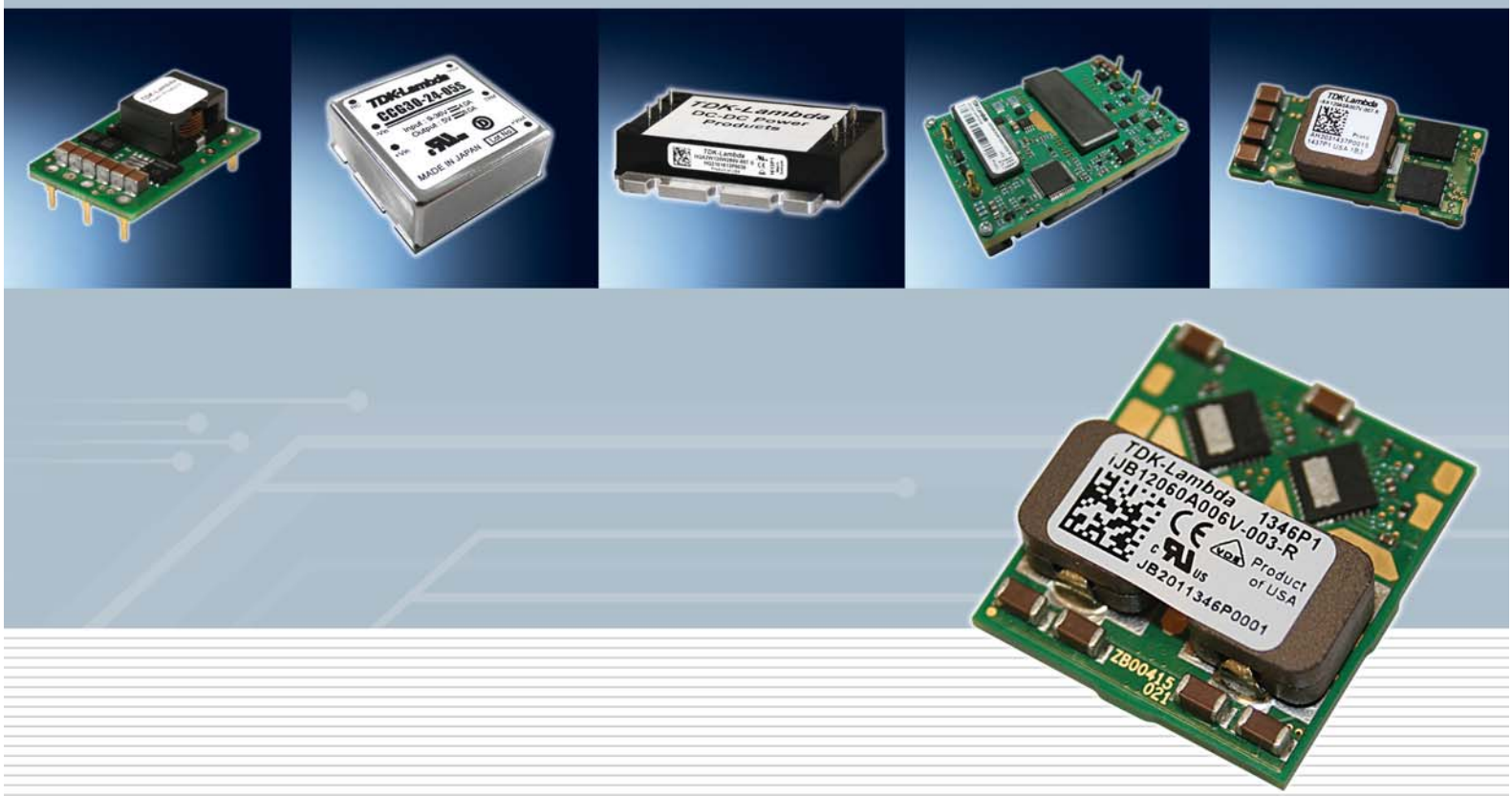
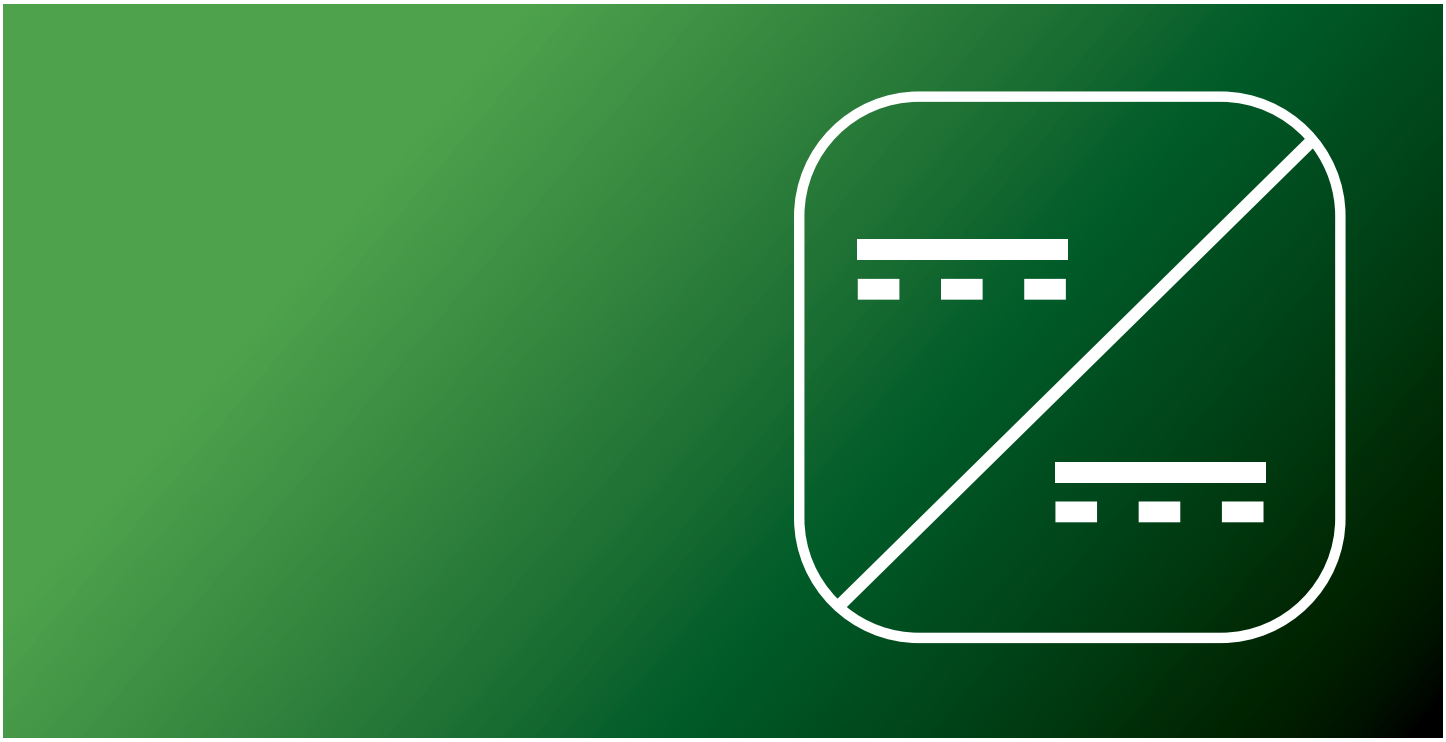
TDK-Lambda DC/DC Converters



Edition 2

DC-DC Converters



Applications DC-DC Converters

- Distributed Power Architecture with DC Bus
- Small subsystems with battery backup

Features DC-DC Converters

- Galvanic isolation between input and output
- Power range from 1.5W to 700W
- Convection cooling, conduction cooling with baseplate or forced air cooling
- Input voltage ranges 2:1 or 4:1
- Nominal input voltages 5V, 12V, 24V, 48V, 110V or 280V

Features Point of Load Converters

- No galvanic isolation
- High efficiency
- Very fast transient response time
- SMT or through hole mounting
- Supply of logic voltages below 5V direct at the load

Isolated

Series	Total Power (W)	Outputs	Input Volts (VDC)	Output Volts (VDC)	Amps (A)	Size (inches)	Type
CC-E	1.5-25	1 to 2	4.5-76	3.3-30	up to 7.5	DIP/SIP	PCB Mount
PXC-M03	3	1 to 2	9-75	3.3-30	up to 1	1.25 x 0.8 x0.4	PCB Mount
PXC-M06	6	1 to 2	9-75	3.3-30	up to 1.8	1.25 x 0.8 x 0.4	PCB Mount
PXC-M10	10	1 to 2	9-75	3.3-30	up to 2.5	1.25 x 0.8 x 0.4	PCB Mount
PXD10,20	10-20	1 to 2	9-75	3.3-30	up to 5	2 x 1 x 0.4	PCB Mount
CCG15	15	1	9-76	3.3-15	up to 4	1 x 1x 0.39	PCB Mount
PXE	20-30	1 to 2	9-75	3.3-30	up to 6	2 x 1.6 x 0.4	PCB Mount
CCG30	23-30	1	9-76	3.3-15	up to 7	1 x 1x 0.39	PCB Mount
PXF	40-60	1 to 3	9-75	3.3-15	up to 14	2 x 2 x 0.4	PCB Mount
iEA	48-78	1	18-75	5-28	up to 15	2.3 x 0.9 x 0.35	Eighth Brick
iEH	300-460	1	36-75	9.6-12	up to 40	2 x 0.9 x 0.49	Eighth Brick
CN-A110	30-100	1	60-160	5-24	up to 20	2.28 x 1.45 x 0.5	Quarter Brick
HQA	85-120	1	9-40	5-48	up to 24	2.39 x 2.2 x 0.5	Quarter Brick
GQA	120	1	9-36	5-48	up to 20	2.39 x 1.95 x 0.5	Quarter Brick
iQE	49-204	1	16-75	3.3-15	up to 30	2.28 x 1.45 x 0.41	Quarter Brick
CN-A24	50-100	1	14.4-36	5-24	up to 20	2.28 x 1.45 x 0.5	Quarter Brick
PH-A280	50-300	1	200-425	3.3-48	up to 25	1.46 x 0.5 x 2.3	Quarter Brick
iQL	72-308	1	18-75	1.2-28	up to 60	2.28 x 1.45 x 0.52	Quarter Brick
iQG	300-504	1	36-75	9.6-12	up to 47	2.28 x 1.45 x 0.52	Quarter Brick
CN-200A110	200	1	60-160	5-24	up to 40	2.4 x 2.28 x 0.5	Half Brick
PAH300-450	300-450	1	18-76	12-48	up to 29	2.4 x 2.28 x 0.5	Half Brick
iHG	300-456	1	36-75	12	up to 38	2.36 x 2.24 x 0.52	Half Brick
PAF600F	600	1	19-76	12, 28	up to 50	4.6 x 2.4 x 0.5	Full Brick

Non-Isolated

Series	Total Power (W)	Outputs	Input Volts (VDC)	Output Volts (VDC)	Amps (A)	Size (inches)	Type
iCF	16-24	1	2.4-14	0.6-5.5	up to 5	0.48 x 0.48 x 0.175	DOSA 2
iCG	33	1	2.4-14	0.6-5.5	up to 6	0.48 x 0.48 x 0.335	DOSA 2
iCH	85	1	4.5-14	0.7-8.5	up to 12	0.48 x 0.48 x 0.335	DOSA 2+
iBH	80	1	3-14	0.7-5.5	up to 20	0.8 x 0.45 x 0.39	DOSA 2+
iAH	150	1	3.5-17	0.7-5.5	up to 40	1.3 x 0.53 x 0.4	DOSA 2+
iJA35A	100	1	8-14	0.6-3.3	up to 35	0.9 x 0.5 x 0.38	SMT
iJB	120	1	8-14	0.6-2	up to 60	1.055 x 0.948 x 0.381	SMT
iJC	150	1	8-14	0.6-1.5	up to 100	1.1 x 1.37 x 0.39	SMT
i6A	250	1	9-40	3.3-24	up to 14	1.3 x 0.9 x 0.5	Sixteenth Brick
i6A4W	250	1	9-53	3.3-15	up to 20	1.3 x 0.9 x 0.5	Sixteenth Brick
i6AN	75	1	9-40	-3.5- -30	up to 8	1.3 x 0.9 x 0.5	Sixteenth Brick
i3A	100	1	9-53	3.3-30	up to 8	0.75 x 0.92 x 0.38	32nd Brick

DC-DC Converters

Applications

- Distributed power architecture
- Battery powered devices
- Industrial
- Medical
- Communications
- Computing
- Data storage
- Test & measurement
- Transportation
- COTS

Features

- Galvanic isolation between input and output
- Power range from 1.5W to 700W
- Convection cooling, conduction cooling with baseplate of forced air cooling
- Input voltage ranges 2:1 or 4:1
- Nominal input voltages 5V, 12V, 24V, 48V, 110V or 280V
- Very high efficiencies
- Industry leading power density

CC-E Series

RoHS

1.5-25W, Ultra Compact Single and Dual DC-DC Converters

- Compact Footprint / Low Profile
- Through Hole or SMT Versions
- 5V, 12V, 24V & 48V Inputs
- 3.3 to 30V Single, ±12 to 15V Dual Outputs
- Output Voltage Adjustment
- Input - Output Isolation
- RoHS Compliant
- 5 Year Warranty
- Self contained
- Multiple Input Voltage configurations
- Lightweight design (no potting)

PXC-M03 Series

RoHS

3W Medical DC-DC Converters

- IndustryStandard DIP-24 Package
- 9-36V or 18-75VDC Input
- 3.3-30VDC Outputs
- 5kVAC Isolation (2xMOPPs)
- 2.5uA Leakage Current
- Low Off-Load Power Draw

PXC-M06 Series

RoHS

Medical 6W DC-DC Converters

- Industry Standard DIP-24 Package
- 9-36V or 18-75VDC Input
- 3.3-30VDC Outputs
- 5kVAC Isolation (2xMOPPs)
- 2.5uA Leakage Current
- Low Off-Load Power Draw

PXC-M10 Series

RoHS

10W Medical DC-DC Converters

- Industry Standard DIP-24 Package
- 9-36V or 18-75VDC Input
- 3.3-30VDC Outputs
- 5kVAC Isolation (2xMOPPs)
- 2.5uA Leakage Current
- Low Off-Load Power Draw

PXD Series

RoHS

10-20W Single and Dual Output DC-DC Converters

- Industry Standard 2” x 1” Footprint
- Six Sided Shielding
- Agency Approved
- 12V, 24V and 48V Inputs
- 3.3-30VDC Outputs
- UL, CSA, EN, CE approvals
- Wide range input

PXE Series

RoHS

20-30W Single and Dual Output DC-DC Converters

- Industry Standard 2” x 1.6” Footprint
- Six Sided Shielding
- Agency Approved
- 12V, 24V and 48V Inputs
- 3.3-30VDC Outputs
- UL, CSA, EN, CE approvals
- Wide range input

CCG15 Series

RoHS

15W DC-DC Converters

- Industry Standard 1” x 1” Footprint
- Wide Range DC Input 9 - 36 or 18 - 76V
- 3.3-15VDC Outputs
- High Efficiency - Up to 88%
- Six Sided Shielding

CCG30 Series

RoHS

23-30W DC-DC Converters

- Industry Standard 1” x 1” Footprint
- Wide Range DC Input 9 - 36 or 18 - 76V
- 3.3-15VDC Outputs
- High Efficiency - Up to 91%
- Six Sided Shielding

PXF Series

RoHS

40W & 60W Single, Dual, Triple Output DC-DC Converters

- Industry Standard 2” x 2” Footprint
- Six Sided Shielding
- Agency Approved
- 12, 24V, and 48V Inputs (including 4:1 ranges)
- UL, CSA, EN, CE approvals
- Wide input range

iEA Series

RoHS

48-78W Eighth Brick DC-DC Converters

- Standard Eighth Brick Footprint
- 36-75VDC Input
- 5V 15A - 28V 2.67A Nominal Output
- Through Hole Mounting, open frame design
- Low 8.8mm Profile
- 1500VDC Basic Isolation
- High operating efficiency (up to 91%)
- Constant switching frequency

iEH Series

RoHS

300-460W Eight Brick Converter

- Standard Eighth Brick Footprint
- 36-75VDC Input
- 9.6-12V Output
- Through Hole Mounting, Baseplate Cooled
- 2250VDC Basic Isolation
- Digital adaptive control
- High Operating Efficiency (up to 94.6%)
- Constant Switching Frequency

CN-A110 Series

RoHS

30-200W, 60 to 160VDC Input DC-DC Converters

- 60 - 160VDC Input
- 5-24VDC Outputs
- IEC 61373 Shock and Vibration
- Base plate Cooled
- Full Power at 100°C base plate
- Parallel Operation (200W Only)
- Small Size
- Quarter and Half Brick Footprint
- Full Power from -40 to +100°C
- Parallel Function (CN200)

HQA Series

RoHS

85-120W Mil-COTS Quarter Brick Converters

- Standard Quarter Brick Footprint
- 9-40, 18-40VDC Inputs
- 5 to 48V Nominal Outputs
- Up to 91.5% Efficiency
- Up to 115°C baseplate
- 2250VDC Isolation
- Mil STD qualifications
- No optocouplers used
- Enhanced Screening (-55°C) operation

GQA Series

RoHS

120W Industrial Quarter Brick Converters

- Standard Quarter Brick Footprint
- 18-36, 9-36VDC Inputs
- 5-48VDC Outputs
- Up to 91.5% Efficiency
- Up to 3000VDC (potted option) isolated
- Open Frame or Potted versions

iQE Series

RoHS

49-204W Quarter Brick Converter

- Standard Quarter Brick Footprint
- 16-40, 36-75VDC Inputs
- 3.3V 30A - 15V 10A Nominal Outputs
- Through Hole Mounting
- Low 10.41mm Profile
- 1500VDC Basic Isolation
- High operating efficiency (>90%)
- Constant switching frequency, low component count

CN-A24 Series

RoHS

50 & 100W 14.4 to 36VDC Input DC-DC Converters

- 14.4 - 36VDC Input
- 5-24VDC Outputs
- IEC 61373 Shock and Vibration
- Base-plate Cooled
- Full Power at 100°C base plate
- Small Size
- Quarter Brick Footprint
- Wide input range

PH-A280 Series

RoHS

50-300W, 200 to 425VDC Input DC-DC Converters

- 200 - 425VDC Input
- 3.3-48VDC Outputs
- Base-plate Cooled
- Full Power at 100°C base plate
- Quarter Brick Footprint

iQL Series

RoHS

72-308W Quarter Brick Converter

- Standard Quarter Brick Footprint
- 18-36, 36-75VDC Inputs
- 1.2V 60A, 28V 11A Nominal Outputs
- Through Hole Mounting
- 1500VDC Basic Isolation
- Baseplate cooling,
- High operating efficiency (up to 93.5%)
- Constant switching frequency

iQG Series

RoHS

300-504W Quarter Brick Converters

- Standard Quarter Brick Footprint
- 36-75VDC Input
- 9.6 or 12VDC Outputs
- Through Hole Mounting
- 1500VDC Basic Isolation
- High operating efficiency (up to 95%)
- Starts with pre-biased output, baseplate cooled
- Constant switching frequency, Parallel Operation (400W model)

PAH300-450 Series

RoHS

300-450W Half Brick Converters

- Standard Half Brick Footprint
- 18-36 or 36-76VDC Inputs
- 12-48VDC Outputs
- Through Hole Mounting
- Low 12.7mm Profile
- High operating efficiencies (up to 92%)
- Constant switching frequency
- Baseplate cooling

iHG Series

RoHS

300-456W, 48V Input Half Brick Converter

- Standard Half Brick Footprint with Baseplate
- 36 -75VDC Input
- 12V Nominal Output
- Through Hole Mounting
- 1500VDC Basic Isolation
- High operating efficiency (up to 94%)
- Constant switching frequency
- Low component count

PAF600F Series

RoHS

600W, 24V & 48V Input Full brick DC-DC Converters

- 12V output for driving non-isolated converters
- Safety Approved
- Full power at 100°C baseplate
- Opto Isolated Remote On / Off
- Wide Adjustable Output Range
- Parallel Operation
- ASIC Design
- 24V & 48V Inputs

EMC/EMI Filters

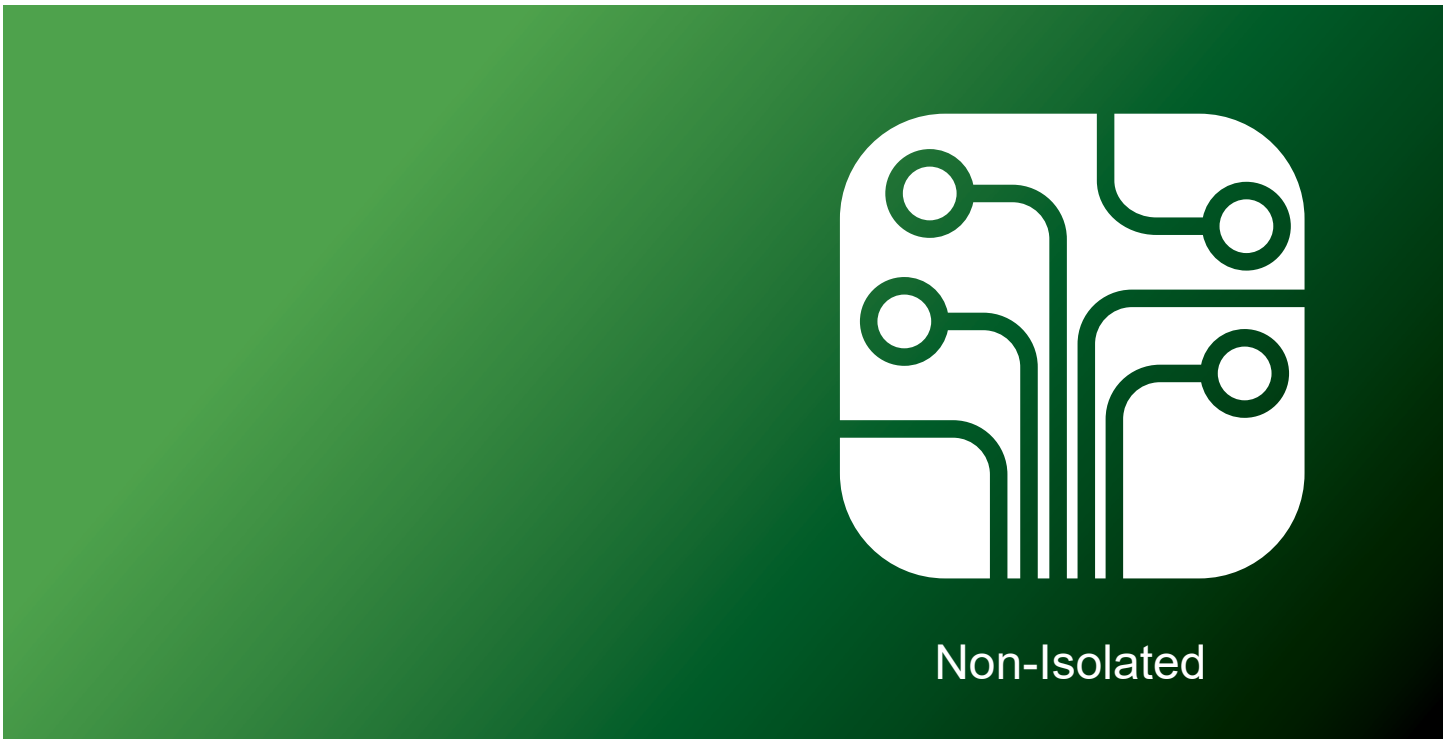
iDQ Series

RoHS

10A, 75VDC EMI Filters

- Exceptional Differential Mode Performance
- Very Compact Size
- Minimal External Components Required

DC-DC Converters



Applications

- Distributed power architecture
- Battery powered devices
- Industrial
- Medical
- Communications
- Computing
- Data storage
- Test & measurement
- Transportation
- COTS

Features

- No galvanic isolation
- Very high efficiency
- Very fast transient response time
- SMT or through hole mounting
- Supply of logic voltages directly at the load
- Industry leading power density
- iJx models offer digital adaptive control with PMBus

iCF Series

RoHS

24.7W (4.5A), 16.5W (3A), Non-isolated SMT Point Of Load

- Surface Mountable
- DOSA Compatible Footprint
- DOSA Compatible Footprint
- Constant Switching Frequency
- Edge Plated Castellations (EPC)
  - Inspectable Solder Joints
- No external loop tuning components needed
- Excellent Transient Response

iCG Series

RoHS

33W, 6A Non-isolated SMT Point Of Load

- Surface Mountable
- DOSA Compatible Footprint
- Constant Switching Frequency
- Edge Plated Castellations (EPC)
  - Inspectable Solder Joints
- No external loop tuning components needed
- Excellent Transient Response

iCH Series

RoHS

85W, 12A Non-isolated SMT Point of Load

- DOSA Compatible Footprint
- Surface Mountable
- Constant Switching Frequency
- No external loop tuning components needed
- Excellent Transient Response

iBH Series

RoHS

80W, 20A Non-isolated SMT Point of Load

- DOSA Compatible Footprint
- Surface Mountable
- Constant Switching Frequency
- No external loop tuning components needed
- Excellent Transient Response

iAH Series

RoHS

150W, 40A Non-isolated SMT Point of Load

- DOSA Compatible Footprint
- Surface Mountable
- Constant Switching Frequency
- No external loop tuning components needed
- Excellent Transient Response

iJA35A Series

PMBus

RoHS

100W, 35A Non-isolated SMT Point of Load with PMBus

- Only 0.45 in^2 Board Space
- PMBus Compliant (Read & Write)
- Surface Mountable
- Digital Adaptive Control
- Parallel Operation with Current Sharing
- Configurable Sequence & Fault Management

iJB Series

120W, 60A Non-isolated SMT Point of Load with PMBus

- Only 1.0 in^2 Board Space
- PMBus Compliant (Read & Write)
- Surface Mountable
- Digital Adaptive Control
- Parallel Operation with Current Sharing
- Configurable Sequence & Fault Management

iJC Series

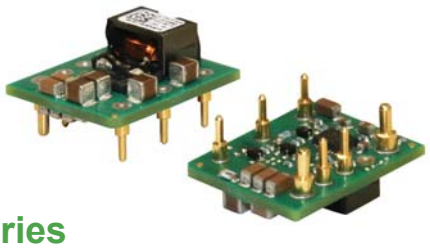
150W, 100A Non-isolated SMT Point of Load with PMBusTM

- Only 1.5 in2 Board Space
- 8 to 14V Input
- 0.6 - 1.5V Output
- Digital Adaptive Control
- Configurable Sequence and Fault Management

i6A & i6A4W Series

250W, 9-53V Input Non-isolated DC-DC Converter

- 250W up to 20A Output
- 1/16th brick Footprint
- Wide Output Adjustment 3.3 to 40V
- Efficiency up to 98%
- Minimal External Components Needed
- Constant Switching Frequency



i3A Series

100W, 9-53V Input Non-isolated DC-DC Converter

- 100W, up to 8A Output
- 32nd brick Footprint
- Wide Output Adjustment 3.3 to 30V
- Efficiency up to 97%
- Excellent Derating Performance
- Minimal External Components Needed
- Constant Switching Frequency

i6AN Series

75W, 9 to 40V Input Non-isolated DC-DC Converter with Negative Output

- 75W 8A Output
- 1/16th brick Footprint
- Wide Output Adjustment -3.3 to -30V
- Minimal External Components Needed
- Constant Switching Frequency

Evaluation Kits

iJx, i3A i6A Series