

# Electronic Components: Market Research Report

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## Abstracts

This report analyzes the worldwide markets for Electronic Components in US\$ by the following Product Segments: Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network, Chip, and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes, and Other), Resonators, Connectors (PCB, Rectangular I/O, Circular, RF Coaxial, and Other), Relays (Electromechanical, and Solid State), Switches (Toggle, Slide, Rotary, Keyboard, and Other), and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Other). The report provides separate comprehensive analytics for the US, Canada, Japan, Europe, Asia-Pacific, Latin America, and Rest of World. Annual estimates and forecasts are provided for the period 2015 through 2022.

Also, a six-year historic analysis is provided for these markets. Market data and analytics are derived from primary and secondary research.

Company profiles are primarily based on public domain information including company URLs.

The report profiles 684 companies including many key and niche players such as -

ABB

Abracon LLC

Acme Electric

Alps Electric Co., Ltd.

Alstom Signaling, Inc.

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AVX Launches 750MHz 0805 High Performance Low Pass ITF SMD Filter

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Vishay Releases Analog Switch Family that Improves Analog Circuit Performance

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KEMET Launches Advanced U2J Class-I Ceramic Dielectric Capacitors

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Abracon Launches -511 LAN Transformers for Long Haul Gigabit Ethernet, Full-Duplex Applications

Abracon Unveils High Performance ASGTX Series of Crystal Oscillators

Abracon Rolls Out ANFCA Series of NFC Antennas

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American Electronic Releases SIS212 Series of PCB Safety Relay

KEMET Launches T591 High Performance Automotive Grade Polymer Tantalum Series

KEMET Introduces Expanded Line of Aximax High Temperature Axial Capacitors

KEMET Launches New High Temperature Ceramic Capacitors

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Murata Rolls Out 1000mF model of EDLC DMF Series

Murata Introduces World's Smallest 008004 Size (0.25x0.125 Mm) Monolithic Ceramic Capacitors

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TDK Expands CGA Series of Automotive-Grade NP0 MLCC Capacitors

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KEMET Signs Definitive Agreement to Acquire NEC TOKIN

Heilind Electronics Adds HARTING's Connectors to its Distribution Portfolio

Briowireless Signs Distribution Agreement with Future Electronics

Murata Acquires France Based 3D silicon Capacitor Technology Pioneer, IPDiA

Mouser Electronics and Power Dynamics Sign Global Distribution Agreement

Daetwyler Holdings Acquires Premier Farnell

J. F. Lehman & Company Acquires API Technologies

Richardson Electronics and Dynawave Cable Sign Global Distribution Agreement

Infineon Technologies and RS Components Sign Global Marketing Partner Agreement

Amphenol Acquires Interconnect Solutions Provider FCI Asia

API Technologies Signs Global Distribution Agreement with RFMW

Mouser Electronics Signs Global Partnership and Distribution Agreement with CUI

Oaktree Capital Managed Affiliates Acquire Pulse Electronics

Hubbell's RACO Division Acquires Assets of Power Products' Division Acme Electric

MegaChips Takes Over SiTime

TTI Acquires HuaTong Electronic

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ABB (Switzerland)

Abracon LLC (USA)

Acme Electric (USA)

Alps Electric Co., Ltd. (Japan)

Alstom Signaling, Inc. (USA)

Amphenol (USA)

API Technologies Corp. (USA)

Datronix Holdings Ltd. (Hong Kong)  
Delta Electronics, Inc. (Taiwan)  
Eaton Corporation Plc (Ireland)  
ELECTRONICON Kondensatoren GmbH (Germany)  
Electronic Relays (I) Pvt. Ltd. (India)  
Fujitsu Component Limited (Japan)  
Hitachi AIC, Inc. (Japan)  
Ibiden Co. Ltd. (Japan)  
KEMET Corporation (USA)  
Kyocera Corporation (Japan)  
Littelfuse, Inc. (USA)  
Microsemi Corporation (USA)  
MITSUMI ELECTRIC CO., LTD. (Japan)  
Molex (USA)  
Murata Manufacturing Company, Ltd. (Japan)  
NEC TOKIN Corporation (Japan)  
Nichicon Corporation (Japan)  
Nippon Mektron, Ltd. (Japan)  
Omron Corporation (Japan)  
Panasonic Corporation (Japan)  
Payton (Israel)  
Samsung Electro-Mechanics (South Korea)  
Schneider Electric SE (France)  
Shenzhen Sunlord Electronics Co., Ltd. (China)  
SHOULDER Electronics Limited (China)  
SiTime Corporation (USA)  
Taiyo Yuden Co., Ltd. (Japan)  
TDK Corporation (Japan)  
TE Connectivity Ltd. (USA)  
Teledyne Technologies Inc. (USA)  
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**Table 80.** World Historic Review for Printed Wiring Boards (PWBs) by Geographic Region - US, Canada, Japan, Europe, Asia-Pacific (excluding Japan), Latin America and Rest of World Markets Independently Analyzed with Annual Sales in US\$ Million for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 81.** World 14-Year Perspective for Printed Wiring Boards (PWBs) by Geographic Region - Percentage Breakdown of Dollar Sales for US, Canada, Japan, Europe, Asia-Pacific (excluding Japan), Latin America and Rest of World Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

**Table 82.** World Recent Past, Current & Future Analysis for Printed Wiring Boards (PWBs) by Product Segment - Single Sided Rigid PWBs, Double Sided Rigid PWBs, Multilayer Rigid PWBs, Flexible PWBs, HDI, and Other PWBs Markets Independently Analyzed with Annual Sales in US\$ Million for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 83.** World Historic Review for Printed Wiring Boards (PWBs) by Product Segment - Single Sided Rigid PWBs, Double Sided Rigid PWBs, Multilayer Rigid PWBs, Flexible PWBs, HDI, and Other PWBs Markets Independently Analyzed with Annual Sales in US\$ Million for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 84.** World 14-Year Perspective for Printed Wiring Boards (PWBs) by Product Segment - Percentage Breakdown of Dollar Sales for Single Sided Rigid PWBs, Double Sided Rigid PWBs, Multilayer Rigid PWBs, Flexible PWBs, HDI, and Other PWBs Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

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Specialty Applications to Drive Demand for Passive Components

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**Table 85.** US Isolation Transformers Market (2016): Percentage Breakdown of Revenues by End-Use Application (includes corresponding Graph/Chart)

Smaller Firms Remain Competitive in the US Ceramic Capacitors Market

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**Table 87.** US Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 88.** US Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 89.** US 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators,

Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

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**Table 91.** Canadian Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently

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**Table 92.** Canadian 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

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#### A. Market Analysis

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Slow Demand from China Affects Electronics Components Market

Japan – A Major Exporter of Aluminum Electrolyte Capacitors

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**Table 93.** Japanese Connectors Market (2016): Percentage Breakdown of Revenues by Leading Players (includes corresponding Graph/Chart)

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**Table 94.** Japanese Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed,

Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 95.** Japanese Historic Review for Electronic Components by Product Segment - Resistors (Semi- Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 96.** Japanese 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

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### A. Market Analysis

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**Table 97.** European Connectors Market (2016): Percentage Breakdown of Revenues by Leading Players (includes corresponding Graph/Chart)

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**Table 98.** European Recent Past, Current & Future Analysis for Electronic Components by Geographic Region - France, Germany, Italy, UK, Spain, Russia, and Rest of Europe Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 99.** European Historic Review for Electronic Components by Geographic Region - France, Germany, Italy, UK, Spain, Russia, and Rest of Europe Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 100.** European 14-Year Perspective for Electronic Components by Geographic Region - Percentage Breakdown of Dollar Sales for France, Germany, Italy, UK, Spain, Russia, and Rest of Europe Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

**Table 101.** European Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators,



Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 102.** European Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 103.** European 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## **4A. FRANCE**

### A. Market Analysis Outlook

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**Table 104.** French Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 105.** French Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 106.** French 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High

Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 4B. GERMANY

### A. Market Analysis

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### B. Market Analytics

**Table 107.** German Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 108.** German Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays

(Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 109.** German 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 4C. ITALY

### A. Market Analysis

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### B. Market Analytics

**Table 110.** Italian Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years

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**Table 111.** Italian Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 112.** Italian 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

#### **4D. THE UNITED KINGDOM**

##### A. Market Analysis

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###### UK Ceramic Capacitors Market - Factors Influencing Demand Projections

###### Strategic Corporate Developments

##### B. Market Analytics

**Table 113.** UK Recent Past, Current & Future Analysis for Electronic Components by

Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 114.** UK Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 115.** UK 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 4E. SPAIN

### A. Market Analysis

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### B. Market Analytics

**Table 116.** Spanish Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 117.** Spanish Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 118.** Spanish 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed),

Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

#### **4F. RUSSIA**

##### A. Market Analysis

##### Outlook

##### B. Market Analytics

**Table 119.** Russian Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 120.** Russian Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays



(Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 121.** Russian 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 4G. REST OF EUROPE

### A. Market Analysis

Outlook

Key Players

### B. Market Analytics

**Table 122.** Rest of Europe Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and

Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 123.** Rest of Europe Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 124.** Rest of Europe 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 5. ASIA-PACIFIC

### A. Market Analysis

#### Outlook

Asia-Pacific Dominates Global Market for Passive Components

R&D Investment by Asian Companies Shoots Up

Capacitors Market – A Brief

Connectors Industry - Market Leaders

**Table 125.** Asia-Pacific Connectors Market (2016): Percentage Breakdown of Revenues by Leading Players (includes corresponding Graph/Chart)

## B. Market Analytics

**Table 126.** Asia-Pacific Recent Past, Current & Future Analysis for Electronic Components by Geographic Region - China, South Korea, Taiwan and Rest of Asia-Pacific Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 127.** Asia-Pacific Historic Review for Electronic Components by Geographic Region - China, South Korea, Taiwan and Rest of Asia-Pacific Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 128.** Asia-Pacific 14-Year Perspective for Electronic Components by Geographic Region - Percentage Breakdown of Dollar Sales for China, South Korea, Taiwan and Rest of Asia-Pacific Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

**Table 129.** Asia-Pacific Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 130.** Asia-Pacific Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed,

Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 131.** Asia-Pacific 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 5A. CHINA

### A. Market Analysis

Outlook

Raw Material Scene

Exports

Chinese Capacitors Market – A Review

Chinese Capacitors - Diversity in Quality

Demand for Semiconductors Fuels Chinese Ceramic Capacitors Industry

A Glimpse at the Chinese AEC Market

Chinese Film Capacitor Industry Set for a Robust Growth

Heavy Competition Propels Product Line Expansion

Product Enhancements Drive Growth

China – Hotspot for Capacitor Production  
Jiangsu- a Key Chinese Province in Capacitor Production  
Transformers Market  
A Review  
Transformer Production Expected to Witness Robust Growth  
China Fulfilling Global Demand for Fly-back Transformer  
PCB Industry in China  
Challenges Encountered by the Chinese PCB Market  
Connectors Market  
Challenges Confronting Connectors Industry  
Automotive Connector Market Gaining Momentum  
Select Players  
B. Market Analytics

**Table 133.** Chinese Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 134.** Chinese Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double

Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 135.** Chinese 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 5B. SOUTH KOREA

### A. Market Analysis

Outlook

Overview

Domestic Transformers Market – A Snapshot

Key Player

### B. Market Analytics

**Table 136.** South Korean Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and

Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 137.** South Korean Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 138.** South Korean 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## **5C. TAIWAN**

### A. Market Analysis

#### Outlook

#### Capacitors Market – A Review

#### OC-CONs Receive Producers Attention

#### High-frequency Transformers Witness Robust Demand

#### Select Players

## B. Market Analytics

**Table 139.** Taiwanese Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 140.** Taiwanese Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 141.** Taiwanese 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial



Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 5D. REST OF ASIA-PACIFIC

### A. Market Analysis

#### Outlook

Hong Kong: Capacitor Manufacturers Emphasize on High Capacitance Devices

India - Electronic Products Industry Overview

Outlook for Electronic Components Market

The Electronic Components Manufacturing Ecosystem

Heavy Reliance on Imports

Select Trends Impacting the Market

Product Launch

Strategic Corporate Developments

Select Players

### B. Market Analytics

**Table 142.** Rest of Asia-Pacific Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 143.** Rest of Asia-Pacific Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network

Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 144.** Rest of Asia-Pacific 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 6. LATIN AMERICA

### A. Market Analysis

#### Outlook

### B. Market Analytics

**Table 145.** Latin American Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators,

Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 146.** Latin American Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 147.** Latin American 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

## 7. REST OF WORLD

### A. Market Analysis Outlook

## Key Player

### B. Market Analytics

**Table 148.** Rest of World Recent Past, Current & Future Analysis for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2015 through 2022 (includes corresponding Graph/Chart)

**Table 149.** Rest of World Historic Review for Electronic Components by Product Segment - Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others), Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets Independently Analyzed with Annual Sales Figures in US\$ Thousand for Years 2009 through 2014 (includes corresponding Graph/Chart)

**Table 150.** Rest of World 14-Year Perspective for Electronic Components by Product Segment - Percentage Breakdown of Dollar Sales for Resistors (Semi-Fixed Variable, Carbon Variable, Other Variable, Carbon Film Fixed, Metal Film Fixed, Metal Oxide Film Fixed, Wire Wound Fixed, Network Resistors, Chip Resistors and Other Fixed), Capacitors (Variable, Aluminum Electrolytic Fixed, Tantalum Electrolytic Fixed, Ceramic Fixed, Film, and Other Fixed), Transformers (RFTS & IFTS, Audio Frequency, Power, High Frequency Power, High Voltage, Flyback, Deflection Yokes and Others),

Resonators, Connectors (PCB Connectors, Rectangular I/O Connectors, RF Coaxial Connectors, and Other Connectors), Relays (Electromechanical Relays and Solid State Relays), Switches (Toggle, Slide, Rotary, Keyboard and Other Switches) and Printed Wiring Boards (Single Sided Rigid, Double Sided Rigid, Multilayer Rigid, Flexible, HDI, and Others) Markets for Years 2009, 2017 & 2022 (includes corresponding Graph/Chart)

#### **IV. COMPETITIVE LANDSCAPE**

Total Companies Profiled: 684 (including Divisions/Subsidiaries - 737)

The United States (167)

Canada (10)

Japan (50)

Europe (239)

France (10)

Germany (78)

The United Kingdom (66)

Italy (26)

Spain (3)

Rest of Europe (56)

Asia-Pacific (Excluding Japan) (267)

Middle East (1)

Africa (3)

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