PRODUCTS AND SOLUTIONS

Industry Standard bricks

1/16-bricks

1/8-bricks

1/4-bricks

1/2-bricks

Surface mount

Industry Point of Load

POLA Point of Load

Digital Point of Load

Open-Frame Macrodens

Intermediate Bus

Wide and Narrow Input DC/DC

Quarter to Full Brick DC/DC

Power Amplifier

MicroTCA

Custom solutions

MicroTCA power module

Product on demand
> ISOLATED DC/DC CONVERTERS
INDUSTRY STANDARD

PKV SERIES 3 W
DIL 24 STANDARD
A complete program covers even the smallest needs
› High efficiency typ, 74-80%
› Input voltage range 9-36 V and 18-72 V
› Output voltage 3.3 to 12 V
› Size (LxWxH): 31.8 x 20.3 x 10.7 mm
  (1.25 x 0.80 x 0.42 Inch)

PKR SERIES 26 W
MACRODENS STANDARD
Evolution based on 30,000,000 pieces of SMD experience
› High efficiency, typ 86% at 3.3 V full load
› Input voltage range 18-75 V
› Output voltage 1.8 to 12 V
› Size (LxWxH): 47.8 x 28.1 x 8.0 mm
  (1.88 x 1.11 x 0.32 Inch)

PKU-E SERIES 35 W
SIXTEENTH BRICK
Wide input, low cost DC/DC converter for telecom and industrial applications
› High efficiency, typ. 98.5% at 3.3 V half load
› Input voltage range 18-72 V
› Output voltage 3.3 V
› Size (LxWxH): 33 x 22.9 x 7.5 mm
  (1.3 x 0.9 x 0.3 Inch)
INDUSTRY STANDARD

PKM-E SERIES 50 W
QUARTER BRICK
Standardized design in industry standard footprint with industry leading performance
› High efficiency, typ. 90% at 3.3 V
› Input voltage range 18-36 V and 36-75 V
› Output voltage 1.5 to 15 V
› Size (LxWxH): 57.9 x 36.8 x 8.5 mm (2.28 x 1.45 x 0.33 Inch)

PKU SERIES 50 W
SIXTEENTH BRICK
Industry standard Sixteenth-brick offering a 43% size reduction compared to standard eighth brick
› High efficiency typ. 90%
› Input voltage range 36-75 V
› Output voltage 1.2 to 12 V
› Size (LxWxH): 33 x 22.9 x 9.9 mm (1.3 x 0.9 x 0.39 Inch)

PKD-E SERIES 50 W
HALF BRICK
Cost efficient design combined with low building height
› High efficiency, typ. 90% at 3.3 V out
› Input voltage range 36-75 V
› Output voltage 1.2 to 3.3 V
› Size: (LxWxH): 50.4 x 46.3 x 7.7 mm (1.98 x 1.82 x 0.303 Inch)
INDUSTRY STANDARD

PKB SERIES 90 W
EIGHTH BRICK
Standard footprint and small size in combination provides for new board space optimization
› High efficiency typ. 92% at 3.3 V
› Input voltage range 36-75 V
› Output voltage 1.2 to 15 V
› Size (LxWxH): 58.42 x 22.76 x 8.10 mm (2.300 x 0.896 x 0.319 Inch)

PKB-A SERIES 99 W
EIGHTH BRICK
Cost efficient industry standard footprint for power optimization
› High efficiency typ. 92.4% at 3.3 V
› Input voltage range 38-72 V
› Output voltage 3.3 V
› Size (LxWxH): 58.4 x 22.7 x 8.50 mm (2.30 x 0.894 x 0.339 Inch)

PKJ-E SERIES 100 W
HALF BRICK
Standardized design in industry standard footprint with industry leading performance
› High efficiency, typ. 93% at 3.3 V
› Input voltage range 36-75 V
› Output voltage 1.2 to 15 V
› Size: (LxWxH): 61.0 x 57.9 x 8.5 mm (2.4 x 2.28 x 0.33 Inch)
INDUSTRY STANDARD

PKM SERIES 126 W
QUARTER BRICK
Small and efficient - standard quarter-brick footprint
- High efficiency, typ. 91% at 3.3 V full load
- Input voltage range 36-75 V
- Output voltage 1.5 to 12 V
- Size (LxWxH): 57.9 x 36.8 x 12.7 mm (2.28 x 1.45 x 0.5 Inch)

PKM-D SERIES 130 W
QUARTER BRICK
Cost effective yet high performance solution
- High efficiency, typ. 91% at 3.3 V
- Input voltage range 18-75 V
- Output voltage 1.2 to 12 V
- Size (LxWxH): 57.9 x 36.8 x 9.7 mm (2.28 x 1.45 x 0.38 Inch)

PKB-C SERIES 132 W
EIGHTH BRICK
Small size in combination with high performance provides for new board space optimization
- High efficiency, typ. 91% at 3.3 V
- Input voltage range 36-75 V
- Output voltage 3.3 V
- Size: (LxWxH): 58.4 x 22.7 x 8.6 mm (2.3 x 0.89 x 0.33 Inch)
INDUSTRY STANDARD

PKM-C SERIES 204 W
QUARTER BRICK
Double-P, providing reliable power transfer to your board

- High efficiency, typ. 92% at 3.3 V
- Input voltage range 36-75 V
- Output voltage 1.8 to 12 V
- Size (LxWxH): 57.8 x 36.8 x 9.1 mm (2.28 x 1.45 x 0.35 Inch)

PKJ SERIES 150 W
HALF BRICK
Standardized design with industry leading performance

- High efficiency typ. 93% at 3.3 V
- Input voltage range 36-75 V
- Output voltage 1.8 to 12 V
- Size (LxWxH): 61.0 x 57.9 x 12.7 mm (2.4 x 2.28 x 0.5 Inch)

PKJ-B SERIES 132 W
HALF BRICK
Standardized design with industry leading performance. Patent Pending Paralleling Feature

- High efficiency, typ. 92% at 3.3 V full load
- Input voltage range 36-75 V
- Output voltage 1.8 to 3.3 V
- Size (LxWxH): 61.0 x 57.9 x 12.7 mm (2.4 x 2.28 x 0.5 Inch)
INDUSTRY STANDARD

BMR 454 240 W
3E EIGHTH BRICK
High performance DC/DC converter with
digital power control and optional
PMBus interface
› High efficiency, typ. 95.5% at 12 V
› Input voltage range 36-75 V
› Variable output voltage 8.1-13.2 V
› Synchronization
› Power Good
› PMBus compliant
› Size (LxWxH): 58.4 x 22.7 x 10.2 mm
  (2.3 x 0.89 x 0.4 Inch)

PKJ-N SERIES 310 W
HALF BRICK FOR RFPA
Designed to power your Radio
Frequency Power Amplifiers
› High efficiency, typ. 92%
› Input voltage range 36-75 V
› Output voltage 28.2 and 30.2 V
› Size (LxWxH): 61 x 57.9 x 13.2 mm
  (2.4 x 2.28 x 0.524 Inch)

PKL SERIES 366 W
HALF BRICK
Maximum power and maximum
reliability enhanced half-brick footprint.
Patent Pending Paralleling Feature
› High efficiency typ. 92% at half load,
typ. 88 % at full load
› Input voltage range 36-75 V
› Output voltage 1.8 to 12 V
› Size (LxWxH): 61.5 x 61.0 x 12.7 mm
  (2.42 x 2.4 x 0.5 Inch)
INDUSTRY STANDARD

BMR 453 SERIES 400 W
3E QUARTER BRICK
High performance DC/DC converter with
digital power control and optional
PMBus interface

› High efficiency 96% at half load
› Input voltage range 36-75 V
› Variable output voltage 8.5-13.5 V
› Synchronization
› Power Good
› Current share
› PMBus compliant
› Size (LxWxH): 57.9 x 36.8 x 11.6 mm
  (2.28 x 1.45 x 0.46 Inch)

PKY SERIES 700 W
FULL BRICK FOR RFPA
Very high efficient design for RFPA
applications

› High efficiency typ. 93% at 30% to100%
  load
› Input voltage range 18-36 and 36-75 V
› Output voltage 28 V
› Size (LxWxH): 116.8 x 61.0 x 12.7 mm
  (4.6 x 2.4 x 0.50 Inch)

MicroTCA power module

Very High Efficiency Power Supply for
MicroTCA applications

› High efficiency 95% at half load
› Input voltage range -40.5 to -57.0 V
› Output voltage:
  Payload: 12 V in 16 branches, 350 W
  Management: 3.3 V in 15 branches, 5 W
> INTERMEDIATE BUS CONVERTERS
**REGULATED AND FIXED RATIO**

**PKU-B SERIES** 100 W
**WIDE-INPUT SIXTEENTH BRICK**
High power density Intermediate Bus Converter

- High efficiency 93%
- Input voltage range 36-75 V
- Output voltage 5 V
- Output current 20 A
- SMD or through-hole-mount
- Size (LxWxH): 33 x 22.9 x 9.9 mm (1.3 x 0.9 x 0.39 Inch)

**PKB-B SERIES** 240 W
**WIDE-INPUT EIGHTH BRICK**
Intermediate Bus Converter series optimized to drive your Distributed Power Architecture

- High efficiency 95%
- Input voltage range 36 – 72 V
- Output Voltage 5 V and 12 V
- Output current 20 A at 12 V
- Optional base plate and surface mount
- Size (LxWxH): 58.4 x 22.7 x 10.7 mm (2.3 x 0.89 x 0.42 Inch)

**PKB-NG SERIES** Up to 300 W
**NARROW-INPUT EIGHTH BRICK**
Very high efficiency and power density Intermediate Bus Converter series optimized to power non-battery backup equipment

- High efficiency 97%
- Input voltage range 38 - 55 V
- Conversion ratio 5:1
- Output current 32 A at 9.6 V
- Size (LxWxH): 58.4 x 22.7 x 10.6 mm (2.3 x 0.89 x 0.416 Inch)
REGULATED AND FIXED RATIO

PKM-N SERIES 240 to 316 W QUARTER BRICK
Intermediate Bus Converter series optimized on cost and performance to power non-battery backup applications

› High efficiency 96%
› Input voltage range 42 – 53 V, 36 – 55 V and 40 – 72 V Input
› Conversion ratio 4:1 and 5:1
› Output current 25 A
› Size (LxWxH): 57.9 x 36.8 x 10.9 mm (2.28 x 1.45 x 0.429 Inch)

PKM-NG SERIES Up to 674 W NARROW-INPUT QUARTER BRICK
Very High Power Density Intermediate Bus Converter series optimized to power non-battery backup equipment

› High efficiency 96%
› Input voltage range 38 - 55 V
› Conversion ratio 5:1
› Output current 63 A at 9.6 V
› Size (LxWxH): 57.9 x 36.8 x 11.6 mm (2.28 x 1.45 x 0.457 Inch)

PKM-B SERIES 288 & 380 W WIDE-INPUT QUARTER BRICK
Intermediate Bus Converter optimized to drive your Distributed Power Architecture

› High efficiency 96%
› Input voltage range 36-75 V
› Output voltage 9 V and 12 V
› Output current 33 A at 12 V
› Optional base plate and case to ground pin or SMD
› Size (LxWxH): 57.9 x 36.8 x 11.6 mm (2.28 x 1.45 x 0.457 Inch)
> POINT OF LOAD REGULATORS
INDUSTRY STANDARD

PMC SERIES 10 A / 16 A
Flexible design in widely used footprint providing cost-efficient solutions.
› High efficiency, typ. 95% at 3.3 V
› Programmable output, 0.75-5.50 V
› Wide input, 3-5.5 V and 8.3-16.0 V
› Size (LxWxH): 33 x 13.5 x 8.3 mm (1.3 x 0.53 x 0.323 Inch)

PMB SERIES 10 A / 16 A
Small footprint, 51 x 9 mm, cost-efficient solution.
› High efficiency, typ. 94% at 3.3 V
› Programmable output, 0.75-5.50 V
› Wide input, 3-5.5 V and 8.3-16.0 V
› Size (LxWxH): 51 x 9 x 13.2 mm (2.01 x 0.35 x 0.52 Inch)
POLA STANDARD

PME-F SERIES 6 A
DDR/QDR
DC/DC regulator designed under POLA standards
› High efficiency, typ. 89%
› Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
› Output power 10.8 W
› Plated-Through-Hole and Surface Mount versions
› Size (LxWxH): 22.1 x 12.57 x 8.51 mm (0.87 x 0.495 x 0.335 Inch)

PMF-F SERIES 10 A
DDR/QDR
DC/DC regulator designed under POLA standards
› High efficiency, typ. 90%
› Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
› Output power 18 W
› Plated-Through-Hole and Surface Mount versions
› Size (LxWxH): 22.1 x 12.57 x 8.51 mm (0.87 x 0.495 x 0.335 Inch)

PMG-F SERIES 15 A / 12 A
DDR/QDR
DC/DC regulator designed under POLA standards
› High efficiency, typ. 89%
› Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
› Output power 27 and 21.6 W
› Plated-Through-Hole and Surface Mount versions
› Size (LxWxH): 22.1 x 12.57 x 8.51 mm (0.87 x 0.495 x 0.335 Inch)
POLA STANDARD

PMD SERIES 3 A / 2.25 A
DC/DC regulator designed under POLA standards
› High efficiency, typ. 82%
› Wide input voltage range, 3-5.5 V and 4.0-14 V
› Output power 10.8 and 12.4 W
› Plated-Through-Hole and Surface Mount versions
› Size (LxWxH): 18.92 x 12.57 x 8.5 mm (0.745 x 0.495 x 0.335 Inch)

PME SERIES 6 A
DC/DC regulator designed under POLA standards
› High efficiency, typ. 87%
› Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
› Output power 15, 22, 33 and 10.8 W
› Plated-Through-Hole and Surface Mount versions
› Size (LxWxH): 18.92 x 12.57 x 8.5 mm (0.745 x 0.495 x 0.335 Inch)

PMF SERIES 10 A
DC/DC regulator designed under POLA standards
› High efficiency, typ. 88%
› Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
› Output power 25, 36, 55 and 18 W
› Plated-Through-Hole and Surface Mount versions
› Size (LxWxH): 25.27 x 15.75 x 9.00 mm (0.995 x 0.62 x 0.354 Inch)
POLA STANDARD

PMG SERIES 15 A / 12 A
DC/DC regulator designed under POLA standards
- High efficiency, typ. 88%
- Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
- Output power 37.5, 54, 66 and 21.6 W
- Plated-Through-Hole and Surface Mount versions
- Size (LxWxH): 34.8 x 15.75 x 9.00 mm (1.37 x 0.62 x 0.354 Inch)

PMH SERIES 22 A / 18 A
DC/DC regulator designed under POLA standards
- High efficiency, typ. 88%
- Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
- Output power 55, 79.2, 99 and 32 W
- Plated-Through-Hole and Surface Mount versions
- Size (LxWxH): 37.97 x 22.1 x 9.00 mm (1.495 x 0.87 x 0.354 Inch)

PMP SERIES 16 A
Fast Transient Response
DC/DC regulator designed under POLA standards
- High efficiency, typ. 96%
- Wide input voltage range, 4.5-14 V
- Output power 88 W
- Plated-Through-Hole and Surface Mount versions
- Size (LxWxH): 34.8 x 15.75 x 8.5 mm (1.37 x 0.62 x 0.335 Inch)
POLA STANDARD

PMJ SERIES 30 A / 26 A
DC/DC regulator designed under POLA standards
- High efficiency, typ. 88%
- Wide input voltage range, 2.95-3.65 V, 4.5-5.5 V and 10.8-13.2 V
- Output power 75, 108, 143 and 47 W
- Plated-Through-Hole and Surface Mount versions
- Size (LxWxH): 34.80 x 28.45 x 9.00 mm (1.37 x 1.12 x 0.354 Inch)

PMN SERIES 30 A
Fast Transient Response
DC/DC regulator designed under POLA standards
- High efficiency, typ. 96%
- Wide input voltage range, 4.5-5.5 V and 5.5-14 V
- Output power 108 W
- Plated-Through-Hole and Surface Mount versions
- Size (LxWxH): 34.8 x 15.75 x 8.5 mm (1.37 x 0.62 x 0.335 Inch)

PMR SERIES 50 A / 40 A
DC/DC regulator designed under POLA standards
- High efficiency, typ. 96%
- Wide input voltage range, 4.5-14 V and 8-14 V
- Output power 180 and 210 W
- Plated-Through-Hole and Surface Mount versions
- Size (LxWxH): 38.61 x 25.91 x 9.64 mm (1.52 x 1.02 x 0.38 Inch)
POMM SERIES 60 A / 50 A

DC/DC regulator designed under POLA standards

› High efficiency, typ. 90%
› Wide input voltage range, 2.95-5.5 V and 8-14 V
› Output power 198 and 250 W
› Plated-Through-Hole and Surface Mount versions
› Size (LxWxH): 51.94 x 26.54 x 9.07 mm (2.045 x 1.045 x 0.357 Inch)
3E FIRST GENERATION

BMR 450 SERIES 20 A
Digitally controlled 3E POL regulator
DC/DC regulator designed with DiPOL footprint
› High efficiency, typ. 96.8%
› Wide input voltage range, 4.5-14 V
› Output power 100 W
› Very high current density 7.38 A/cm³ (120 A/in³)
› PMBus compliant
› Size (LxWxH): 25.7 x 12.9 x 8.2 mm (1.01 x 0.51 x 0.32 Inch)

BMR 451 SERIES 40 A
Digitally controlled 3E POL regulator
DC/DC regulator designed with DiPOL footprint
› High efficiency, typ. 96.4%
› Wide input voltage range, 4.5-14 V
› Output power 132 W
› Very high current density 7.3 A/cm³ (120 A/in³)
› PMBus compliant
› Size (LxWxH): 30.8 x 20 x 8.2 mm (1.22 x 0.79 x 0.32 Inch)
3E SECOND GENERATION

BMR 462 SERIES 12 A
Digitally controlled 3E POL regulator
Second generation PMBus compatible 3E POL with DiPOL footprint
- High efficiency, typ. 97.1%
- Wide input voltage range, 4.5-14 V
- Output power 60 W
- Current sharing, Voltage Tracking & Voltage margining
- PMBus compliant
- Size (LxWxH): 21.0 x 12.7 x 8.2 mm (0.83 x 0.50 x 0.32 Inch)

BMR 463 SERIES 20 A
Digitally controlled 3E POL regulator
Second generation PMBus compatible 3E POL with DiPOL footprint
- High efficiency, typ. 97.1%
- Wide input voltage range, 4.5-14 V
- Output power 66 W
- Current sharing, Voltage Tracking & Voltage margining
- PMBus compliant
- Size (LxWxH): 25.6 x 13.8 x 8.2 mm (1.01 x 0.54 x 0.32 Inch)

BMR 464 SERIES 40 A
Digitally controlled 3E POL regulator
Second generation PMBus compatible 3E POL with DiPOL footprint
- High efficiency, typ. 97.2%
- Wide input voltage range, 4.5-14 V
- Output power 132 W
- Current sharing, Voltage Tracking & Voltage margining
- PMBus compliant
- Size (LxWxH): 30.8 x 20.0 x 8.2 mm (1.22 x 0.79 x 0.32 Inch)
BOARD POWER MANAGEMENT

3E Design kit

The design kit includes:
- POL test board
- IBC test bord
- PMBus Adapter and cables
- BMR462, BMR463 and BMR464 POL regulators
- BMR453 and BMR454 isolated converters
- 3E GUI Gold edition
3E Evaluation kit

The evaluation kit includes:

- Evaluation board
- BMR450 and BMR451 POL regulators
- BMR453 and BMR454 isolated converters
- CD including 3E GUI Silver edition
- USB cable
BOARD POWER MANAGEMENT

PIM4000 10 A
Power interface Modules
Optimized to simplify design in blade servers based on Advanced TCA (PICMG 3.0) systems

› Efficiency typ. 99% at 300 W
› Input voltage range 36-75 V
› Output power 390-540 W
› Low EMI
› Industry-standard low profile Quarter-brick. Max height 13.7 mm (0.539 in)
POWER BLOCK

Power Block 30 A

Non-isolated single output Buck converter. Controlled by external PWM controller. Extremely cost effective for POL applications.

› High efficiency, typ. 94%
› Input voltage range, 7.0-13.2 V
› Excellent transient response
› Surface Mount
› Size (LxWxH): 25.4 x 12.7 x 11.43 mm (1.00 x 0.50 x 0.45 Inch)
CUSTOM DESIGNS

- Board-to-Board technology
- Form factor tailor made to fit final application without mechanical constraints
- One side component technology contributing to cost efficiency and final assembling
- Unlimited combinations of modules and sub-modules

- Customized surface mount products based on industrial platforms
- High compatibility with standard manufacturing equipments
- Layout optimized to comply with final application requirements
- Quick time-to-market due to standardized mechanical platforms

- Custom assemblies offering multiple combinations of footprint
- Base-plate option for high thermal performances
WHERE DO OUR PRODUCTS GO?

› ATM or IP Networks
› Cellular Radio Networks
› Digital Subscriber Lines (xDSL)
› Storage Area Networks (SAN)
› Wide Area Networks (WAN)
› Wireless Local Areas Networks (WLAN)

And also in many other applications, such as:

› Avionics, medical, industrial process control, etc.

POWER MODULES CAN BE USED FOR ALL KINDS OF COMMUNICATION TECHNOLOGIES
APPLICATION EXAMPLES

RBS (GSM or WCDMA)

Data Switch (Router, Media Gateway, IP Switch)

Radio link (Mini-link)

Access (ADSL)