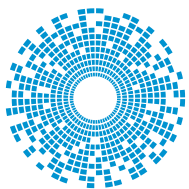




Board Mount Products



bel POWER
SOLUTIONS &
PROTECTION

a bel group

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About Bel

Bel is a publicly traded company that has been operated by the same family for over 65 years. Our history of organic growth and acquisitions have broadened our product portfolio. This has established Bel as a world leader with a diverse offering of power, protection and interconnect products. We design and manufacture these products which are primarily used in the networking, telecommunications, computing, military, aerospace, transportation and broadcasting industries. Bel's portfolio of products also finds application in the automotive, medical and consumer electronics markets.

Bel Power Solutions DC-DC Board Mount Products

Bel Power Solutions offers a comprehensive range of high power density, board-level DC-DC converters covering all the popular industry standard sizes and footprints ranging from 1/16 to 1/2, analog POL converters and feature-rich digital power solutions that seamlessly integrate power conversion and management.

From standard models to modified products and complete custom designs, Bel Power Solutions continues to develop new, more efficient isolated and non-isolated DC-DC converters in a wide variety of options based on package configurations, input and output voltage, power and converter technology requirements for a broad array of applications.

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MicroSIP Series

Specifications

- Industry Standard Package
- Max Input Voltage 4.5 – 13.8 V
- Max Output Current up to 10 A
- Max Output Power up to 51 W

Design Features

- Remote On / Off
- Input Under Voltage Lockout
- OCP / SCP / OVP
- Wide Output Voltage Trim Ranges
- Wide Input Range



Description

The "MicroSIP" Series are part of the non-isolated DC to DC converter Power Module series. The modules are available in a SIP package, offering a wide output voltage trim range from 0.59 V to 5.1 V when operating from an input range of 4.5 V to 13.8 V.

The efficiency is typically 91% at 3.3 Vout (Vin = 12 V) at full load.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
VRAE-01E1A0	5.5 – 13.8 V	0.60 – 5.1 V	1.5 A	7.65 W	0.40 x 0.41 x 0.284 in
VRAE-03E1A0	4.5 – 13.8 V	0.59 – 5.1 V	3 A	15 W	0.65 x 0.41 x 0.320 in
VRAE-06E1A0	4.5 – 13.8 V	0.59 – 5.1 V	6 A	30 W	0.65 x 0.41 x 0.295 in
VRAE-10E1A0	4.5 – 13.8 V	0.59 – 5.1 V	10 A	50 W	0.65 x 0.41 x 0.320 in
VRAF-08AT50*	5.0 – 13.8 V	vddq/2	8 A	7.2 W	0.65 x 0.41 x 0.400 in

* Tracking Regulator

PowerSIP Series

Specifications

- Industry Standard Package
- Max Input Voltage 4.5 – 14.0 V
- Max Output Current up to 120 A
- Max Output Power up to 400 W

Design Features

- Remote on/off
- Input under voltage lockout
- OCP / SCP / OVP
- Wide output voltage trim ranges
- Wide Input Range



Description

The PowerSIP Series are non-isolated DC to DC converters operating over a wide range of input voltage. The three phase unit shown here can deliver up to 90 A of output current. These units are designed to be highly efficient and low cost. The converters are provided in an industry standard package.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
VRP1-20E1A0	4.5 – 13.8 V	0.591 – 5.1 V	20 A	100 W	1.45 x 0.61 x 0.400 in
VRP1-30E1A0	4.5 – 13.8 V	0.591 – 5.1 V	30 A	150 W	1.20 x 0.61 x 0.710 in
VRP1-30E3A0	6.5 – 13.8 V	1.025 – 1.2 V	30 A	36 W	1.20 x 0.61 x 0.650 in
VRP2-40E1A0	5.0 – 13.8 V	0.600 – 5.0 V	40 A	200 W	1.45 x 1.10 x 0.377 in
ORP2-40E1A0	5.0 – 13.8 V	0.600 – 5.0 V	40 A	200 W	1.45 x 1.10 x 0.500 in (Horizontal)
VRP2-50E1A0	5.0 – 13.8 V	0.600 – 5.0 V	50 A	250 W	1.45 x 1.10 x 0.743 in
ORP2-50E1A0	5.0 – 13.8 V	0.600 – 5.0 V	50 A	250 W	1.45 x 1.10 x 0.783 in (Horizontal)
VRP3-60E1A0	5.0 – 13.8 V	0.600 – 5.0 V	60 A	300 W	2.58 x 1.25 x 0.608 in
VRP3-90E1A0	6.5 – 13.2 V	1.200 – 2.1 V	90 A	200 W	2.00 x 1.20 x 0.700 in
VRP4-80A1A0	10.8 – 13.2 V	0.600 – 5.0 V	80 A	400 W	2.58 x 1.25 x 0.763 in
ORP4-80E1A0	5.0 – 13.8 V	0.8375 – 5.0 V	80 A	400 W	2.58 x 1.25 x 0.648 in (Horizontal)
VRP3-90E2AC	9.0 – 13.8 V	0.600 – 1.8 V	90 A	162 W	2.05 x 1.10 x 0.800 in
VRNF-C0G1A0*	8.0 – 14.0 V	0.600 – 2.0 V	120 A	240 W	2.60 x 1.10 x 0.620 in

* Power Management Bus

NON-ISOLATED DC-DC CONVERTERS

SLIN Series



Specifications

- Wide Input Voltage Ranges 2.4 - 14 V
- Various Output Current Levels 2 - 50 A
- Various Max Output Powers 10 - 100 W

Design Features

- Remote on/off and remote sense
- Adjustable output voltage
- OCP / SCP / OVP
- Output voltage sequencing option
- Tunable Loop™



Description

The SLIN Series power modules are non-isolated DC-DC converters that can deliver up to 30 A of output current. These modules operate over a wide range of input voltage ($V_{IN} = 2.4 \text{ VDC} - 14 \text{ VDC}$) and provide a precisely regulated output voltage from 0.59 VDC to 5.5 VDC, programmable via an external resistor. A new feature, the Tunable Loop™, allows the user to optimize the dynamic response of the converter to match the load with reduced amount of output capacitance leading to savings on cost and PCB area.

Part Number Active High	Part Number Active Low	Input Voltage	Output Voltage	Max Output Current	Max Output Power	Sequencing Option	Package (L x W x H)
	SLIN-02E2AL	3.0 – 14 V	0.60 – 5.5 V	2 A	10 W	N	0.48 x 0.48 x 0.246 in
SLIN-03E1A0	SLIN-03E1AL	4.5 – 14 V	0.59 – 5.5 V	3 A	15 W	Y	0.48 x 0.48 x 0.246 in
SLIN-03E2A0	SLIN-03E2AL	4.5 – 14 V	0.59 – 5.5 V	3 A	15 W	N	0.48 x 0.48 x 0.246 in
SLIN-03F1A0	SLIN-03F1AL	2.4 – 5.5 V	0.60 – 3.63 V	3 A	10 W	Y	0.48 x 0.48 x 0.246 in
SLIN-03F2A0	SLIN-03F2AL	2.4 – 5.5 V	0.60 – 3.63 V	3 A	10 W	N	0.48 x 0.48 x 0.246 in
SLIN-06E1A0	SLIN-06E1AL	4.5 – 14 V	0.59 – 5.5 V	6 A	30 W	Y	0.48 x 0.48 x 0.285 in
SLIN-06E2A0	SLIN-06E2AL	4.5 – 14 V	0.59 – 5.5 V	6 A	30 W	N	0.48 x 0.48 x 0.285 in
SLIN-06F1A0	SLIN-06F1AL	2.4 – 5.5 V	0.60 – 3.63 V	6 A	20 W	Y	0.48 x 0.48 x 0.285 in
SLIN-06F2A0	SLIN-06F2AL	2.4 – 5.5 V	0.60 – 3.63 V	6 A	20 W	N	0.48 x 0.48 x 0.285 in
SLIN-12E1A0	SLIN-12E1AL	4.5 – 14 V	0.69 – 5.50 V	12 A	60 W	Y	0.8 x 0.45 x 0.334 in
SLIN-12F1A0	SLIN-12F1AL	2.4 – 5.5 V	0.60 – 3.63 V	12 A	40 W	Y	0.8 x 0.45 x 0.334 in
SLIN-12F2A0	SLIN-12F2AL	2.4 – 5.5 V	0.60 – 3.63 V	12 A	40 W	N	0.8 x 0.45 x 0.334 in
SLIN-20E1A0	SLIN-20E1AL	4.5 – 14 V	0.69 – 5.5 V	20 A	100 W	Y	1.3 x 0.53 x 0.334 in
SLIN-20F1A0	SLIN-20F1AL	2.4 – 5.5 V	0.60 – 3.63 V	20 A	66 W	Y	1.3 x 0.53 x 0.334 in
	SLIN-30E1AL	6.0 – 14 V	0.80 – 3.63 V	30 A	100 W	Y	1.3 x 0.53 x 0.390 in
	SLIN-50E1AL	4.5 – 14 V	0.70 – 2.00 V	50 A	90 W	Y	1.3 x 0.90 x 0.393 in

SLAN Series



Specifications

- Wide Input Voltage Ranges 3.0 - 14.4 V
- Various Output Current Levels 3 - 40 A
- Various Max Output Powers 16.5 - 110 W

Design Features

- Remote on/off and remote sense
- Adjustable output voltage
- OCP / SCP / OVP
- Tunable Loop™



Part Number Active High	Part Number Active Low	Input Voltage	Output Voltage	Max Output Current	Max Output Power	Sequencing Option	Package (L x W x H)
SLAN-03D2A0	SLAN-03D2AL	3.0 – 14.4 V	0.60 – 5.5 V	3 A	16.5 W	N	0.48 x 0.48 x 0.246 in
SLAN-06D2A0	SLAN-06D2AL	3.0 – 14.4 V	0.60 – 5.5 V	6 A	33 W	N	0.48 x 0.48 x 0.290 in
SLAN-12D2A0	SLAN-12D2AL	3.0 – 14.4 V	0.60 – 5.5 V	12 A	66 W	N	0.48 x 0.48 x 0.335 in
SLAN-20D1A0	SLAN-20D1AL	3.0 – 14.4 V	0.60 – 5.5 V	20 A	110 W	Y	0.80 x 0.45 x 0.334 in
SLAN-40E1A0	SLAN-40E1AL	4.5 – 14.4 V	0.60 – 2.0 V	40 A	80 W	Y	1.30 x 0.53 x 0.429 in

SLDN Series



Specifications

- Wide Input Voltage Ranges 3.0 - 14.4 V
- Various Output Current Levels 3 - 40 A
- Various Max Output Powers 16.5 - 110 W
- Power Management Bus

Design Features

- Remote on/off and remote sense
- Adjustable output voltage
- OCP / SCP / OVP
- Output voltage sequencing option
- Tunable Loop™



Part Number Active High	Part Number Active Low	Input Voltage	Output Voltage *	Max Output Current	Max Output Power	Sequencing Option	Package (L x W x H)
SLDN-03D1A0	SLDN-03D1AL	3.0 – 14.4 V	0.60 – 5.5 V	3 A	16.5 W	Y	0.48 x 0.48 x 0.246 in
SLDN-06D1A0	SLDN-06D1AL	3.0 – 14.4 V	0.60 – 5.5 V	6 A	33 W	Y	0.48 x 0.48 x 0.290 in
SLDN-12D1A0	SLDN-12D1AL	3.0 – 14.4 V	0.60 – 5.5 V	12 A	60 W	Y	0.48 x 0.48 x 0.335 in
SLDN-20D1A0	SLDN-20D1AL	3.0 – 14.4 V	0.60 – 5.5 V	20 A	110 W	Y	0.80 x 0.45 x 0.334 in
SLDN-40E1A0	SLDN-40E1AL	4.5 – 14.4 V	0.60 – 2.0 V	40 A	80 W	Y	1.30 x 0.53 x 0.429 in

* Output voltage can be trimmed down to 0.45 V using Power Management Bus.

VRM Series

Specifications

- Intel Specification Compliant
- Wide Inputs Available
- VID programmable output
- Current Levels Up to 205 A

Design Features

- Remote on/off and remote sense
- Current monitor option
- OCP / SCP / OVP
- Thermal warning signal option
- Power good signal
- Input under voltage lockout



Description

Bel provides a wide variety of both custom and standard voltage regulator modules (VRMs) to power the latest microprocessors and memory. Our latest offering of VRM12 modules are available in both vertical through hole and horizontal surface mount packages. Bel's product offering covers Intel VRM11.1 thru VRM13 applications as well as custom VRM's. All VRM12.5 and VRM13 modules support Power Management Bus.

VRM Spec.	Part Number	Input Voltage	Output Voltage	Max Output Current	Max Output Power	Connector	Package (L x W x H)
VRM11.1	VRP4-C2E1A0	6.5 – 13.2 V	0.5 – 1.6 V	120 A	192 W	PTH	2.40 x 1.10 x 0.80 in
VRM11.1	VRP4-C0E1A0	6.5 – 13.2 V	0.5 – 1.6 V	100 A	160 W	PTH	2.40 x 1.10 x 0.80 in
VRM11.1	VRP4-C2E2A0	10.2 – 13.8 V	0.5 – 1.6 V	120 A	192 W	PTH	2.40 x 0.78 x 0.74 in
VRM12	VRNE-60ED10	6.5 – 13.8 V	0.6 – 1.52 V (Dual)	60 A / 15 A	60 W	PTH	2.50 x 1.30 x 0.27 in
VRM12	SRNE-C6ED2E	6.5 – 13.8 V	0.6 – 1.52 V (Dual)	165 A / 25 A	200 W	SMT	3.59 x 0.78 x 1.30 in
VRM12.5	VRNE-40E1A0	7.5 – 13.5 V	0.5 – 2.3 V	40 A	92 W	PTH	2.00 x 0.75 x 1.10 in
VRM12.5	VRNE-60E1A0	7.5 – 13.5 V	0.5 – 2.3 V	60 A	138 W	PTH	2.60 x 0.75 x 1.10 in
VRM13	VRNF-72GD10	8.0 – 14.0 V	0.5 – 1.85 V (Dual)	86 A / 15 A	175 W	PTH	2.67 x 0.62 x 1.10 in
VRM13	VRNF-C4G1A0	8.0 – 14.0 V	0.5 – 1.85 V	205 A	380 W	PTH	3.50 x 0.62 x 1.40 in
VRM13	VRNF-20G1A0	8.0 – 14.0 V	0.5 – 1.26 V	25 A	30 W	PTH	1.20 x 0.51 x 1.10 in

SRBP Series

Specifications

- Input Voltage Range 7.5 - 14 V
- Configurable Output - single or dual
- Max Output Power Up to 200 W

Design Features

- Step Down Digital DC/DC Converter
- Configurable via Power Management Bus
- Parallelable up to 4 modules



Description

The SRBP-80A2P0 is a two phase non-isolated step down digital DC/DC converter providing up to 80 A of output current. The module can also be configured for two separate outputs each providing up to 40 A of output current. Up to 4 modules can be connected in parallel with active current sharing to reach 320 A. The output voltage range is from 0.6 VDC to 5.2 VDC over a wide range of input voltage from 7.5 VDC to 14 VDC. The module is provided in a quite small dimension SMD package of 1.0 x 0.5 x 0.48 in (L x W x H).

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SRBP-80A2P0	7.5 - 14 V	0.6 - 5.2 V	80 A	200 W	1.00 x 0.50 x 0.48 in

SRPE Series

Specifications

- Max Input Voltage 4.5 - 13.2 V
- Max Output Current Up to 50 A
- Max Output Power Up to 100 W

Design Features

- Vertical Surface Mount Configuration
- Compensation-Less COT Control
- Under-Voltage Lockout
- Remote On/Off
- Over Current and Short Circuit Protection



Description

SRPE Series are non-isolated DC-DC converters using a vertical SMT package. These converters are available in a range of output voltages from 0.6 VDC to 5.5 VDC over a wide range of input voltage (4.5 - 13.2 VDC). SRPE Series covers all current needs from 1.5 A to 50 A.

Part Number Active High	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SRPE-02E1A0	5.5 - 13.2 V	0.6 - 5.5 V	1.5 A	8 W	0.41 x 0.50 x 0.380 in
SRPE-03E1A0	5.5 - 13.2 V	0.6 - 5.5 V	3 A	16.5 W	0.41 x 0.65 x 0.339 in
SRPE-06E1A0	5.5 - 13.2 V	0.6 - 5.5 V	6 A	33 W	0.41 x 0.65 x 0.339 in
SRPE-12E1A0	5.5 - 13.2 V	0.6 - 5.5 V	12 A	66 W	0.41 x 0.65 x 0.339 in
SRPE-20E1A0	4.5 - 13.2 V	0.6 - 2.0 V	20 A	40 W	1.20 x 0.65 x 0.430 in
SRPE-30E1A0	4.5 - 13.2 V	0.6 - 2.0 V	30 A	60 W	1.20 x 0.65 x 0.590 in
SRPE-50E1A0	7.5 - 13.2 V	0.6 - 2.0 V	50 A	100 W	1.45 x 0.95 x 0.620 in

SRBH Series

Specifications

- Input Voltage 8 - 36 VDC
- Output Voltage 2.5 - 5 VDC @ 6 A
- Output Power up to 30 W
- High Efficiency & High Power Density

Design Features

- OCP / SCP
- Remote on/off
- Input under voltage lockout
- Excellent Thermal Performance



Description

The SRBH-06H1A0 is part of the low cost non-isolated DC-DC power converter series providing up to 6 A output current. The output is closely regulated and the efficiency of 3.3 VDC output is typically 89% at full load. Typical features include remote on/off, input under voltage lockout, over current protection and short circuit protection.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SRBH-03Hxx0	9 - 36 V	1.2 - 5.0 V	3 A	15 W	0.885 x 0.512 x 0.32 in
SRBH-06H1A0	8 - 36 V	2.5 - 5.0 V	6 A	30 W	0.880 x 0.830 x 0.43 in
SRBH-06H1A1	8 - 36 V	3.3 - 5.0 V	6 A	30 W	0.885 X 0.512 X 0.32 in

NON-ISOLATED DC-DC CONVERTERS

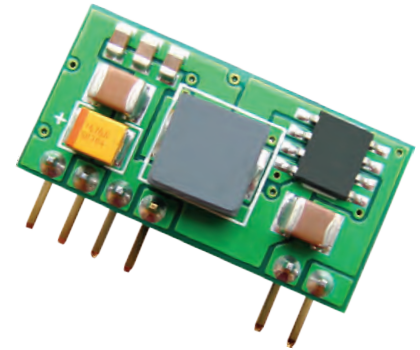
Bobcat Series

Specifications

- Industry standard package
- Max Input Voltage 2.4 – 30 V
- Max Output Current Up to 30 A
- Max Output Power Up to 90 W

Design Features

- Remote on/off
- OCP / SCP / OVP
- Output voltage sequencing option
- SMT Option



Description

The xRBA and xRBC series are non-isolated converters that deliver up to 30 A of output current with full load efficiency of 92% at 5 V output. These converters are available in either vertical mount or surface mount packages and are fully compatible with industry standards.

xRBA Series

Part Number Surface Mount	Part Number Vertical Mount	Input Voltage	Output Voltage	Max Output Current	Max Output Power	Sequencing Option	Package (L x W x H) Surface Mount	Package (L x W x H) Vertical Mount
SRBA-03F1Ay	VRBA-03F1Ay	2.4 – 5.5 V	0.75 – 3.63 V	3 A	10 W	N	0.8 x 0.45 x 0.270 in	1.0 x 0.5 x 0.270 in
SRBA-03E1Ay	VRBA-03E1Ay	4.5 – 14 V	0.75 – 5.0 V	3 A	15 W	N	0.8 x 0.45 x 0.251 in	1.0 x 0.5 x 0.243 in
SRBA-03A1Ay	VRBA-03A1Ay	8.3 – 14 V	0.75 – 5.0 V	3 A	15 W	N	0.8 x 0.45 x 0.251 in	1.0 x 0.5 x 0.243 in
SRBA-06FxAy	VRBA-06FxAy	2.4 – 5.5 V	0.75 – 3.63 V	6 A	20 W	Y	0.8 x 0.45 x 0.251 in	1.0 x 0.5 x 0.243 in
SRBA-06ExAy	VRBA-06ExAy	4.5 – 14 V	0.75 – 5.0 V	6 A	30 W	Y	0.8 x 0.45 x 0.251 in	1.0 x 0.5 x 0.243 in
SRBA-06AxAy	VRBA-06AxAy	8.3 – 14 V	0.75 – 5.0 V	6 A	30 W	Y	0.8 x 0.45 x 0.251 in	1.0 x 0.5 x 0.243 in

*x = 1 & 2. 1 means without sequencing, 2 means with sequencing.
y = 0 & L. 0 means active high enable, L means active low enable.*

xRBC Series

Part Number Surface Mount	Part Number Vertical Mount	Input Voltage	Output Voltage	Max Output Current	Max Output Power	Sequencing Option	Package (L x W x H) Surface Mount	Package (L x W x H) Vertical Mount
SRBC-10ExAy	VRBC-10ExAy	4.5 – 14 V	0.75 – 3.63 V	10 A	36 W	Y	1.3 x 0.53 x 0.315 in	2.0 x 0.5 x 0.32 in
SRBC-10FxAy	VRBC-10FxAy	2.4 – 5.5 V	0.75 – 3.63 V	10 A	36 W	Y	1.3 x 0.53 x 0.315 in	2.0 x 0.5 x 0.32 in
SRBC-10AxAy	VRBC-10AxAy	8.3 – 14 V	0.75 – 5.00 V	10 A	50 W	Y	1.3 x 0.53 x 0.315 in	2.0 x 0.5 x 0.32 in
SRBC-16E3AL		4.5 – 14 V	0.75 – 3.30 V	16 A	53 W	Y	1.3 x 0.53 x 0.315 in	
SRBC-16ExAy	VRBC-16ExAy	4.5 – 14 V	0.75 – 3.63 V	16 A	58 W	Y	1.3 x 0.53 x 0.315 in	2.0 x 0.5 x 0.32 in
SRBC-16E4AL		4.5 – 14 V	0.75 – 3.63 V	16 A	58 W	Y	1.3 x 0.53 x 0.315 in	
SRBC-16FxAy	VRBC-16FxAy	2.4 – 5.5 V	0.75 – 3.63 V	16 A	58 W	Y	1.3 x 0.53 x 0.315 in	2.0 x 0.5 x 0.32 in
	VRBC-70R1A0	20 – 30 V	5.00 – 15.0 V	10 A	70 W	N		2.0 x 0.5 x 0.32 in
SRBC-16AxAy	VRBC-16AxAy	8.3 – 14 V	0.75 – 5.00 V	16 A	80 W	Y	1.3 x 0.53 x 0.315 in	2.0 x 0.5 x 0.32 in
SRBC-30E2AL		6.0 – 14 V	0.80 – 3.63 V	25 – 30 A	75 – 90 W	Y	1.3 x 0.53 x 0.358 in	
SRBC-30E6AL		6.0 – 14 V	0.80 – 1.40 V	30 A	42 W	Y	1.3 x 0.53 x 0.358 in	

*x = 1 & 2. 1 means without sequencing, 2 means with sequencing.
y = 0 & L. 0 means active high enable, L means active low enable.*

Power Block Series

Specifications

- Horizontal Package
- Max Input Voltage up to 13.2 V
- Max Output Current up to 140 A
- Max Output Power up to 462 W

Design Features

- High Power in Small Footprint
- Pick and Placable
- Easily Modified



Description

The Power Block Series are non-isolated DC to DC converters. The modules use SMD package. This converter is available in a range of output voltages from 0.6 VDC to 5 VDC over a wide range of input voltage.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SRBL-30A1A0	7 – 13.2 V	0.8 – 5.0 V	35 A	175 W	1.00 x 0.50 x 0.48 in
SRBL-60A1A0	7 – 13.2 V	0.7 – 3.3 V	60 A	198 W	1.00 x 0.50 x 0.48 in
SRBL-C0A1A0	7 – 13.2 V	0.6 – 3.3 V	100 A	330 W	1.00 x 0.50 x 0.48 in
SRBL-C4A1A0	7 – 13.2 V	0.6 – 3.3 V	140 A	462 W	1.18 x 0.47 x 0.48 in



On-Board Power System Manager

Specifications

- SMD package
- 44 Pin TQFP
- 64 Pin TQFP
- 100 Pin TQFP
- Max Input Voltage 3.3 V

Design Features

- Digital Signal Processor (DSP) Based with Bel Firmware
- Power Up and Power Down Sequencing Logic
- Fault Detection and Reporting
- I²C serial interface options
- Voltage Margining via Closed Loop Trim
- Configurable through serial interface
- Customizable through software
- Programmed parameters saved in non volatile memory
- Intelligent configuration capability



Description

This on-board power system controller provides a cost effective high performance solution for controlling, monitoring, and sequencing multiple Point of Load (POL) converters on a system board.

Part Number	Input Voltage	Control & Monitor POL Number	Monitor VRM Number	Monitor Analog Input Number	Package (L x W x H)
TRKF-44D62ER	3.3 V	4	0	2	0.472 x 0.472 x 0.043 in
TRKF-64D82ER	3.3 V	8	2	2	0.472 x 0.472 x 0.043 in
TRKF-10DC4ER	3.3 V	12	4	3	0.551 x 0.551 x 0.043 in



Power Over Ethernet Series

Specifications

- Input Voltage 24 / 48 VDC
- Output Voltage 54 VDC @ 10 A
- Output Power up to 550 W

Design Features

- Fixed Frequency
- Input Under / Over Voltage Lockout
- OVP / OTP



Description

Our PoE modules are general purpose solution for PoE and could cover a large number of applications such as powering components using data lines, IP cameras, telephones, sensors and radios; instruments and controllers in industry; wireless access points and digital clocks.

Quarter Brick

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RQB-C5U54x	18 – 75 V	54 V	3.0 A	162 W	2.30 x 1.45 x 0.59 in

Half Brick

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RHB-F5S53x	38 – 62 V	54 V	10.2 A	550 W	2.40 x 2.28 x 0.50 in



Regulated Bus Converter Series

Specifications

- Footprint 1/16, 1/8 & 1/4 Brick
- Max Input Voltage 36 – 75 V
- Max Output Current up to 125 A
- Max Output Power Up to 1300 W
- Parallel Operation with Droop
- Industry Standard Pin Out

Design Features

- Input Under Voltage Lockout
- Input Over Voltage Shutdown
- OCP / SCP / OVP
- Over Temperature Protection
- Remote On/Off
- Excellent Thermal Performance



Description

Bel's family of Regulated Bus Converters is designed for Intermediate Bus Architecture applications. In these applications the Bus Converter isolates and steps down a primary distribution bus (usually 48 V) to a lower voltage bus (typically 9.6 – 12 V). This intermediate bus is used to power downstream non-isolated point-of-load converters that generate the voltages required by the various semiconductor devices in the system. These converters are designed to be low cost, high density and provide typical full load efficiency of 96% or higher.

1/16 Brick Converter

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Turns Ratio	Package (L x W x H)
0RSB-D5S10L	45 – 56 V	10.6 V	30 A	310 W	4:1	1.3 x 0.9 x 0.57 in

1/8 Brick Converter

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Turns Ratio	Package (L x W x H)
0RRE-32S10L	38 – 55 V	8.2 V	30 A	240 W	4:1	2.3 x 0.896 x 0.43 in
0RCY-F0S10B	45 – 56 V	10.2 V	49 A	500 W	4:1	2.3 x 0.900 x 0.57 in

1/4 Brick Converter

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Turns Ratio	Package (L x W x H)
0RQB-S0M11L	48.6 – 60 V	11.2 V	62.5 A	700 W	4:1	2.30 x 1.45 x 0.57 in
0RQB-E0M12B	45.6 – 50.4 V	12 V	70 A	840 W	4:1	2.30 x 1.45 x 0.57 in
0RQB-X0S11B	45 – 58 V	10.6 V	94.3 A	1000 W	4:1	2.30 x 1.45 x 0.57 in
0RQB-X3S11B	45 – 58.5 V	10.4 V	125 A	1300 W	4:1	2.30 x 1.45 x 0.57 in
0RQB-X5M12BG	48 – 60 V	12 V	125 A	1500 W	4:1	2.30 x 1.45 x 0.57 in
0RQP-X5M12BG*	48 – 60 V	12 V	125 A	1500 W	4:1	2.30 x 1.45 x 0.57 in

* Power Management Bus

1/16 Brick Isolated Converter Series

Specifications

- Industry Standard Package
- Max Input Voltage 18 – 75 V
- Max Output Current up to 25 A
- Max Output Power up to 100 W

Design Features

- Remote on/off
- OCP / SCP / OVP / OTP
- Under voltage lockout (UVLO)



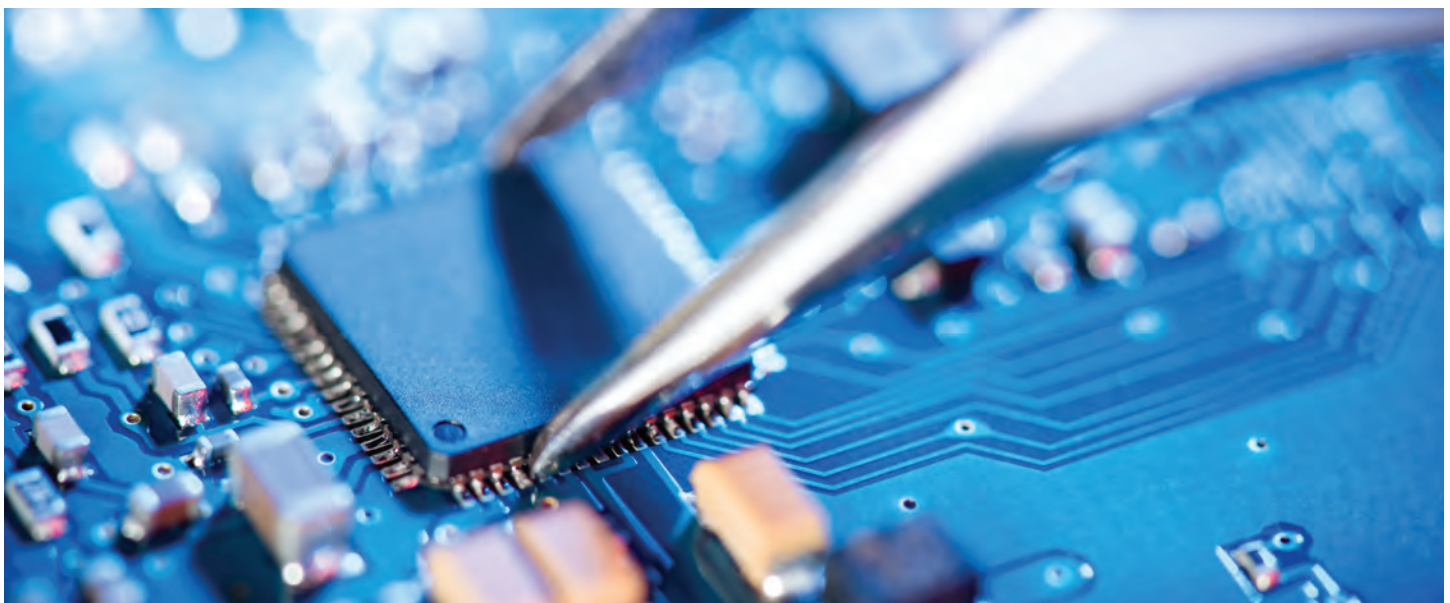
Description

1/16 Brick isolated converter series provide up to 60 W of output power. Various models operate from a nominal 48 V, nominal 24 V or an ultra-wide range 18 – 75 V source. Output pin locations are compatible with DOSA standard.

Part Number Surface Mount	Part Number Vertical Mount	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SRSB-40Uxxx	0RSB-40Uxxx	18 – 75 V	1.2 / 1.5 / 1.8 / 2.5 / 3.3 / 5 / 12 V	18 / 16 / 14 / 12 / 10 / 8 / 3.5 A	42 W	1.3 x 0.9 x 0.460 in
SRSB-50Txxx	0RSB-50Txxx	36 – 75 V	1.8 / 2.5 / 3.3 / 5 / 12 V	20 / 18 / 15 / 12 / 5 A	60 W	1.3 x 0.9 x 0.370 in
SRSB-50R080	0RSB-50R080	18 – 36 V	8 V	5 A	40 W	1.3 x 0.9 x 0.370 in
SRSB-80Txxx	0RSB-80Txxx	36 – 75 V	5 / 12 V	20 / 8.3 A	100 W	1.3 x 0.9 x 0.422 in

xxx = V20, V50, V80, 025, 033, 050, 120. All models above are Active High parts. Change the last letter to "L" to indicate Active Low.

Product Series	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SSQE Series	36 – 75 V	1.2 / 1.5 / 1.8 / 2.5 / 3.3 / 5 / 12 V	25 / 20 / 15 / 13 / 10 / 7 A	84 W	1.3 x 0.9 x 0.37 in



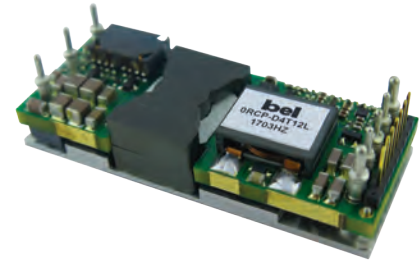
1/8 Brick Isolated Converter Series

Specifications

- Industry Standard package
- Max Input Voltage 18 – 75 V
- Max Output Current 5 A – 60 A
- Max Output Power 300 W

Design Features

- Remote on/off
- OCP / OVP / OTP
- Under voltage lockout (UVLO)
- High Power Density



Description

Bel's 1/8 Brick isolated converter series provide up to 300 W of output power from a nominal 48 V input and are designed to be highly efficient and low cost.

1/8 Brick Converters without Power Management Bus

Selected models operate from an ultra-wide range 18 – 75 V source.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RCB-60Txxx	36 – 75 V	1.2 V / 1.8 V / 2.5 V / 5.0 V	25 A / 25 A / 20 A / 10 A	50 W	2.30 x 0.896 x 0.374 in
0RCY-60Uxxx	18 – 75 V	3.3 V / 5.0 V / 12 V	15 A / 15 A / 7 A	84 W	2.30 x 0.896 x 0.490 in
0REB-80T12x	36 – 75 V	12 V	6.5 A	80 W	2.30 x 0.900 x 0.400 in
0RCY-80Rxxx	18 – 36 V	1.8 V / 12 V	30 A / 10 A	120 W	2.30 x 0.900 x 0.500 in
0RCY-85Txxx	36 – 75 V	1.5 V / 2.5 V / 12 V	30 A / 25 A / 8.33 A	100 W	2.30 x 0.896 x 0.395 in
0RCY-C4T03x	36 – 75 V	3.3 V	40 A	132 W	2.30 x 0.900 x 0.370 in
0RCY-C2Txxx	36 – 75 V	1.2 V / 3.3 V / 12 V	50 A / 30 A / 12 A	144 W	2.30 x 0.900 x 0.370 in
0REB-C0Txxx	36 – 75 V	3.3 V / 5.0 V	25 A / 20 A	100 W	2.30 x 0.900 x 0.334 in
0RCY-D4T03L	36 – 75 V	3.3 V	60 A	198 W	2.30 x 0.900 x 0.430 in
0RCY-D4T12x	36 – 75 V	12 V	20 A	240 W	2.30 x 0.900 x 0.500 in
0RCY-T0T12x	36 – 75 V	12 V	25 A	300 W	2.30 x 0.900 x 0.500 in

xxx = V20, V50, V80, 025, 033, 050, 085, 120. All models above are Active High parts. Change the last letter to "L" to indicate Active Low.

Product Series	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SQE Series	36 – 75 V	1.2 / 1.5 / 1.8 / 2.5 / 3.3 / 5 / 6 / 12 V	50 / 40 / 30 / 20 / 17 / 10 A	240 W	2.30 x 0.90 x 0.37 (0.41) in

1/8 Brick Converters with Power Management Bus

Power Management Bus digital interface enables users to configure all module operations as well as monitor the input and output parameters.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RCP-D4T12x	36 – 75 V	9 – 12.6 V *	20 A	240 W	2.30 x 0.90 x 0.50 in

* Trim by Power Management Bus and Resistor

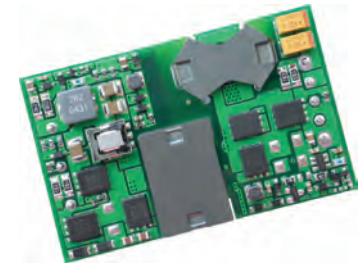
1/4 Brick Isolated Converter Series

Specifications

- Industry Standard package
- Max Input Voltage 18 – 75 V
- Max Output Current up to 100 A
- Max Output Power up to 600 W

Design Features

- Remote on/off
- OCP / OVP / OTP
- Under voltage lockout (UVLO)



Description

Bel's 1/4 Brick isolated converter series provide up to 650 W of output power from a nominal 48 V input and are designed to be highly efficient and low cost.

1/4 Brick Converters without Power Management Bus

Selected models operate from an ultra-wide range 14 – 75 V source.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RQ1-T0T120	36 – 75 V	12 V	25 A	300 W	2.30 x 1.45 x 0.500 in
0RQB-72TV20	36 – 75 V	1.2 V	60 A	72 W	2.30 x 1.45 x 0.450 in
0RQB-C0Uxxx	18 – 75 V	2.5 / 3.3 / 5.0 / 12 V	30 / 30 / 30 / 30 / 25 / 20 / 8.35 A	100 W	2.30 x 1.45 x 0.395 in
0RQB-C5Txxx	36 – 75 V	1.2 / 1.5 / 1.8 / 2.5 / 12 V	50 / 50 / 50 / 50 / 12 A	144 W	2.30 x 1.45 x 0.395 in
0RQB-C5Uxxx	18 – 75 V	5 / 12 / 15 V	30 / 12 / 8 A	150 W	2.30 x 1.45 x 0.500 in
0RQB-C8TV20	36 – 75 V	1.2 V	100 A	120 W	2.30 x 1.45 x 0.500 in
0RQB-D0Txxx	36 – 75 V	12 / 28 V	18 / 7 A	216 W	2.30 x 1.45 x 0.500 in
0RQB-Q2T060	36 – 75 V	6.5 V	60 A	390 W	2.30 x 1.45 x 0.500 in
0RQB-T0R120	18 – 36 V	12 V	20 A	240 W	2.30 x 1.45 x 0.500 in
0RQB-T0T120	36 – 75 V	12 V	25 A	300 W	2.30 x 1.45 x 0.500 in
0RX3-D2T120	36 – 75 V	12 V	18 A	216 W	2.28 x 1.45 x 0.500 in
0RQB-Q2T096	36 – 75 V	9.6 V	40 A	384 W	2.30 x 1.45 x 0.500 in
0RQ2-Q2T12B	36 – 75 V	12 V	35 A	420 W	2.30 x 1.45 x 0.570 in
0RQ1-H0T12x	36 – 75 V	12 V	50 A	600 W	2.30 x 1.45 x 0.570 in

xxx= V20, V50, V80, 033, 050, 070, 120, 150, 240, 280. All models without "L" suffix above are Active High parts. Change the last letter to "L" to indicate Active Low.

Product Series	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
QME48 Series	36 – 75 V	1.5 / 1.8 / 2.5 / 5 / 5.7 / 12 V	40 / 35 / 30 / 20 A	420 W	2.30 x 1.45 x 0.48 (0.43) in

1/4 Brick Converters with Power Management Bus

Power Management Bus digital interface enables users to configure all module operations as well as monitor the input and output parameters.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RQP-Q2T12x	36 – 75 V	9 – 12.6 V *	35 A	420 W	2.30 x 1.45 x 0.550 in
0RQP-H5T12x	36 – 75 V	9 – 12.6 V *	54.2 A	650 W	2.30 x 1.45 x 0.550 in

* Trim by Power Management Bus and Resistor

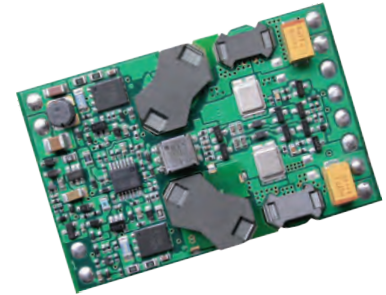
Dual Outputs Brick Converter Series

Specifications

- Industry Standard package
- Max Input Voltage 36 – 75 V
- Dual Outputs
- Max Output Power 35 W – 78 W

Design Features

- Remote on/off
- OCP / OVP / OTP / SCP
- Under voltage lockout (UVLO)



Description

The Dual Outputs Brick Converter Series are isolated converters that operate from a nominal 48 V source. They provide up to 77 W of output power with two output voltages. These converters are provided in a compact, through-hole 1/4 brick package that is easy to use and provides good thermal performance.

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RXC-75TD30	36 – 75 V	3.3 V / 1.8 V	5 A / 15 A	77 W	2.30 x 1.45 x 0.427 in
0RXW-65TD10	36 – 75 V	+12 V / -12 V	2.7 A / 2.7 A	65 W	2.22 x 1.45 x 0.460 in
SRXA-50TD10	36 – 72 V	3.0 V / 2.0 V	10 A / 10 A	62 W	2.30 x 1.50 x 0.480 in
SRXA-60TD10	36 – 72 V	4.5 V / 3.0 V	10 A / 10 A	60 W	2.30 x 1.50 x 0.480 in

All models above are Active High parts. Change the last letter to "L" to indicate Active Low.

Quad Output Brick Converter Series

Specifications

- Max Input Voltage 10– 13.2 V
- Four Outputs
- Max Output Power 40 W

Design Features

- Programmable voltage control
- Digital frequency selection
- Over load protection



Description

It operates from a nominal 12 V source and provide up to 40 W of output power. It is designed to be highly efficient and is provided in an special package

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
SRXA-40AQ1L	10.8 – 13.2 V	1.2 V / 2.5 V / 3.3 V / - 12 V	6A / 1.5 A / 1.5 A / 2 A	40 W	1.772 x 0.90 x 0.47 in

The model above is Active Low part.

Railway Product Series

Specifications

- DOSA Approved Footprint
- Railway Wide Input Voltage Range
- Wide Operating Temperature Range -40 to 105°C
- Fully Isolated 2250 V

Design Features

- Remote On / Off
- Over Temperature Protection
- Output Over Current Protection (Non-latching)
- Compliant to ICP-9592B



Description

Railway product line covers a large number of applications such as powering components in programmable logic control cards, in sensors, multimedia cards and wireless connection cards. Modules meet railway extended voltage requirements.

Input Voltage 14.5 - 154 V

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RQB-15Y05x	14.5-154 V	5.0 V	3 A	15 W	2.30 x 1.10 x 0.425 in
0RQB-30Y05x	14.5-154 V	5.0 V	6 A	30 W	2.30 x 1.45 x 0.59 in
0RQB-50Y05x	14.5-154 V	5.0 V	10 A	50 W	2.30 x 1.45 x 0.59 in
0RQB-30Y12x	14.5-154 V	12 V	2.5 A	30 W	2.30 x 1.45 x 0.59 in
0RQB-50Y12x	14.5-154 V	12 V	4.2 A	50 W	2.30 x 1.45 x 0.59 in

Input Voltage 43 - 160 V

Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
0RQB-D0W12x	50-154 V	12 V	17 A	200 W	2.45 x 1.45 x 0.59 in
0RQB-D0W12M	66-154 V	12 V	17 A	200 W	2.45 x 1.45 x 0.67 in
0RQB-C5W24L	50-160 V	24 V	6 A	144 W	2.30 x 1.45 x 0.50 in
0RQ1-C5W24M	66-154 V	24 V	6.25 A	150 W	2.45 x 1.45 x 0.67 in
0RQB-C5W54L	43-154 V	54 V	3 A	162 W	2.45 x 1.45 x 0.59 in



Input Filters

Specifications

- Max Input Voltage 100 V
- Max Output Current 20 A
- Operating Temperature Range
-40 to 85 °C

Design Features

- Through hole and surface mount
- Differential LC-filter stage
- Low profile



Description

The F and FC Series of input filters are provisioned with a differential LC-filter stage, which guarantees compliance with conducted noise standards across the frequency range from 150 kHz to 30 MHz, including fundamental switching frequency and its harmonics. Test results show headroom of 15-20 dB for conducted noise quasi-peak levels, in relation to Class B requirements.

Part Number	Input Voltage	Max Current	Board Mount	Dimensions
F2410-G	0 - 45 V	10 A	Mount SMT	1.00 x 0.750 x 0.26 in
F4804A-G	0 - 80 V	4 A	Mount SMT	1.20 x 0.815 x 0.38 in
F4810-G	0 - 80 V	10 A	Mount SMT	1.20 x 0.815 x 0.38 in
FC100V5A-G	0 - 100 V	5 A	Board THT	1.00 x 1.00 x 0.40 in
FC100V6A-G	0 - 100 V	6 A	Board THT	1.00 x 1.00 x 0.40 in
FC100V10A-G	0 - 100 V	10 A	Board THT	2.00 x 1.00 x 0.44 in
FC100V20A	0 - 100 V	20 A	Board THT	2.05 x 1.65 x 0.46 in



Special Package Isolated DC-DC Converters

Specifications

- Industry Standard package
- Max Input Voltage 72 V
- Max Output Power 20 W

Design Features

- Remote on/off
- OCP / OVP / OTP
- Under voltage lockout (UVLO)



Description

Some products have special package which are used in various places. They are isolated DC to DC converters. They are designed to be highly efficient.

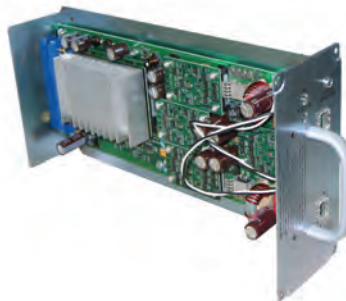
Part Number	Input Voltage	Nominal Output Voltage	Max Output Current	Max Output Power	Package (L x W x H)
ORLP-07R033	16 – 36 V	3.3 V	2.5 A	7 W	1.1 x 0.96 x 0.335 in
ORX3-20AD10	10 – 14 V	-25 V / -60 V	0.8 A / 0.3 A	20 W	2.0 x 1.60 x 0.370 in
ORXA-18U033	19.2 – 72 V	3.3 V	5 A	16.5 W	2.0 x 2.00 x 0.500 in

All models above are Active Low parts.

Custom Design Capabilities

Although we stock hundreds of standard products, there are specific applications that will always require that custom design. Bel Power Solutions is no stranger to customer specific designs, in fact for the past 50 years we have been doing just that, designing and manufacturing custom electromechanical assemblies.

Design and Construction: Because we pride ourselves on listening to what our customers say, we at Bel Power Solutions have always been able to develop innovative, quality products to meet changing requirements. Our success has been built by continuously addressing all major concerns such as RoHS, flammability, voltage breakdown, high temperature materials, as well as design criteria. Our willingness to change and quickly modify a standard product is what set's us apart!



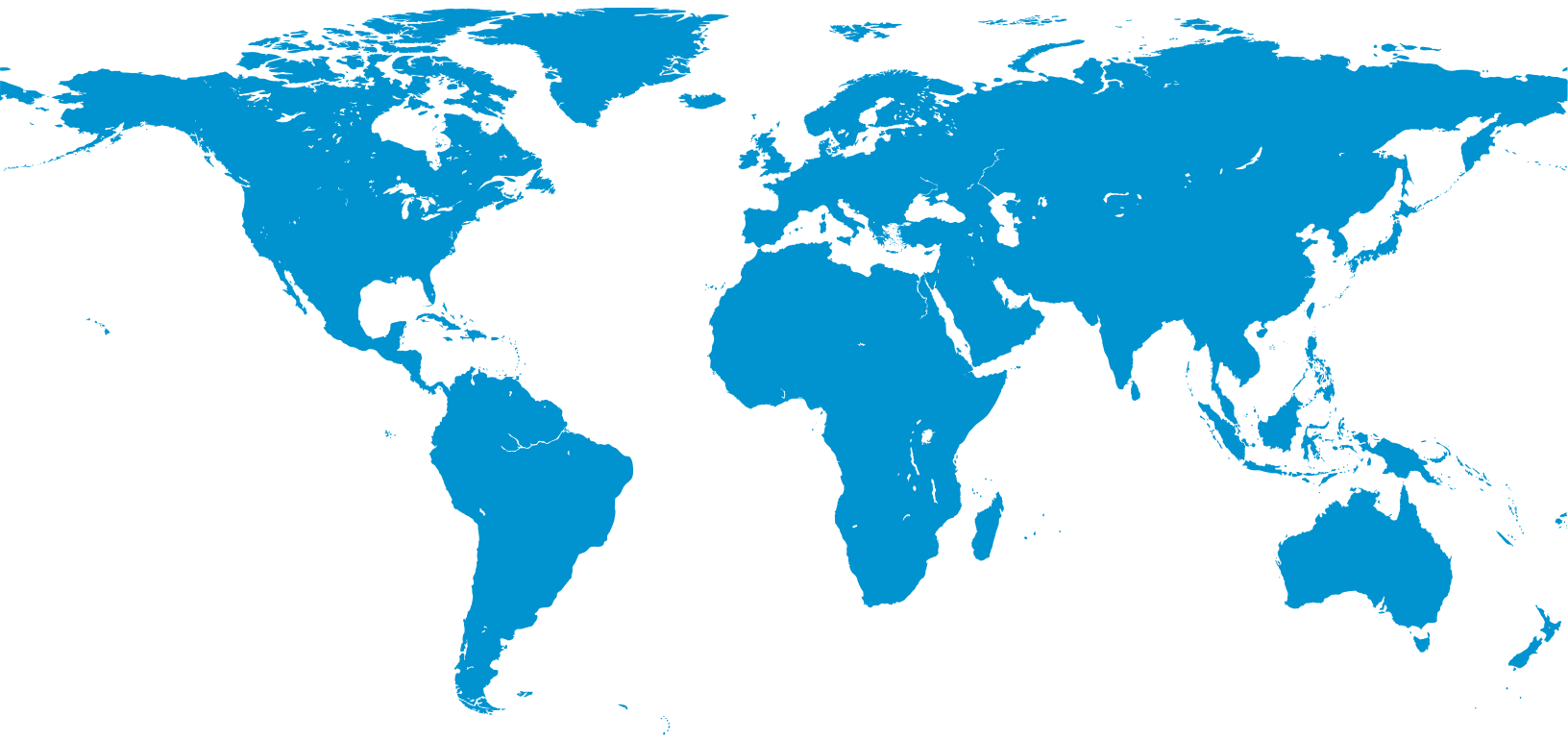
Bel Power Solutions continues to develop new isolated and non-isolated DC-DC converters in a wide variety of packages for a broad array of applications. Please call or e-mail us if you don't see a product that meets your specific needs. Contact us online at techhelp@belf.com.



About Bel Power Solutions

Bel Power Solutions & Protection offers world-class AC-DC and DC-DC power conversion products, value-add solutions, complete box-build solutions and contract manufacturing services, along with a complete portfolio of Electronic Circuit Protection devices. Bel is a market leader in railway with Melcher™ brand products and technology leaders in the development of high-efficiency and high power density front-end products. We support global customers and local markets with strategically located manufacturing and R&D facilities around the world.

Applications of our power conversion devices range from board-mount power to system-level architectures for servers, storage, networking, industrial and telecommunications industries.



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