

Pin Fin Heat Sink for IGBT Market by Material Type (Copper and Aluminum): Global Opportunity Analysis and Industry Forecast, 2019–2025

<https://marketpublishers.com/r/P37F4485143EN.html>

Date: May 2019

Pages: 191

Price: US\$ 4,296.00 (Single User License)

ID: P37F4485143EN

Abstracts

Pin Fin heat sink is a passive heat exchanger that cools a device by dissipating heat into the surrounding medium. Heat sinks are used with high-power semiconductor devices. Pin fin heat sinks contain an array of vertically oriented round pins made of copper or aluminum that deliver substantially greater performance than standard heat sinks with flat fins. High efficiency of heat dissolving in pin fin module has the characteristics of low-pressure drop. Among different technologies, pin fins have replaced traditional continuous fin arrays such as plate or wavy fins, due to their high volumetric heat transfer rates.

Cold forging is one of the most used manufacturing techniques for pin fin heat sinks. Cold forging is a manufacturing process in which the aluminum or copper heat sink is formed by using localized compressed forces. Fin arrays are designed by forcing raw material into a molding die by a punch. The process confirms that no air bubbles, porosity, or any other impurities are stuck inside the material and thus, produces extremely high-quality products. A cold forged heatsink is a good alternative to casting to form complex shapes with excellent thermal conductivity. Some of the striking benefits of forging include high strength, superior surface finish, structural rigidity, close tolerance capabilities, continuity of shape, and high uniformity of material..

The factors that drive the growth of the global pin fin heat sink for IGBT market include increase in need for effective cooling of the consumer electronics by proper heat dissipation method, followed by increase in demand for huge power supply due to growing population and digitization. Furthermore, rise in demand for pin fin heat sinks owing to multiple advantages such as higher volumetric efficiency and low cost over other types of heat sinks are also expected to fuel the market growth.. In addition,

increase in use of IGBT modules in the automotive field for HEVs and hybrid pin fin heat sink are expected to provide lucrative opportunities for the pin fin heat sink for IGBT market during the forecast period. However, low capacity utilization of pin fin heat sink manufacturers is affecting the growth of this market.

The global pin fin heat sink for IGBT market is segmented based on material type and region. Based on material type, it is bifurcated into copper and aluminum. By region, it is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

The global pin fin heat sink for IGBT market is dominated by players such as Apex Microtechnology, Aavid Thermalloy LLC, Honeywell International Inc., Comair Rotron, CUI Inc., Advanced Thermal Solutions, Kunshan Gooee Metal Products Co. Ltd., Allbrass Industrial, The Brass Forging Company, and others.

KEY BENEFITS FOR STAKEHOLDERS

This study comprises analytical depiction of the global pin fin heat sink for IGBT market along with the current trends and future estimations to depict the imminent investment pockets.

The overall market potential is determined to understand the profitable trends to gain a stronger coverage in the market.

The report presents information related to key drivers, restraints, and opportunities with a detailed impact analysis.

The current market is quantitatively analyzed from 2018 to 2025 to highlight the financial competency of the global pin fin heat sink for IGBT market.

Porter's five forces analysis illustrates the potency of the buyers and suppliers.

KEY MARKET SEGMENTS

BY MATERIAL TYPE

Copper

Aluminum

BY REGION

North America

U.S.

Canada

Mexico

Europe

UK

Germany

France

Italy

Rest of Europe

Asia-Pacific

China

Japan

India

Rest of Asia-Pacific

LAMEA

Latin America

Middle East

Africa

KEY MARKET PLAYERS PROFILED

Advanced Micro Devices (AMD)

Apex Microtechnology

Aavid Thermalloy, LLC

Advanced Thermal Solutions, Inc.

Allbrass Industrial The Brass

CUI Inc

Comair Rotron

Honeywell International Inc

Kunshan Gooze Metal Products Co., Ltd.

Contents

CHAPTER 1: INTRODUCTION

- 1.1. REPORT DESCRIPTION
- 1.2. KEY BENEFITS FOR STAKEHOLDERS
- 1.3. RESEARCH METHODOLOGY
 - 1.3.1. Secondary research
 - 1.3.2. Primary research
 - 1.3.3. Analyst tools & models

CHAPTER 2: EXECUTIVE SUMMARY

- 2.1. CXO PERSPECTIVE

CHAPTER 3: MARKET OVERVIEW

- 3.1. MARKET DEFINITION AND SCOPE
- 3.2. KEY FINDINGS
 - 3.2.1. Top investment pockets
 - 3.2.2. Top winning strategies of customers of pin-fin heat sink
- 3.3. PORTER'S FIVE FORCES ANALYSIS
- 3.4. KEY PLAYER POSITIONING
- 3.5. MARKET DYNAMICS
 - 3.5.1. Drivers
 - 3.5.1.1. Rise in need for effective cooling of the consumer electronics by proper heat dissipation method
 - 3.5.1.2. Greater demand for pin fin heat sinks owing to its multiple advantages over other types of heat sinks
 - 3.5.1.3. Rise in demand for power supply devices and usage of IGBTs
 - 3.5.2. Restraints
 - 3.5.2.1. Low capacity utilization of pin fin heat sink manufacturers
 - 3.5.3. Opportunities
 - 3.5.3.1. Emerging trend of increasing usage of IGBT modules in the automotive sector for HEVs
 - 3.5.3.2. Use of hybrid pin fin heat sink
- 3.6. TECHNOLOGY LANDSCAPE
 - 3.6.1. Pin Fin Technology
 - 3.6.2. Various Pin Fin Manufacturing Techniques

- 3.6.2.1. Hot and Cold Forging
- 3.6.2.2. Metal Injection Molding
- 3.6.2.3. Additive Manufacturing
- 3.7. COMPETITIVE LANDSCAPE

CHAPTER 4: PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE

4.1. OVERVIEW

4.2. COPPER

- 4.2.1. Key market trends, growth factors and opportunities
- 4.2.2. Market size and forecast, by region
- 4.2.3. Market analysis, by country

4.3. ALUMINIUM

- 4.3.1. Key market trends, growth factors and opportunities
- 4.3.2. Market size and forecast, by region
- 4.3.3. Market analysis, by country

CHAPTER 5: PIN FIN HEAT SINK FOR IGBT MARKET, BY REGION

5.1. OVERVIEW

5.2. NORTH AMERICA

- 5.2.1. Key market trends and opportunities
- 5.2.2. Market size and forecast, by material type
- 5.2.3. Market size and forecast, by country
- 5.2.4. U.S.
 - 5.2.4.1. Market size and forecast, by material type
- 5.2.5. Canada
 - 5.2.5.1. Market size and forecast, by material type
- 5.2.6. Mexico
 - 5.2.6.1. Market size and forecast, by material type

5.3. EUROPE

- 5.3.1. Key market trends and opportunities
- 5.3.2. Market size and forecast, by material type
- 5.3.3. Market size and forecast, by country
- 5.3.4. UK
 - 5.3.4.1. Market size and forecast, by material type
- 5.3.5. Germany
 - 5.3.5.1. Market size and forecast, by material type
- 5.3.6. France

- 5.3.6.1. Market size and forecast, by material type
- 5.3.7. Italy
 - 5.3.7.1. Market size and forecast, by material type
- 5.3.8. Rest of Europe
 - 5.3.8.1. Market size and forecast, by material type
- 5.4. ASIA-PACIFIC
 - 5.4.1. Key market trends and opportunities
 - 5.4.2. Market size and forecast, by material type
 - 5.4.3. Market size and forecast, by country
 - 5.4.4. China
 - 5.4.4.1. Market size and forecast, by material type
 - 5.4.5. India
 - 5.4.5.1. Market size and forecast, by material type
 - 5.4.6. Japan
 - 5.4.6.1. Market size and forecast, by material type
 - 5.4.7. Rest of Asia-Pacific
 - 5.4.7.1. Market size and forecast, by material type
- 5.5. LAMEA
 - 5.5.1. Key market trends and opportunities
 - 5.5.2. Market size and forecast, by material type
 - 5.5.3. Market size and forecast, by country
 - 5.5.4. Latin America
 - 5.5.4.1. Market size and forecast, by material type
 - 5.5.5. Middle East
 - 5.5.5.1. Market size and forecast, by material type
 - 5.5.6. Africa
 - 5.5.6.1. Market size and forecast, by material type

CHAPTER 6: SUPPLIER/MANUFACTURER: COMPANY PROFILES

- 6.1. APEX MICROTECHNOLOGY (HEICO CORPORATION)
 - 6.1.1. Company overview
 - 6.1.2. Company snapshot
 - 6.1.3. Operating business segments
 - 6.1.4. Product portfolio
 - 6.1.5. Business performance
- 6.2. AAVID THERMALLOY, LLC (BOYD CORPORATION)
 - 6.2.1. Company overview
 - 6.2.2. Company snapshot

- 6.2.3. Product portfolio
- 6.2.4. Key strategic moves and developments
- 6.3. ADVANCED THERMAL SOLUTIONS, INC.
 - 6.3.1. Company overview
 - 6.3.2. Company snapshot
 - 6.3.3. Product portfolio
- 6.4. ALLBRASS INDUSTRIAL
 - 6.4.1. Company overview
 - 6.4.2. Company snapshot
 - 6.4.3. Product portfolio
- 6.5. CUI INC.
 - 6.5.1. Company overview
 - 6.5.2. Company snapshot
 - 6.5.3. Operating business segments
 - 6.5.4. Product portfolio
 - 6.5.5. Key strategic moves and developments
- 6.6. COMAIR ROTRON
 - 6.6.1. Company overview
 - 6.6.2. Company snapshot
 - 6.6.3. Product portfolio
- 6.7. HONEYWELL INTERNATIONAL INC.
 - 6.7.1. Company overview
 - 6.7.2. Company snapshot
 - 6.7.3. Operating business segments
 - 6.7.4. Product portfolio
 - 6.7.5. Business performance
- 6.8. KUNSHAN GOOGE METAL PRODUCTS CO., LTD.
 - 6.8.1. Company overview
 - 6.8.2. Company snapshot
 - 6.8.3. Product portfolio

CHAPTER 7: CUSTOMERS - COMPANY PROFILES

- 7.1. ABB LTD.
 - 7.1.1. Company overview
 - 7.1.2. Key Executives
 - 7.1.3. Company snapshot
 - 7.1.4. Operating business segments
 - 7.1.5. R&D Expenditure

- 7.1.6. Business performance
- 7.1.7. Key strategic moves and developments
- 7.2. FUJI ELECTRIC CO., LTD.
 - 7.2.1. Company overview
 - 7.2.2. Key Executives
 - 7.2.3. Company snapshot
 - 7.2.4. Operating business segments
 - 7.2.5. R&D Expenditure
 - 7.2.6. Business performance
 - 7.2.7. Key strategic moves and developments
- 7.3. HITACHI, LTD.
 - 7.3.1. Company overview
 - 7.3.2. Key Executives
 - 7.3.3. Company snapshot
 - 7.3.4. Operating business segments
 - 7.3.5. Business performance
 - 7.3.6. Key strategic moves and developments
- 7.4. INFINEON TECHNOLOGIES AG
 - 7.4.1. Company overview
 - 7.4.2. Key Executives
 - 7.4.3. Company snapshot
 - 7.4.4. Operating business segments
 - 7.4.5. R&D Expenditure
 - 7.4.6. Business performance
 - 7.4.7. Key strategic moves and developments
- 7.5. MITSUBISHI ELECTRIC CORPORATION
 - 7.5.1. Company overview
 - 7.5.2. Key Executives
 - 7.5.3. Company snapshot
 - 7.5.4. Operating business segments
 - 7.5.5. R&D Expenditure
 - 7.5.6. Business performance
 - 7.5.7. Key strategic moves and developments
- 7.6. ROBERT BOSCH GMBH
 - 7.6.1. Company overview
 - 7.6.2. Key Executives
 - 7.6.3. Company snapshot
 - 7.6.4. Operating business segments
 - 7.6.5. R&D Expenditure

7.6.6. Business performance

7.6.7. Key strategic moves and developments

7.7. SEMIKRON INTERNATIONAL GMBH

7.7.1. Company overview

7.7.2. Key Executives

7.7.3. Company snapshot

7.7.4. Key strategic moves and developments

7.8. SIEMENS AG

7.8.1. Company overview

7.8.2. Key Executives

7.8.3. Company snapshot

7.8.4. Operating business segments

7.8.5. R&D Expenditure

7.8.6. Business performance

7.8.7. Key strategic moves and developments

7.9. STARPOWER EUROPE AG

7.9.1. Company overview

7.9.2. Company snapshot

7.10. UNITED AUTOMOTIVE ELECTRONICS CO., LTD. (UAES)

7.10.1. Company overview

7.10.2. Company snapshot

7.10.3. Key strategic moves and developments

List Of Tables

LIST OF TABLES

TABLE 01. COMPETITIVE LANDSCAPE

TABLE 02. GLOBAL PIN FIN HEAT SINK FOR IGBT MARKET REVENUE, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 03. PIN FIN HEAT SINK FOR IGBT MARKET REVENUE, FOR COPPER, BY REGION, 2018–2025 (\$MILLION)

TABLE 04. PIN FIN HEAT SINK FOR IGBT MARKET REVENUE, FOR ALUMINIUM, BY REGION, 2018–2025 (\$MILLION)

TABLE 05. PIN FIN HEAT SINK FOR IGBT MARKET REVENUE, BY REGION, 2018–2025 (\$MILLION)

TABLE 06. NORTH AMERICA PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 07. NORTH AMERICA PIN FIN HEAT SINK FOR IGBT MARKET, BY COUNTRY, 2018–2025 (\$MILLION)

TABLE 08. U.S. PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 09. CANADA PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 10. MEXICO PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 11. EUROPE PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 12. EUROPE PIN FIN HEAT SINK FOR IGBT MARKET, BY COUNTRY, 2018–2025 (\$MILLION)

TABLE 13. UK PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 14. GERMANY PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 15. FRANCE PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 16. ITALY PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 17. REST OF EUROPE PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 18. ASIA-PACIFIC PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 19. ASIA-PACIFIC PIN FIN HEAT SINK FOR IGBT MARKET, BY COUNTRY, 2018–2025 (\$MILLION)

TABLE 20. CHINA PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 21. INDIA PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 22. JAPAN PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 23. REST OF ASIA-PACIFIC PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 24. LAMEA PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 25. LAMEA PIN FIN HEAT SINK FOR IGBT MARKET, BY COUNTRY, 2018–2025 (\$MILLION)

TABLE 26. LATIN AMERICA PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 27. MIDDLE EAST PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 28. AFRICA PIN FIN HEAT SINK FOR IGBT MARKET, BY MATERIAL TYPE, 2018–2025 (\$MILLION)

TABLE 29. APEX MICROTECHNOLOGY: COMPANY SNAPSHOT

TABLE 30. HEICO CORPORATION: OPERATING SEGMENTS

TABLE 31. APEX MICROTECHNOLOGY: PRODUCT PORTFOLIO

TABLE 32. AAVID THERMALLOY, LLC: COMPANY SNAPSHOT

TABLE 33. AAVID THERMALLOY, LLC: PRODUCT PORTFOLIO

TABLE 34. AAVID THERMALLOY, LLC: KEY STRATEGIC MOVES AND DEVELOPMENTS

TABLE 35. ADVANCED THERMAL SOLUTIONS, INC.: COMPANY SNAPSHOT

TABLE 36. ADVANCED THERMAL SOLUTIONS, INC.: PRODUCT PORTFOLIO

TABLE 37. ALLBRASS INDUSTRIAL: COMPANY SNAPSHOT

TABLE 38. ALLBRASS INDUSTRIAL: PRODUCT PORTFOLIO

TABLE 39. CUI INC.: COMPANY SNAPSHOT

TABLE 40. CUI INC.: OPERATING SEGMENTS

TABLE 41. CUI INC.: PRODUCT PORTFOLIO

TABLE 42. CUI INC.: KEY STRATEGIC MOVES AND DEVELOPMENTS

TABLE 43. COMAIR ROTRON: COMPANY SNAPSHOT

TABLE 44. COMAIR ROTRON: PRODUCT PORTFOLIO

TABLE 45. HONEYWELL INTERNATIONAL INC.: COMPANY SNAPSHOT

TABLE 46. HONEYWELL INTERNATIONAL INC.: OPERATING SEGMENTS

| |
|--|
| TABLE 47. HONEYWELL INTERNATIONAL INC.: PRODUCT PORTFOLIO |
| TABLE 48. KUNSHAN GOOGE METAL PRODUCTS CO., LTD.: COMPANY SNAPSHOT |
| TABLE 49. KUNSHAN GOOGE METAL PRODUCTS CO., LTD.: PRODUCT PORTFOLIO |
| TABLE 50. ABB LTD.:KEY EXECUTIVES |
| TABLE 51. ABB LTD.: COMPANY SNAPSHOT |
| TABLE 52. ABB LTD.: OPERATING SEGMENTS |
| TABLE 53. FUJI ELECTRIC CO., LTD:KEY EXECUTIVES |
| TABLE 54. FUJI ELECTRIC CO., LTD.: COMPANY SNAPSHOT |
| TABLE 55. FUJI ELECTRIC CO., LTD.: OPERATING SEGMENTS |
| TABLE 56. HITACHI, LTD.: COMPANY SNAPSHOT |
| TABLE 57. HITACHI, LTD.: OPERATING SEGMENTS |
| TABLE 58. INFINEON TECHNOLOGIES AG: KEY EXECUTIVES |
| TABLE 59. INFINEON TECHNOLOGIES AG: COMPANY SNAPSHOT |
| TABLE 60. INFINEON TECHNOLOGIES AG: OPERATING SEGMENTS |
| TABLE 61. MITSUBISHI ELECTRIC CORPORATION.: COMPANY SNAPSHOT |
| TABLE 62. MITSUBISHI ELECTRIC CORPORATION: OPERATING SEGMENTS |
| TABLE 63. KEY EXECUTIVES |
| TABLE 64. ROBERT BOSCH GMBH: COMPANY SNAPSHOT |
| TABLE 65. ROBERT BOSCH GMBH: OPERATING SEGMENTS |
| TABLE 66. SEMIKRON INTERNATIONAL GMBH: COMPANY SNAPSHOT |
| TABLE 67. SIEMENS AG:KEY EXECUTIVES |
| TABLE 68. SIEMENS AG: COMPANY SNAPSHOT |
| TABLE 69. SIEMENS AG: OPERATING SEGMENTS |
| TABLE 70. STARPOWER EUROPE AG: COMPANY SNAPSHOT |
| TABLE 71. UNITED AUTOMOTIVE ELECTRONICS CO., LTD. (UAES): COMPANY SNAPSHOT |

List Of Figures

LIST OF FIGURES

- FIGURE 01. GLOBAL PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025
- FIGURE 02. PIN FIN HEAT SINK FOR IGBT MARKET, BY REGION, 2018–2025
- FIGURE 03. GLOBAL PIN FIN HEAT SINK FOR IGBT MARKET: KEY PLAYERS
- FIGURE 04. GLOBAL PIN FIN HEAT SINK FOR IGBT MARKET SEGMENTATION
- FIGURE 05. TOP INVESTMENT POCKETS
- FIGURE 06. TOP WINNING STRATEGIES OF CUSTOMERS OF PIN-FIN HEAT SINK, BY YEAR, 2015–2018*
- FIGURE 07. TOP WINNING STRATEGIES OF CUSTOMERS OF PIN-FIN HEAT SINK, BY DEVELOPMENT, 2015–2018* (%)
- FIGURE 08. TOP WINNING STRATEGIES OF CUSTOMERS OF PIN-FIN HEAT SINK, BY COMPANY, 2015–2018*
- FIGURE 09. MODERATE BARGAINING POWER OF SUPPLIERS
- FIGURE 10. LOW BARGAINING POWER OF BUYERS
- FIGURE 11. MODERATE THREAT OF SUBSTITUTES
- FIGURE 12. MODERATE-TO-HIGH THREAT OF NEW ENTRANTS
- FIGURE 13. LOW COMPETITIVE RIVALRY
- FIGURE 14. KEY PLAYER POSITIONING, 2018
- FIGURE 15. DRIVERS, RESTRAINTS, AND OPPORTUNITIES
- FIGURE 16. COMPARATIVE SHARE ANALYSIS OF PIN FIN HEAT SINK FOR IGBT MARKET, FOR COPPER, BY COUNTRY, 2018 & 2025 (%)
- FIGURE 17. COMPARATIVE SHARE ANALYSIS OF PIN FIN HEAT SINK FOR IGBT MARKET, FOR ALUMINIUM, BY COUNTRY, 2018 & 2025 (%)
- FIGURE 18. U.S. PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)
- FIGURE 19. CANADA PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)
- FIGURE 20. MEXICO PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)
- FIGURE 21. UK PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)
- FIGURE 22. GERMANY PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)
- FIGURE 23. FRANCE PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)
- FIGURE 24. ITALY PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)
- FIGURE 25. REST OF EUROPE PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)

FIGURE 26. CHINA PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)

FIGURE 27. INDIA PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)

FIGURE 28. JAPAN PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025 (\$MILLION)

FIGURE 29. REST OF ASIA-PACIFIC PIN FIN HEAT SINK FOR IGBT MARKET,
2018–2025 (\$MILLION)

FIGURE 30. LATIN AMERICA PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025
(\$MILLION)

FIGURE 31. MIDDLE EAST PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025
(\$MILLION)

FIGURE 32. AFRICA PIN FIN HEAT SINK FOR IGBT MARKET, 2018–2025
(\$MILLION)

FIGURE 33. APEX MICROTECHNOLOGY: REVENUE, 2016–2018 (\$MILLION)

FIGURE 34. APEX MICROTECHNOLOGY: REVENUE SHARE BY SEGMENT, 2018
(%)

FIGURE 35. APEX MICROTECHNOLOGY: REVENUE SHARE BY GEOGRAPHY,
2018 (%)

FIGURE 36. HONEYWELL INTERNATIONAL INC.: REVENUE, 2016–2018 (\$MILLION)

FIGURE 37. HONEYWELL INTERNATIONAL INC.: REVENUE SHARE BY SEGMENT,
2018 (%)

FIGURE 38. HONEYWELL INTERNATIONAL INC.: REVENUE SHARE BY REGION,
2018 (%)

FIGURE 39. R&D EXPENDITURE, 2016–2018 (\$MILLION)

FIGURE 40. ABB LTD.: REVENUE, 2016–2018 (\$MILLION)

FIGURE 41. ABB LTD.: REVENUE SHARE BY SEGMENT, 2018 (%)

FIGURE 42. ABB LTD.: REVENUE SHARE BY REGION, 2018 (%)

FIGURE 43. R&D EXPENDITURE, 2016–2018 (\$MILLION)

FIGURE 44. FUJI ELECTRIC CO., LTD.: REVENUE, 2016–2018 (\$MILLION)

FIGURE 45. FUJI ELECTRIC CO., LTD.: REVENUE SHARE BY SEGMENT, 2018 (%)

FIGURE 46. FUJI ELECTRIC CO., LTD.: REVENUE SHARE BY REGION, 2018 (%)

FIGURE 47. HITACHI, LTD.: KEY EXECUTIVES

FIGURE 48. HITACHI, LTD.: REVENUE, 2015–2017 (\$MILLION)

FIGURE 49. HITACHI, LTD.: REVENUE SHARE BY SEGMENT, 2018 (%)

FIGURE 50. HITACHI, LTD.: REVENUE SHARE BY REGION, 2018 (%)

FIGURE 51. R&D EXPENDITURE, 2016–2018 (\$MILLION)

FIGURE 52. INFINEON TECHNOLOGIES AG: REVENUE, 2016–2018 (\$MILLION)

FIGURE 53. INFINEON TECHNOLOGIES AG: REVENUE SHARE BY SEGMENT,
2018 (%)

FIGURE 54. INFINEON TECHNOLOGIES AG: REVENUE SHARE BY REGION, 2018
(%)

FIGURE 55. MITSUBISHI ELECTRIC CORPORATION.: KEY EXECUTIVES

FIGURE 56. R&D EXPENDITURE, 2016–2018 (\$MILLION)

FIGURE 57. MITSUBISHI ELECTRIC CORPORATION: REVENUE, 2016-2018 (\$MILLION)

FIGURE 58. MITSUBISHI ELECTRIC CORPORATION: REVENUE SHARE BY SEGMENT, 2017 (%)

FIGURE 59. MITSUBISHI ELECTRIC CORPORATION: REVENUE SHARE BY REGION, 2017 (%)

FIGURE 60. R&D EXPENDITURE, 2016–2018 (\$MILLION)

FIGURE 61. ROBERT BOSCH GMBH: REVENUE, 2016–2018 (\$MILLION)

FIGURE 62. ROBERT BOSCH GMBH: REVENUE SHARE BY SEGMENT, 2018 (%)

FIGURE 63. ROBERT BOSCH GMBH: REVENUE SHARE BY REGION, 2018 (%)

FIGURE 64. SEMIKRON INTERNATIONAL GMBH:KEY EXECUTIVES

FIGURE 65. R&D EXPENDITURE, 2016–2017 (\$MILLION)

FIGURE 66. SIEMENS AG: REVENUE, 2016–2018 (\$MILLION)

FIGURE 67. SIEMENS AG: REVENUE SHARE BY SEGMENT, 2018 (%)

I would like to order

Product name: Pin Fin Heat Sink for IGBT Market by Material Type (Copper and Aluminum): Global Opportunity Analysis and Industry Forecast, 2019–2025

Product link: <https://marketpublishers.com/r/P37F4485143EN.html>

Price: US\$ 4,296.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/P37F4485143EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970

