 | 128,259 | 33,837 r/ | 87,061 |
| | Crystal blanks: | | | | | |
| 3344191270 | AT-cut..... | 7 | 5,863 | 11,471 r/ | 4,090 r/ | 7,469 |
| 3344191275 | Other..... | 18 | 26,811 | 279,334 r/ | 18,339 | 199,506 |
| 3342207 | Microwave components and devices (except antenna), tubes, and semiconductors..... | 130 | (X) | 2,449,843 | (X) | 1,621,571 |
| 3342207005 | Ferrite, including yttrium garnets, microwave components (circulators, isolators, phase shifters, attenuators, equalizers, limiters, mixers, etc.)..... | 40 | (X) | 1,104,009 | (X) r/ | 499,177 |
| | Microwave devices, other than ferrite and solid state: | | | | | |
| 3342207010 | Attenuators (dummy loads, high and low-power terminations, etc.)..... | 37 | (X) | 135,465 | (X) | 92,378 |
| 3342207015 | Cavities (amplifier cavities, coaxial tuned cavities, etc.)..... | 17 | (X) | 51,946 | (X) r/ | 62,443 |

Continued

Table 2. Quantity and Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000 and 1999
 [Quantity in thousands of units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2000 | | 1999 | |
|--------------|--|-------------|----------|------------|-----------|------------|
| | | | Quantity | Value | Quantity | Value |
| 3342207020 | Couplers (directional couplers, hybrid junctions, etc.)..... | 29 | (X) | 60,741 | (X) | 64,156 |
| 3342207025 | Reactive microwave components, n.e.c..... | 37 | (X) | 245,964 | (X) | 185,026 |
| 3342207030 | Switches, coaxial and waveguide..... | 33 | (X) | 85,673 | (X) | 67,412 |
| 3342207035 | Rigid waveguide and fittings (bend and twists, couplings, flanges, other simple waveguide components, n.e.c.)..... | 21 | (X) | 54,705 | (X) | 52,383 |
| 3342207040 | Flexible waveguides and fittings..... | 13 | (X) | 50,108 | (X) | 56,541 |
| 3342207045 | Other microwave components (except ferrite devices) (coaxial to waveguide and other transitions, duplexers and diplexers, holders and mounts, linear and circular polarizers, magnetron test plumbing, rotary joints and sector scan joints, mixer arrays, shutters, tuners, windows, etc.)..... | 37 | (X) | 291,422 | (X) | 208,733 |
| 3342207050 | Microwave subassemblies, including parametric amplifiers and other solid-state assemblies..... | 28 | (X) | 369,810 | (X) | 333,322 |
| 3344194 | Transducers, electrical/electronic I/O, n.e.c..... | 92 | 122,050 | 1,408,305 | 123,398 | 1,330,718 |
| 3344194005 | Electroacoustic (sonar, ultrasonic, vibration*, etc.)..... | 16 | 19,619 | 127,259 r/ | 22,717 r/ | 130,532 |
| | Electromechanical: | | | | | |
| 3344194010 | Accelerometers*..... | 12 | 5,781 | 177,424 r/ | 4,588 r/ | 170,429 |
| 3344194015 | Pressure*..... | 40 | 62,191 | 532,468 | 55,956 | 534,837 |
| 3344194020 | Strain gauges and other mechanical*..... | 24 | 1,866 | 154,594 | 1,637 r/ | 140,734 |
| 3344194025 | Thermoelectric (pyrometers, thermocouples*, etc.)..... | 8 | 2,772 | 65,901 | 2,372 | 52,749 |
| 3344194030 | Other (optical, chemical, magnetic, nuclear*, etc.)..... | 25 | 29,821 | 350,659 | 36,128 | 301,437 |
| 3344197 | Switches, mechanical types for electronic circuitry..... | 81 | (X) | 901,292 | (X) | 883,438 |
| 3344197020 | Slide, including rocker, miniature and subminiature*.. | 15 | (X) | 72,850 | (X) | 57,428 |
| 3344197025 | Rotary selector, including lever and jog-lever, miniature and subminiature*..... | 20 | (X) | 65,700 | (X) | 53,425 |
| 3344197030 | Keyboard*..... | 10 | (X) | 61,057 | (X) | 56,777 |
| 3344197035 | Pushbutton*..... | 23 | (X) | 89,239 | (X) r/ | 84,175 |
| 3344197040 | Snap-action*..... | 11 | (X) | 37,575 | (X) | 46,081 |
| 3344197045 | Thumbwheel*..... | 6 | (X) | 19,593 | (X) r/ | 17,379 |
| 3344197015 | Membrane..... | 18 | (X) | 96,836 | (X) | 82,345 |
| 3344197005 | Toggle standard type 18/..... | 11 | (X) | (D) | (X) | (D) |
| 3344197010 | Toggle miniature and subminiature 18/..... | 6 | (X) | 67,090 | (X) r/ | 67,384 |
| 3344197050 | DIP..... | 10 | (X) | 54,782 | (X) | 41,840 |
| 3344197055 | Other..... | 38 | (X) | 336,570 | (X) r/ | 376,604 |
| 334418A | Printed circuit assemblies (loaded boards, subassemblies and modules) 19/..... | 748 | (X) | 35,992,320 | (X) | 30,090,948 |
| 334418A005 | Computer and peripheral printed board assemblies 19/..... | 285 | (X) | 15,076,622 | (X) | 12,935,735 |
| 334418A010 | Communications printed board assemblies 19/..... | 254 | (X) | 10,112,581 | (X) r/ | 7,195,560 |
| 334418A015 | Industrial process control board assemblies 19/..... | 228 | (X) | 924,581 | (X) | 907,261 |
| 334418A020 | Instrumentation printed board assemblies (except industrial process) 19/..... | 190 | (X) | 2,319,804 | (X) r/ | 2,281,213 |
| 334418A025 | Search and detection printed board assemblies 19/..... | 59 | (X) | 106,886 | (X) r/ | 114,055 |
| 334418A030 | Consumer electronics, printed board assemblies 19/..... | 137 | (X) | 548,747 | (X) | 498,995 |
| 334418A035 | Other electronics, printed board assemblies, including office equipment and point of sales 19/..... | 325 | (X) | 6,903,099 | (X) r/ | 6,158,129 |
| 334419D | Electronic components and subassemblies, n.e.c..... | 565 | (X) | 8,541,605 | (X) | 7,275,747 |
| | Antenna systems (except structural towers sold separately): | | | | | |
| 334419D108 | Home antenna..... | 9 | 33,186 | 363,821 r/ | 24,158 r/ | 297,795 |
| 334419D110 | Auto antenna..... | 13 | 24,285 | 87,062 | 23,452 | 78,369 |
| 334419D115 | Antenna accessories, sold separately (pedestals, drives, passive reflectors, rotators, radomes, etc.)..... | 22 | (X) | 95,584 | (X) r/ | 93,041 |
| 334419D220 | Delay lines (distributed constant, lumped constant, magnetostrictive, ultrasonic, etc.)..... | 14 | 7,929 | 51,891 r/ | 7,187 | 39,922 |
| 334419D325 | Oscillators (except instrumentation and crystal types)..... | 21 | 19,053 | 282,908 | 4,571 r/ | 153,648 |
| 3342203051 | Magnetic recording and reproducing heads, including audio, video, digital and instrumentation..... | 12 | (D) | (D) | (D) | (D) |

Continued

Table 2. Quantity and Value of Shipments of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000 and 1999
 [Quantity in thousands of units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 2000 | | 1999 | |
|--------------|---|-------------|----------|--------------|----------|-----------|
| | | | Quantity | Value | Quantity | Value |
| | Static power supply converters for electronic applications, sold separately: | | | | | |
| 334419D530 | Regulated..... | 73 | 49,024 | 1,743,297 r/ | 45,733 | 1,383,527 |
| 334419D535 | Other (unregulated, variable frequency, ac, dc, converters and inverters, vibrator, etc.)..... | 48 | (X) | 995,560 | (X) r/ | 789,681 |
| 334419D640 | Electronic cable harnesses and cable assemblies..... | 265 | (X) | 2,449,738 | (X) | 1,965,416 |
| 334419D745 | Cryogenic cooling devices (cryostats, etc.) for infrared detectors, masers..... | 4 | (X) | 14,150 | (X) | 16,021 |
| 334419D850 | Liquid crystal displays (LCD) and other liquid devices..... | 15 | (X) | 80,306 | (X) | 76,498 |
| 334419D955 | Magnetic cores..... | 16 | (X) | 348,451 | (X) r/ | 305,800 |
| | Electronic parts, n.e.c. and specialized electronic hardware: | | | | | |
| | Sockets for electronic component insertion: | | | | | |
| 334419DA65 | Integrated circuit sockets..... | 14 | (X) | 143,190 | (X) | 130,024 |
| 334419DA60 | Other, including tube, relay, discrete semiconductors, ac and dc converters and inverters, etc..... | 15 | (X) | 99,914 | (X) r/ | 91,103 |
| 336322C119 | Electronic control modular chips for motor vehicles..... | 3 | (X) | (D) | (X) | (D) |
| 334419D870 | All other electronic parts and specialized electronic hardware, n.e.c..... | 133 | (X) | 1,530,364 | (X) r/ | 1,525,398 |
| | Electronic research, development, testing, and evaluation (receipts or billings, not reported as shipments of specific products): | | | | | |
| 99980 42 | Systems..... | 17 | (X) | 104,504 | (X) | 115,147 |
| 99980 43 | Equipment and subassemblies..... | 29 | (X) | 240,141 | (X) | 249,466 |
| 99980 44 | Component parts..... | 27 | (X) | 155,958 | (X) r/ | 231,544 |
| 99980 46 | Basic scientific electronic research..... | 18 | (X) | 72,879 | (X) | 71,038 |
| 99980 47 | Design and engineering services..... | 66 | (X) | 486,118 | (X) | 468,340 |
| 99980 48 | Software..... | 5 | (X) | (D) | (X) | (D) |
| 99980 49 | Testing..... | 12 | (X) | 24,314 | (X) | 23,414 |
| 99980 50 | Supplies and accessories sold with components..... | 7 | (X) | 1,628 | (X) r/ | 3,754 |

*Similar products are collected on Current Industrial Report Series MA335A, "Switchgear and Industrial Controls" and MA335K, "Wiring Devices and Supplies." - Represents zero. D Withheld to avoid disclosing data for individual companies. NA Not available. n.e.c. Not else where classified. r/Revised by 5 percent or more from previously published data. X Not applicable.

- 1/Product code 3344111225 is combined with product code 3344111230 to avoid disclosing data for individual companies.
- 2/Product code 3344111235 is combined with product code 3344111240 to avoid disclosing data for individual companies.
- 3/Product codes 3344111345 and 3344111350 are combined with product code 3344111355 to avoid disclosing data for individual companies.
- 4/Product code 3344114010 is combined with product code 3344114015 to avoid disclosing data for individual companies.
- 5/Product code 3344131015 is combined with product code 3344131021 to avoid disclosing data for individual companies.
- 6/For 2000, product codes 3344131092 and 3344131094 are combined with product code 334413096 to avoid disclosing data for individual companies.
- 7/For 2000, value data for product code 3344134005 is combined with product code 334414010 to avoid disclosing data for individual companies.
- 8/Product code 3344137025 is combined with product code 3344137005 to avoid disclosing data for individual companies.
- 9/Product codes 3344140324, 3344140327, and 3344140330 are combined with product code 3344140333 to avoid disclosing data for individual companies.
- 10/Product code 3344140554 is combined with product code 3344140548 to avoid disclosing data for individual companies.
- 11/Product code 3344140551 is combined with product code 3344140557 to avoid disclosing data for individual companies.
- 12/Product code 3344140769 is combined with product code 3344140772 to avoid disclosing data for individual companies.
- 13/Product code 3344150344 is combined with product code 3344150348 to avoid disclosing data for individual companies.
- 14/Product code 3344150352 is combined with product code 3344150360 to avoid disclosing data for individual companies.
- 15/Product code 3344150464 is combined with product code 3344150472 to avoid disclosing data for individual companies.
- 16/Product code 3344177010 is combined with product code 3344177015 to avoid disclosing data for individual companies.
- 17/Product code 334417D015 is combined with product code 334417D030 to avoid disclosing data for individual companies.
- 18/Product code 3344197005 is combined with product code 3344197010 to avoid disclosing data for individual companies.
- 19/These data are collected on two Current Industrial Report forms, MA334R, "Computers and Office and Accounting Machines," and MA334Q, "Semiconductors, Printed Circuit Boards, and Other Electronic Components."

Table 3. Shipments, Exports, and Imports of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000
 [Values in thousands of dollars]

| Product code | Product description | Manufactures' shipments (value, f.o.b. plant) | Exports of domestic merchandise (value at port) 1/ | Imports for consumption 2/ |
|---|--|---|--|----------------------------|
| 3344111105 | High vacuum tubes..... | 69,282 | 57,923 | 17,988 |
| 3344111110 | Gas and vapor tubes..... | 31,796 | 12,218 | 765 |
| 3344111115 | Klystrons, including amplifier, reflex and other..... | 55,274 | 28,959 | 50,432 |
| 3344111120 | Magnetrons, including pulsed, fixed, tunable, cross-field, continuous wave and other..... | 43,729 | 10,628 | 35,753 |
| 3344111345, 350 | Light sensing tubes, including camera tubes, photo emissive and photo conductive, and image intensifiers and converters 3/..... | (D) | 89,893 | 30,257 |
| 3344111355 | Light sensing tubes, n.e.c., including photo multipliers 3/..... | 103,832 | 35,216 | 48,130 |
| 3344114005 | Receiving type electron tubes, including rebuilt..... | (D) | 10,839 | 5,613 |
| 3344114010, 015, 020, 025 | Television tubes, color, and black and white new and rebuilt..... | (D) | 2,014,756 | 148,656 |
| 3344117030 | Electron tube parts (except glass blanks)..... | 143,369 | 121,785 | 364,215 |
| 3344120105, 210, 315, 420, 425, 430, 435, 440 | Printed circuit boards..... | 10,140,628 | 2,864,694 | 3,070,906 |
| 3344131048 | Monolithic integrated circuits, digital (except memory and silicon)..... | 1,667,833 | 684,236 | 127,424 |
| 3344131036 | Monolithic integrated circuits, digital, memory (except silicon)..... | (D) | 554,293 | 443,659 |
| 3344131015 | Monolithic integrated circuits, digital, silicon, bipolar transistors, memory, static random access memory (SRAM) 4/..... | (D) | 81,861 | 10,457 |
| 3344131021 | Monolithic integrated circuits, digital, silicon, bipolar transistors, memory (except static random access memory (SRAM)) 4/..... | 9,208 | 26,718 | 16,563 |
| 3344131027 | Monolithic integrated circuits, digital, silicon, bipolar transistors (except memory, emitter logic (ECL))..... | (D) | 48,026 | 129,265 |
| 3344131024 | Monolithic integrated circuits, digital, silicon, bipolar transistors (except memory, transistor-transistor logic (TTL))..... | 238,148 | 19,426 | 91,590 |
| 3344131030 | Monolithic integrated circuits, digital, silicon, bipolar transistors (except memory, n.e.c.)..... | 1,395,060 | 130,721 | 176,747 |
| 3344131064, 066 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors: With volatile memory (DRAM), not over 300 k | (D) | 196,259 | 59,620 |
| 3344131068, 070, 072 | With volatile memory (DRAM), over 300 k | (D) | 2,501,992 | 6,490,651 |
| 3344131082, 084, 086 | With volatile memory (SRAM), not over 300 k | 441,921 | 236,357 | 348,482 |
| 3344131088, 090 | With volatile memory (SRAM), over 300 k | 1,567,121 | 337,777 | 1,799,223 |
| 3344131092, 094, 096 | Except volatile memory, electrically (EEPROM)..... | 943,830 | 625,383 | 2,702,150 |
| 3344131074, 076, 078 | Except volatile memory (except electrically (EEPROM))..... | (D) | 158,885 | 428,607 |
| 3344131080 | Except volatile memory, n.e.c. | 4,998,580 | 936,411 | 1,494,055 |
| 3344131054 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors (except memory type): Microprocessors 8 bits or less..... | 990,386 | 182,850 | 1,201,960 |
| 3344131057 | Microprocessors 16 bits..... | 1,370,425 | 88,096 | 600,732 |
| 3344131060 | Microprocessors 32 bits or more..... | (D) | 1,411,389 | 3,068,735 |
| 3344131033 | Other (microcontrollers, ASIC's PLA's, etc.)..... | 9,757,107 | 2,335,528 | 10,811,950 |

Continued

Table 3. Shipments, Exports, and Imports of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000
 [Values in thousands of dollars]

| Product code | Product description | Manufactures' shipments (value, f.o.b. plant) | Exports of domestic merchandise (value at port) 1/ | Imports for consumption 2/ |
|---------------------------|--|---|--|----------------------------|
| 3344131039 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors, complementary BiMOS, memory type..... | (D) | 39,097 | 152,047 |
| 3344131042 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors, complementary BiMOS (except memory type)..... | 766,917 | 75,874 | 180,743 |
| 3344131045 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors, complementary BiMOS, n.e.c., including logic type (except memory types)..... | 2,944,642 | 546,854 | 292,290 |
| 3344131062, 003, 006, 009 | Monolithic integrated circuits, nondigital, silicon, including linear, analog, radio frequency, etc. | (D) | 3,423,988 | 6,792,640 |
| 3344131018, 051 | Hybrid integrated circuits..... | 1,057,273 | 946,946 | 1,212,281 |
| 3344140324 | Capacitors, fixed, tantalum electrolytic, metal case, including foil and wet 5/..... | (D) | 32,425 | 25,382 |
| 3344140327 | Capacitors, fixed, tantalum electrolytic, dipped 5/..... | (D) | 15,033 | 44,335 |
| 3344140330 | Capacitors, fixed, tantalum electrolytic, chips 5/..... | (D) | 164,211 | 472,496 |
| 3344140333 | Capacitors, fixed, tantalum electrolytic, n.e.c., including leaded 5/..... | 430,506 | 167,280 | 271,881 |
| 3344140436 | Capacitors, fixed, aluminum electrolytic, not exceeding 35 mm..... | (D) | 97,472 | 348,259 |
| 3344140439, 442, 445 | Capacitors, fixed, aluminum electrolytic, over 35 mm..... | (D) | 14,564 | 45,996 |
| 3344140548 | Capacitors, fixed, ceramic dielectric, single layer, chips 6/..... | 24,677 | 57,004 | 32,063 |
| 3344140554 | Capacitors, fixed, ceramic dielectric, single layer, axial and radial 6/..... | (D) | 24,250 | 62,443 |
| 3344140551 | Capacitors, fixed, ceramic dielectric, multilayer, axial leads 7/..... | (D) | 74,390 | 27,867 |
| 3344140557 | Capacitors, fixed, ceramic dielectric, multilayer, radial leads 7/..... | 184,604 | 77,330 | 91,598 |
| 3344140560 | Capacitors, fixed, ceramic dielectric, multilayer, chips..... | 923,687 | 570,401 | 1,006,560 |
| 3344140663 | Capacitors, fixed, mica dielectric | 8,937 | 2,312 | 4,895 |
| 3344140666 | Capacitors, fixed, n.e.c. | 109,913 | 568,401 | 123,111 |
| 3344140769 | Capacitors, variable, mica/ceramic/glass dielectric 8/..... | (D) | 11,879 | 7,903 |
| 3344140772 | Capacitors, variable, n.e.c. 8/..... | 47,130 | 113,876 | 40,486 |
| 3344140875 | Capacitors, parts, including unfinished chips for further finishing..... | (D) | 443,210 | 71,613 |
| 3344140103 | Capacitors, fixed, ac type, less than 300 volts..... | 34,662 | 9,517 | 30,142 |
| 3344140106 | Capacitors, fixed, ac type, 300-599 volts..... | 80,150 | 3,180 | 39,487 |
| 3344140109 | Capacitors, fixed, ac type, 600-999 volts..... | 11,937 | 67 | 3,771 |
| 3344140112 | Capacitors, fixed, ac type, 1,000 volts or more..... | 10,459 | 8,731 | 1,529 |
| 3344140215 | Capacitors, fixed, dc type, axial | 46,846 | 2,073 | 4,309 |
| 3344140218 | Capacitors, fixed, dc type, radial | 29,758 | 6,991 | 85,246 |
| 3344140221 | Capacitors, fixed, dc type, chips and other leaded..... | (D) | 44,220 | 35,591 |
| 3344134005 | Transistors, signal, less than 1 watt dissipation 9/..... | (D) | 159,212 | 496,493 |
| 3344134010 | Transistors, signal, 1 watt or greater dissipation 9/..... | 1,375,314 | 320,925 | 1,111,896 |
| 3344137010 | Signal diodes and assemblies..... | 15,164 | 31,602 | 80,868 |
| 3344137025 | Zener diodes..... | (D) | 50,214 | 121,360 |
| 3344137015, 005 | Diodes and rectifiers, n.e.c..... | (D) | 418,643 | 754,217 |
| 3344137020 | Microwave diodes..... | 391,367 | 67,968 | 49,973 |
| 334413A005 | Solar cell..... | 123,792 | 184,865 | 70,864 |

Continued

Table 3. Shipments, Exports, and Imports of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000
 [Values in thousands of dollars]

| Product code | Product description | Manufactures' shipments (value, f.o.b. plant) | Exports of domestic merchandise (value at port) 1/ | Imports for consumption 2/ |
|--|---|---|--|----------------------------|
| 334413A015, 020 | Light-emitting diodes..... | (D) | 397,370 | 1,000,389 |
| 334413A030 | Optical coupled isolators..... | (D) | 88,568 | 161,113 |
| 334413A035 | Other light-sensitive and light-emitting devices..... | 1,083,196 | 249,584 | 249,106 |
| 334413A040 | Thyristors, SCR's, triacs, and PNP diodes..... | (D) | 60,292 | 201,282 |
| 334413A055 | Chips and wafers for integrated circuits..... | 4,763,169 | 21,920,717 | 2,826,345 |
| 334413A060 | Chips and wafers for discrete semiconductors..... | 540,237 | 1,900,890 | 300,622 |
| 334413A065 | Other semiconductor parts..... | 1,938,341 | 445,059 | 253,556 |
| 3344150104 | Carbon resistors, fixed, composition or film types, designed for surface mounting (SMD) by contact, having two terminals, cylindrical leadless having two leads, carbon composition, and carbon film..... | 18,993 | 46,467 | 42,180 |
| 3344150208, 212 | Carbon resistors, fixed, with a power capacity of 20 watts or less, surface mounted (SMD), having two terminals, flat resistor chips, and cylindrical leadless resistors..... | (D) | 40,625 | 201,698 |
| 3344150216, 220 | Carbon resistors, fixed, with a power capacity of 20 watts or less, surface mounted (SMD), having more than two terminals, resistor, resistor-capacitor networks..... | 59,132 | 14,524 | 40,264 |
| 3344150224 | Resistors, fixed, with a power capacity of 20 watts or less, wirebound, having two leads..... | 74,646 | 29,468 | 52,515 |
| 3344150228 | Resistors, fixed, with a power capacity of 20 watts or less, other than wirebound, having two leads..... | 100,650 | 58,233 | 88,645 |
| 3344150232, 236, 240 | Resistors, fixed, with a power capacity of 20 watts or less, resistor networks, having more than two leads..... | 124,310 | 48,308 | 45,611 |
| 3344150468, 464, 472 | Resistors, variable, wirewound, including rheostats and potentiometers, for a power handling capacity not exceeding 20 watts..... | (D) | 7,217 | 23,756 |
| 3344150344, 348, 356, 352, 360, 576, 580 | Resistors, variable, n.e.c. | (D) | 248,579 | 317,466 |
| 3344150684 | Resistors, parts | 207,832 | 110,109 | 59,708 |
| 3344191225, 230, 235, 240, 245, 250, 255, 260, 265 | Piezoelectric devices (except crystal blanks)..... | 440,198 | 289,305 | 888,074 |
| 3344191270, 275 | Piezoelectric devices, crystal blanks..... | 290,805 | 22,819 | 14,653 |
| 3344160040 | Television transformers and reactors..... | 173,856 | 20,928 | 133,347 |
| 3344160020, 030, 035, 010, 015, 045, 050 | Coils, transformers, reactors, and chokes for electronic applications, n.e.c. | 1,353,464 | 419,133 | 1,089,995 |
| 3344171000 | Connectors, coaxial..... | 781,688 | 189,898 | 332,569 |
| 3344174000 | Connectors, cylindrical | 658,736 | 36,027 | 104,816 |
| 3344177000 | Connectors, rack and panel | 676,230 | 25,164 | 72,370 |
| 334417A000 | Connectors, printed circuit | 2,389,277 | 376,267 | 586,192 |
| 334419D108, 110, 115 | Antenna systems (except structural towers, sold separately)..... | 546,467 | 40,083 | 46,485 |
| 3342203051 | Magnetic recording and reproducing heads..... | (D) | 13,692 | 9,655 |
| 3344197025 | Switches, rotary selector..... | 65,700 | 37,647 | 16,477 |
| 3344197035 | Switches, pushbutton..... | 89,239 | 80,815 | 157,891 |
| 3344197020 | Switches, slide, including rocker, miniature and subminiature..... | 72,850 | 4,125 | 20,440 |

Continued

Table 3. Shipments, Exports, and Imports of Semiconductors, Printed Circuit Boards, and Other Electronic Components: 2000
 [Values in thousands of dollars]

| Product code | Product description | Manufacturers' shipments (value, f.o.b. plant) | Exports of domestic merchandise (value at port) 1/ | Imports for consumption 2/ |
|--|----------------------------|--|--|----------------------------|
| 3344197040 | Switches, snap-action..... | 37,575 | 23,160 | 102,031 |
| 3344197030, 045, 015, 005, 010, 050, 055 | Switches, other..... | 635,928 | 843,675 | 1,176,200 |

D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified.

1/Source: Census Bureau report EM 545, U.S. Exports.

2/Source: Census Bureau report IM 145, General Imports for Consumption.

3/Manufacturers' shipments for "Light sensing tubes, including camera tubes, photo emissive and photo conductive, and image intensifiers and converters" and "Light sensing tubes, n.e.c., including photo multipliers" are combined to avoid disclosing data for individual companies.

4/Manufacturers' shipments for "Monolithic integrated circuits, digital, silicon, bipolar transistors, memory, static random access memory (SRAM)" and "Monolithic integrated circuits, digital, silicon, bipolar transistors, memory (except static random access memory (SRAM))" are combined to avoid disclosing data for individual companies.

5/Manufacturers' shipments for "Capacitors, fixed, tantalum electrolytic, metal case, including foil and wet," "Capacitors, fixed, tantalum electrolytic, dipped," "Capacitors, fixed, tantalum electrolytic, chips" and "Capacitors, fixed, tantalum electrolytic, n.e.c., including leaded" are combined to avoid disclosing data for individual companies.

6/Manufacturers' shipments for "Capacitors, fixed, ceramic dielectric, single layer, chips" and "Capacitors, fixed, ceramic dielectric, single layer, axial and radial" are combined to avoid disclosing data for individual companies.

7/Manufacturers' shipments for "Capacitors, fixed, ceramic dielectric, multilayer, axial leads" and "Capacitors, fixed, ceramic dielectric, multilayer, radial leads" are combined to avoid disclosing data for individual companies.

8/Manufacturers' shipments for "Capacitors, variable, mica/ceramic/glass dielectric" and "Capacitors, variable, n.e.c." are combined to avoid disclosing data for individual companies.

9/Manufacturers' shipments for "Transistors, signal, less than 1 watt dissipation" and "Transistors, signal, 1 watt or greater dissipation" are combined to avoid disclosing data for individual companies.

Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

| Product code | Product description | Export numbers | Import numbers |
|--------------------------------|--|--|--|
| 3344114005 | Receiving-type electron tubes..... | 8540.81.0000 | 8540.81.0000 |
| 3344114010, 015, 015, 020, 025 | Television tubes, color, black and white, new and rebuilt..... | 8540.11.0035 8540.11.0070 8540.11.0080 8540.12.0000 | 8540.11.1030 8540.11.1040 8540.11.1050 8540.11.1055 8540.11.1065 8540.11.1080 8540.11.2400 8540.11.2800 8540.11.3000 8540.11.4400 8540.11.4800 8540.11.5000 8540.12.1040 8540.12.1080 8540.12.2000 8540.12.5040 8540.12.5080 8540.12.7000 |
| 3344111110 | Gas and vapor tubes..... | 8540.89.0020 | 8540.89.0020 |
| 3344111115 | Klystrons, including amplifiers, reflex, and other..... | 8540.72.0000 8540.79.0000 | 8540.72.0000 8540.79.0000 |
| 3344111120 | Magnetrons, including pulsed, fixed, tunable, cross-field, continuous wave and other..... | 8540.71.2000 8540.71.4000 | 8540.71.2000 8540.71.4000 |
| 3344111345, 350 | Light-sensing tubes, including camera tubes, photo emissive and photo conductive, and image intensifiers and converters..... | 8540.20.2000 8540.20.4000 | 8540.20.2040 8540.20.2080 8540.20.4000 |
| 3344111355 | Light-sensing tubes, n.e.c., including photo multipliers.. | 8540.89.0060 | 8540.89.0060 |
| 3344111105 | High vacuum tubes, including triodes, multigrid external and internal anodes, diodes and others..... | 8540.89.0040 8540.89.0080 | 8540.89.0040 8540.89.0080 |
| 3344117030 | Electron tube parts (except glass blanks)..... | 8540.91.2000 8540.91.4000 8540.99.0000 | 8540.91.1500 8540.91.2000 8540.91.5000 8540.99.8000 |
| 3344131036 | Monolithic integrated circuits, digital, memory (except silicon)..... | 8542.13.8092 8542.13.8096 | 8542.13.8092 8542.13.8096 |
| 3344131048 | Monolithic integrated circuits, digital (except memory and silicon)..... | 8542.13.8010 | 8542.13.8010 |
| 3344131015 | Monolithic integrated circuits, digital, silicon, bipolar transistors, memory, SRAM..... | 8542.14.8004 | 8542.14.8004 |
| 3344131021 | Monolithic integrated circuits, digital, silicon, bipolar transistors, memory (except SRAM)..... | 8542.14.8007 | 8542.14.8007 |

Continued

Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

| Product code | Product description | Export numbers | Import numbers |
|----------------------|--|----------------|--|
| 3344131024 | Monolithic integrated circuits, digital, silicon, bipolar transistors (except memory, transistor-transistor logic (TTL))..... | 8542.14.8011 | 8542.14.8011 |
| 3344131027 | Monolithic integrated circuits, digital, silicon, bipolar transistors (except memory, emitter coupled logic (ECL))..... | 8542.14.8012 | 8542.14.8012 |
| 3344131030 | Monolithic integrated circuits, digital, silicon, bipolar transistors (except memory, n.e.c.)..... | 8542.14.8017 | 8542.14.8017 |
| 3344131064, 066 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors volatile memory, (DRAM), not over 300,000 bits..... | 8542.13.8027 | 8542.13.8021 8542.13.8022 8542.13.8023 |
| 3344131068, 070, 072 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors volatile memory, (DRAM), over 300,000 bits..... | 8542.13.8028 | 8542.13.8024 8542.13.8026 8542.13.8034 |
| 3344131082, 084, 086 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors volatile memory, (SRAM), not over 300,000 bits..... | 8542.13.8043 | 8542.13.8037 8542.13.8038 8542.13.8039 |
| 3344131088, 090 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors volatile memory (SRAM), over 300,000 bits..... | 8542.13.8044 | 8542.13.8041 8542.13.8049 |
| 3344131092, 094, 096 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors (except volatile memory (EEPROM))..... | 8542.13.8056 | 8542.13.8051 8542.13.8052 8542.13.8057 |
| 3344131074, 076, 078 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors (except volatile memory (EEPROM))..... | 8542.13.8061 | 8542.13.8058 8542.13.8059 8542.13.8060 |
| 3344131080 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors (except volatile memory, n.e.c.)..... | 8542.13.8065 | 8542.13.8065 |
| 3344131054 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors, (except memory type, including microprocessors having an internal data bus of 8 bits or less)..... | 8542.13.8066 | 8542.13.8066 |
| 3344131057 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors (except memory type, including microprocessors having an internal data bus of 16 bits)..... | 8542.13.8067 | 8542.13.8067 |
| 3344131060 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors (except memory type, including microprocessors having an internal data bus of 32 bits)..... | 8542.13.8068 | 8542.13.8068 |

Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

| Product code | Product description | Export numbers | Import numbers |
|---------------------------|---|--|--|
| 3344131033 | Monolithic integrated circuits, digital, silicon, metal oxide (MOS) field effect transistors, (except memory type: controllers, application specific intergrated circuits and programmable logic arrays (except microprocessors)..... | 8542.13.8072 | 8542.13.8072 |
| 3344131039 | Monolithic integrated circuits, digital, silicon, other than metal oxide (MOS) field effect transistors, complementary BiMOS, memory type..... | 8542.19.8073 | 8542.19.8073 |
| 3344131042 | Monolithic integrated circuits, digital, silicon, other than metal oxide (MOS) field effect transistors, complementary BiMOS, n.e.c., including logic type (except memory types)..... | 8542.19.8078 | 8542.19.8078 |
| 3344131045 | Monolithic integrated circuits, digital, silicon, other than metal oxide (MOS) field effect transistors, complementary BiMOS, n.e.c., including logic type (except memory types)..... | 8542.19.8079 | 8542.19.8079 |
| 3344131062, 003, 006, 009 | Monolithic integrated circuits, nondigital, silicon, including linear, analog, radio frequency, etc. | 8542.30.0040 8542.30.0060 8542.30.0065 8542.30.0080 8542.30.0090 | 8542.30.0040 8542.30.0060 8542.30.0065 8542.30.0080 8542.30.0090 |
| 3344131018, 051 | Hybrid integrated circuits..... | 8542.40.0075 8542.40.0095 | 8542.40.0075 8542.40.0095 |
| 3344140324 | Capacitors, fixed, tantalum electrolytic, metal case, including foil and wet..... | 8532.21.0020 | 8532.21.0020 |
| 3344140327 | Capacitors, fixed, tantalum electrolytic, dipped..... | 8532.21.0040 | 8532.21.0040 |
| 3344140330 | Capacitors, fixed, tantalum electrolytic, chips..... | 8532.21.0050 | 8532.21.0050 |
| 3344140333 | Capacitors, fixed, tantalum electrolytic, n.e.c., including leaded (molded axial and molded radial)..... | 8532.21.0080 | 8532.21.0080 |
| 3344140436 | Capacitors, fixed, aluminum electrolytic, not exceeding 35mm..... | 8532.22.0020 8532.22.0040 | 8532.22.0020 8532.22.0040 |
| 3344140439, 442, 445 | Capacitors, fixed, aluminum electrolytic, over 35 mm..... | 8532.22.0055 8532.22.0085 | 8532.22.0055 8532.22.0085 |
| 3344140548 | Capacitors, fixed, ceramic dielectric, single layer, chips... | 8532.23.0020 | 8532.23.0020 |
| 3344140554 | Capacitors, fixed, ceramic dielectric, single layer, axial and radial..... | 8532.23.0040 8532.23.0060 | 8532.23.0040 8532.23.0060 |
| 3344140551 | Capacitors, fixed, ceramic dielectric, multilayer axial leads..... | 8532.24.0040 | 8532.24.0040 |
| 3344140557 | Capacitors, fixed, ceramic dielectric, multilayer radial leads..... | 8532.24.0060 | 8532.24.0060 |

Continued

Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

| Product code | Product description | Export numbers | Import numbers |
|-----------------|---|------------------------------|------------------------------|
| 3344140560 | Capacitors, fixed, ceramic dielectric, multilayer chips..... | 8532.24.0020 | 8532.24.0020 |
| 3344140663 | Capacitors, fixed, mica dielectric..... | 8532.29.0020 | 8532.29.0020 |
| 3344140666 | Capacitors, fixed, n.e.c. | 8532.29.0040 | 8532.29.0040 |
| 3344140769 | Capacitors, variable, mica/ceramic/glass dielectric..... | 8532.30.0010 | 8532.30.0010 |
| 3344140772 | Capacitors, variable, n.e.c. | 8532.30.0090 | 8532.30.0090 |
| 3344140875 | Capacitors, parts, including unfinished chips for further finishing and assembly..... | 8532.90.0000 | 8532.90.0000 |
| 3344140103 | Capacitors, fixed, paper, plastic (film), metalized, and dual film/paper dielectric, ac types, less than 300 volts..... | 8532.25.0010 | 8532.25.0010 |
| 3344140106 | Capacitors, fixed, paper, plastic (film), metalized, and dual film/paper dielectric, ac types, 300 volts to 599 volts..... | 8532.25.0020 | 8532.25.0020 |
| 3344140109 | Capacitors, fixed, paper, plastic (film), metalized, and dual film/paper dielectric, ac types, 600 volts to 999 volts..... | 8532.25.0030 | 8532.25.0030 |
| 3344140112 | Capacitors fixed, paper, plastic (film), metalized, and dual film/paper dielectric, ac types, 1000 volts or over..... | 8532.25.0040 | 8532.25.0040 |
| 3344140215 | Capacitors, fixed, paper, plastic (film), metalized, and dual film/paper dielectric, dc types, axial lead..... | 8532.25.0060 | 8532.25.0060 |
| 3344140218 | Capacitors, fixed, paper, plastic(film), metalized, and dual film/paper dielectric, dc types, radial lead..... | 8532.25.0070 | 8532.25.0070 |
| 3344140221 | Capacitors, fixed, paper, plastic(film), metalized, and dual film/paper dielectric, dc types, chips and other leaded devices..... | 8532.25.0050 8532.25.0080 | 8532.25.0080 |
| 3344134005 | Transistors, signal, less than 1 watt dissipation..... | 8541.21.0080 | 8541.21.0075 8541.21.0095 |
| 3344134010 | Transistors, power, 1 watt or greater dissipation..... | 8541.29.0080 | 8541.29.0075 8541.29.0095 |
| 3344137025 | Zener diodes..... | 8541.10.0050 | 8541.10.0050 |
| 3344137020 | Microwave diodes..... | 8541.10.0060 | 8541.10.0060 |
| 3344137010 | Signal diodes and assemblies..... | 8541.10.0070 | 8541.10.0070 |
| 3344137015, 005 | Diodes and rectifiers, n.e.c. | 8541.10.0080 | 8541.10.0080 |

Continued

Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

| Product code | Product description | Export numbers | Import numbers |
|-----------------|--|--|--|
| 334413A005 | Solar cell..... | 8541.40.6020 8541.40.6030 | 8541.40.6020 8541.40.6030 |
| 334413A015, 020 | Light-emitting diodes..... | 8541.40.2000 | 8541.40.2000 |
| 334413A030 | Optical coupled isolators, including sensors and emitters..... | 8541.40.8000 | 8541.40.8000 |
| 334413A040 | Thyristors, SCR's, triacs, and PNP diodes..... | 8541.30.0080 | 8541.30.0080 |
| 334413A035 | Other light-sensitive and light-emitting devices..... | 8541.40.7080 8541.40.9500 | 8541.40.7080 8541.40.9500 |
| 334413A060 | Chips and wafers for discrete semiconductors..... | 8541.10.0040 8541.21.0040 8541.29.0040 8541.30.0040 8541.40.6010 8541.40.7040 8541.50.0040 8541.50.0080 | 8541.10.0040 8541.21.0040 8541.29.0040 8541.30.0040 8541.40.6010 8541.40.7040 8541.50.0040 8541.50.0080 |
| 334413A055 | Chips and wafers for integrated circuits..... | 8542.13.8005 8542.13.8010 8542.14.8001 8542.14.8002 8542.19.8001 8542.19.8002 8542.30.0040 | 8542.13.8005 8542.13.8010 8542.14.8001 8542.14.8002 8542.19.8001 8542.19.8002 8542.30.0004 |
| 334413A065 | Semiconductor parts, n.e.c., including headers, packages, heat sinks, accessories, etc. | 8541.90.0000 | 8541.90.0000 |
| 3344150104 | Resistors, fixed, carbon, composition or film types, designed for surface mounting (SMD) by contact, having two terminals, cylindrical leadless having two leads, carbon composition, and carbon film..... | 8533.10.0042 8533.10.0070 | 8533.10.0042 8533.10.0060 8533.10.0065 |
| 3344150208, 212 | Resistors, fixed, with a power capacity of 20 watts or less, surface mounted (SMD), having two terminals, including bith flat resistor chips, and cylindrical leadless resistors..... | 8533.21.0045 | 8533.21.0030 8533.21.0040 |
| 3344150216, 220 | Resistors, fixed, with a power capacity of 20 watts or less, surface mounted (SMD), having more than two terminals: resistor, resistor-capacitor networks..... | 8533.21.0025 | 8533.21.0010 8533.21.0020 |
| 3344150224 | Resistors, fixeds, with a power capacity of 20 watts or less, wirewound, having two leads..... | 8533.21.0080 | 8533.21.0080 |
| 3344150228 | Resistors, fixed, with a power capacity of 20 watts or less, other than wirewound, having two leads..... | 8533.21.0090 | 8533.21.0090 |

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Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

| Product code | Product description | Export numbers | Import numbers |
|--|---|--|--|
| 3344150232, 236, 240 | Resistors, fixed, with a power capacity of 20 watts or less, resistor networks, having more than two leads..... | 8533.10.0020 8533.10.0057 8533.21.0075 | 8533.10.0020 8533.10.0057 8533.21.0050 8533.21.0060 8533.21.0070 |
| 3344150468, 464 472 | Resistors, variable, wirewound, including rheostats and potentiometers, for a power handling capacity not exceeding 20 watts..... | 8533.31.0000 | 8533.31.0000 |
| 3344150344, 348, 356, 352, 360, 576, 580 | Resistors, variable, n.e.c. | 8533.40.0080 | 8533.40.8050 8533.40.8060 8533.40.8070 |
| 3344150684 | Resistors, parts..... | 8533.90.0000 | 8533.90.4000 8533.90.8000 |
| 3344191225, 230, 235, 240, 245, 250, 255, 260, 265 | Piezoelectric devices (except crystal blanks)..... | 8541.60.0025 8541.60.0060 8541.60.0080 | 8541.60.0010 8541.60.0020 8541.60.0030 8541.60.0050 8541.60.0060 8541.60.0080 |
| 3344191270, 275 | Piezoelectric devices, crystal blanks..... | 7104.10.0000 | 7104.10.0000 |
| 3344120105, 210, 315, 420, 425, 430, 435, 440 | Printed circuit boards..... | 8534.00.0020 8534.00.0040 8534.00.0050 8534.00.0070 8534.00.0080 8534.00.0085 8534.00.0095 | 8534.00.0020 8534.00.0040 8534.00.0050 8534.00.0070 8534.00.0080 8534.00.0085 8534.00.0095 |
| 3344160040 | Television transformers and reactors (horizontal) output, vertical deflection, focus coils, deflection yokes, etc. | 8529.90.3540 8540.91.2000 | 8529.90.3600 8540.91.2000 |
| 3344160020, 030, 035, 010, 015, 045, 050 | Coils, transformers, reactors, and chokes for electronic applications, n.e.c. | 8504.31.2000 8504.31.4035 8504.31.4065 8504.31.6000 8504.32.0000 8504.33.0020 8504.33.0040 8504.34.0000 | 8504.31.2000 8504.31.4035 8504.31.4065 8504.31.6000 8504.32.0000 8504.33.0020 8504.33.0040 8504.34.0000 |
| 3344171000 | Connectors, coaxial..... | 8536.69.4010 | 8536.69.4010 |
| 3344174000 | Connectors, cylindrical..... | 8536.69.4020 | 8536.69.4020 |
| 3344177000 | Connectors, rack and panel..... | 8536.69.4030 | 8536.69.4030 |

Continued

Table 4. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

| Product code | Product description | Export numbers | Import numbers |
|--|--|--|--|
| 334417A000 | Connectors, printed circuit..... | 8536.69.4040 | 8536.69.4040 |
| 334419D108, 110, 115 | Antenna systems (except structural towers sold separately)..... | 8529.10.2020 | 8529.10.2020 |
| 3342203051 | Magnetic recording and reproducing heads, including audio, video, digital and instrumentation..... | 8522.90.0010 | 8522.90.5540 8522.90.7540 |
| 3344197025 | Rotary selector switches for electronic circuitry, including lever and jog-levers, miniature and subminiature..... | 8536.50.9020 8536.50.9025 | 8536.50.9020 |
| 3344197035 | Pushbutton switches for electronic circuitry..... | 8536.50.9030 8536.50.9035 | 8536.50.9031 8536.50.9032 8536.50.9033 8536.50.9035 |
| 3344197020 | Slide switches, including rocker for electronic circuitry, both miniature and subminiature..... | 8536.50.9050** | 8536.50.9050** |
| 3344197040 | Snap-action switches for electronic circuitry..... | 8536.50.9040** | 8536.50.7000** 8536.50.9040** |
| 3344197030, 045, 015, 005, 010, 050, 055 | Switches for electronic circuitry, n.e.c. | 8536.50.9045** 8536.50.9055 8536.50.9065 | 8536.50.9055 8536.50.9065 |

**Harmonized System codes include switches of product class 36433. n.e.c. Not elsewhere classified.