



KAMAKA

Electronic Bauelemente Vertriebs GmbH

Power Management

AC/DC & DC/DC Converters

Electric Vehicle Chargers

Energy Harvesting Products

Hybrid Capacitors

Medical Converters

Supercapacitors

Railway Converters

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About Us

Since 1992, KAMAKA Electronic Bauelemente Vertriebs GmbH has acted as established distributor for well-known manufacturers. Customer satisfaction is our priority, hence, we do not only provide you with competent and qualified consultation but also with a reliable application support to all our products.

Our Divisions:

Industrial Solutions

Adapters
IoT Solutions
LCD-, TFT-Displays
Energy Harvesting PMIC's
Semiconductors

Power Supplies

AC/DC-, DC/DC-Converters
Supercaps
E-Charger-Modules
POL-Converters
Battery Management Systems

Hi-Rel Business

Aerospace & Defence
Avionics
High-Temperature Devices
Hybrid Capacitors
RAD Hard Space Products

Obsolescence Management

Anti-Counterfeiting Program
Device Refabrication
Long Lifetime Program
Long-Term Storage
Traceability guaranteed

Having more than 25 years of experience, our team, among others composed of application and development engineers as well as quality managers, assists you as trustworthy partner with profound expertise. Thus, our customers do not only profit from our broad knowledge but also from our longstanding customer support, competitive prices, innovative products and a partnership realizing customized needs.

Our high quality standards are proven by our **DIN EN 9120:2016** (technically equivalent to **AS 9120 A** and **SJAC 9120** for Aviation, Space and Defence organizations), **DIN EN ISO 9001:2015** certifications and our **DIN EN 61340-5-1** certified warehouse.

Moreover, we implemented our **Anti-Counterfeiting Program** with Traceability of the delivered products in 2010.

In order to ensure a constantly high quality of the supplied components, our **procurement and inspection criteria** include:

- Evaluation system of the manufacturer (Risk of the supply chain)
- Traceability of the delivered products
- Methods to investigate the originality of all delivery documents, good labeling and manufacturer logos
- Lot- and Date-Code verification
- Spot checks with microscope of all delivered obsolete components
- Original manufacturer CoC for Hi-Rel components

To Put It In A Nutshell- Why KAMAKA?

- Team of experts (application, development engineers and quality manager) with expertise
- Reliable longstanding support
- Experience: KAMAKA was founded in 1992
- Special Distributor for the Hi- Rel industry
- Obsolescence Solutions Provider
- Excellent reputation
- Certified quality standards
- Competitive prices
- Short lead times



AC/DC Power Supplies JETA Series

Power supplies with output power of 30W up to 5000W are performed upon specialized circuitry with a heat-conducting insulating compound, which allows their application in extreme operating conditions over a temperature range of -50°C to +85°C, humidity (95%) and other external factors (dust, vibration). Approvals EN60950/CE

The modules have a full range of security features in emergency situations (overheating, over-voltage at the output, overload and short circuit on the output). All this allows you to develop power systems requiring a combination of strict requirements in terms of weight and size parameters, and harsh conditions of exposure to external environmental and mechanical factors.

Power Watt	Model	I max	Uout	Effic.	Outputs	Dimensions mm	80VAC - 140VAC 1PH	100VAC - 242VAC 1PH	304VAC - 456VAC 3PH
60	JETA60	12A	5V...60V	84	1,2,3	101 x 51 x 18.3	X	X	
120	JETA120	24A	5V...60V	84	1,2,3	111 x 61 x 21	X	X	
300	JETA300	30A	12V...60V	84	1,2,3	134 x 84 x 27.4		X	
700	JETA700	60A	12V...60V	88	1,2	175 x 93 x 28.6		X	
1200	JETA1200*	80A	12V...60V	88	1	211 x 117 x 38.1		X	
2000	JETA2000	100A	15V...60V	88	1	250 x 140 x 38.1		X	
2000	JETA2000-400	100A	15V...60V	88	1	250 x 140 x 38.1			X
3000	JETA3000-400	125A	24V...60V	92	1	300 x 170 x 39.1			X
5000	JETA5000-400	200A	24V...60V	92	1	450 x 250 x 39.1			X

*all JETA1200 family power supplies are certified for military standard Mil-STD-461-F and MIL-STD-810-F, Test methods 514.5 / 516.5

AC/DC Power Supply (modules) TESAV Series (low profile)

VAC or VDC operating (36V, 230V or 115V) modules, which have an output power of 50W to 1000W, and a wide operating temperature range between -60...+125°C with an efficiency of up to 92%. These modules allow building ultra-low-profile electric power supply systems with an operating temperature level of more than 100°C. Approvals EN60950 /CE

Power Watt	Model	I max	Uout	Effic.	Outputs	Dimensions mm	25VAC - 53VAC 1PH	80VAC - 140VAC 1PH	176VAC - 242VAC 1PH
50	TESAV50	10	3V...60V	83	1,2	73 x 53 x 13	X	X	X
100	TESAV100	17	12V...60V	87	1	95 x 68 x 13	X	X	X
200	TESAV200	17	12V...60V	87	1	95 x 68 x 13	X	X	X
500	TESAV500	32	12V...60V	88	1	110 x 84 x 16	X	X	X
1000	TESAV1000	32	24V...60V	90	1	168 x 110 x 16		X	X

DC/DC Converter JETD Series

DC converters are designed in Brick standard cases with a reduced height profile, output power of 25 W up to 600 W, and they are capable to operate in severe operating conditions – at a temperature range of -60°C... +125°C, humidity of 95%, and other external environmental conditions (dust, vibration). Form factor allows the application in constructions and projects focused on a wide range of DC/DC converters from leading manufacturers. In our JETD DC/DC series JET implemented new developments to improve efficiency and increase power density.

Power Watt	Size	Model	I max	Uout	Effic.	Outputs	Dimensions mm	Input 9V-36V	Input 9V-18V	Input 18V-75V	EMI Class B - Filter
25	1/16 Brick	JED25	6	3V...60V	88	1	33.1 x 23 x 10.4	X	X	X	JETDF2.5
50	1/8 Brick	JED50	10	3V...60V	88	1	58.5 x 23 x 9.8	X	X	X	JETDF5
100	¼ Brick	JED100	20	5V...60V	93	1	58.5 x 36.9 x 11.6	X	X	X	JETDF10
200	½ Brick	JED200	40	5V...60V	93	1	61.1 x 58.5 x 11.6	X	X	X	JETDF20
400	Full Brick	JED400	40	9V...60V	92	1	116.8 x 61 x 13		X		JETDF20

Custom products:

Should you have special requirements, which cannot be met by their standard products – JET is keen on finding solutions for challenging projects!

JETIS - EXPLOSION-PROOF CONVERTERS

JETIS Series – the new series of AC/DC and DC/DC converters, intended for use in anti-spark power systems for electrical facilities of explosion-hazardous industry.



Products	Description
Isolated DC/DC Converter	MBH Series 1100 to 2100 Watt
MIL-STD-1275B / MIL-STD-461E	Custom and Standard Solutions for Industrial and Mil- Applications
Input Voltage	10V-16VDC (1100W)
Output Voltage	28Vdc
Input Voltage	23V-32Vdc (2100W)
Output Voltage	12V & 13.5V
Efficiency	97%
Environment	Ideal for harsh Shock and Vibration Environments

Isolated-Digital DC/DC Converter	WDE Serie 75 Watt 1/8 Brick Solution
Input Voltage	4:1 / 9.0-36VDC / 18-75V DC
Output Voltage / 24V Input	5V, 12V, 24V, 28V, 48V
Output Voltage / 48V Input	24V, 28V, 48V
Telemetry-Data	Real Time Performance Data VIA PMbus th
Adjustment	Digital configurable voltage, current and over temperature & Sense Connectors
Control connector	Remote on/off
Evaluation Board	WDE24-1, WDE24-2, WDE48-2 please contact Kamaka

Isolated-Analog DC/DC Converter			Brick Solution 75 Watts and up to 1000 Watts			
Series	Watts	Package	V in Nom	V out	V in Range	Case/Size
QH	75	¼ Brick	24, 48	3.3 , 5, 12, 15, 24	2:1	1.45"x2.28"x0.52"
HEW	100	½ Brick	24, 48	3.3, 5, 12, 15, 24	4:1	2.4"x2.28"x0.55"
HEW	150	½ Brick	24, 48	5, 12, 15, 24	4:1	2.4"x2.28"x0.55"
GX	200	½ Brick	28	15, 24	2:1	2.4"x2.28"x0.55"
MTW	360	½ Brick	24	12, 15, 24, 28	4:1	2.4"x2.50"x0.55"
MXW	500	½ Brick	24	12, 15, 24, 28	4:1	2.4"x2.50"x0.55"
FXW	1000	Full Brick	24	24, 28	4:1	4.7"x2.50"x0.55"
FXP	1000	Full Brick	24	24, 28, 48, 53	4:1	4.7"x2.50"x0.55"
HD DUAL	75	½ Brick	24, 48	2.5 , 3.3, 5	2:1	2.4"x2.28"x0.55"
HE Triple	75	½ Brick	24, 48	3.3, 5, +/-12, +/-15, +/-17	2:1	2.4"x2.28"x0.55"
LT Triple	75	½ Brick	24	1.5, 1.8, 2.5, 3.3 ,5	2:1	2.4"x2.28"x0.55"
Control Connector	Remote on/off					
Adjustment	Output voltage +/-10% & Sense Connectors					
EMI	Filter for 24V + 28Vdc nom. input voltage MIL-STD-461-E at full load 200W / 28V					
Load Share Module	LSL	¼ brick package, Dual input load sharing, DCDC trim function ; 60° output				
Hold Up Module	HU-28	¼ / ½ brick package 50ms hold-up time without external capacitor				



<ul style="list-style-type: none"> •Full Brick - 1000 Watt FXP Parallel •Full Brick - 1000 Watt FXW Single •1/2 Brick - 500 Watt MXW Single •1/2 Brick - 360 Watt MTW Single •1/2 Brick - 200 Watt GX Single •1/4 Brick - 250 Watt QMW Single •1/4 Brick - 150 Watt QSW Single •CBAM™-Power Quality (MIL-STD-1275B) •EMI Filters (MIL-STD-461E) •MBH 1100-2100 Watt with CAN-Bus 	<p>Power distribution box-landed/ground based/portable</p> <ul style="list-style-type: none"> •X-Band/L-Band transmitters: radar sets •Autonomous robotic systems •Man packed radio/satellite terminals •RF inhibitors/jammers (EW) •Rugged computers •Thermal imaging <p>Military-COTS, demanding, mission critical apps.</p> <ul style="list-style-type: none"> •Ultra-wide input range 4:1, 9-36V, 18-75V for battery powered/ back up applications •High efficiency (up to 96.5%) for energy saving and easier thermal management •High Power Density: 150W-250W @ quarter brick, 360W-500W @ half brick 1KW @ full brick : for board space saving •Case operating temp.: -40°C to +100°C, extended -55°C to +110°C •Shock and Vibration designed to meet MIL-STD-810G •Complementary front end modules comply with MIL-STD-461E & MIL-STD-1275B •Outputs: single to triple output voltages •Isolation: 2250VDC (i/o), up to 4250VDC available •Mounting: PCB (Bricks), Chassis •Custom solutions available •5 year Warranty •EAR99 classified •3500 W bidirectional non-isolated DC/DC converter provides a complete solution for in-vehicle power distribution in 12V/48V battery configuration for a variety of applications
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100% Testing under all operating conditions 5 Year warranty

Transportation Market Major Features



- Positive Train Control (PTC)
- Train tachometers
- Platform Track Intrusion Detection Systems (PTIDS)
- Signaling passenger trains
- Light EV: E-bikes
- E-Scooters
- Forklift trucks
- Automotive accessories
- Auxiliary electronics
- Custom DC to DC for vehicles



AC DC Power Modules

Series	Power (W)	Input Voltage (VDC)		Output Configurations	Output Configurations	Case Type
		Nominal	Range			
PK 2	2	115	85-264	3.3,5,8,14,24	Single, Dual	PCB
PK 4	4	115	85-264	3.3,5,9,12,15,24	Single, Dual	PCB
PK 7	7	115	85-264	3.3,5,12,15,24	Single	PCB
PL 10	10	115	85-264	3.3,5,12,15,24	Single	PCB
PK 10	10	115	85-264	3.3,5,12,15,24	Single, Dual	PCB
PK 15	15	115	85-264	5,12,15,24,48	Single, Dual, Triple	PCB
PC 15	15	115	85-264	5,12,15,24,48	Single, Dual, Triple	Chassis
CM25	25	115	88-264	5,12,24,48	Single	Chassis
PK 30	30	115	85-264	5,12,15,24,48	Single, Dual, Triple	PCB
PC 30	30	115	85-264	5,12,15,24,48	Single, Dual, Triple	Chassis
CM35	35	115	88-264	5,12,24,48	Single	Chassis
CM50	50	115	88-264	5,12,24,48	Single	Chassis
PK 60	60	115	85-264	5.1,12,15,24,36,48	Single	PCB
PC 60	60	115	85-264	5.1,12,15,24,36,48	Single	Chassis
CM75	75	115	88-264	5,12,24,48	Single	Chassis
CM100	100	115	88-264	5,12,24,48	Single	Chassis
DNP120	120	115	88-264	12,24,48	Single	DIN
CM150	150	115	88-132 / 176-264	5,12,24,48	Single	Chassis
DNP240	240	115	88-132	12,24,48	Single	DIN



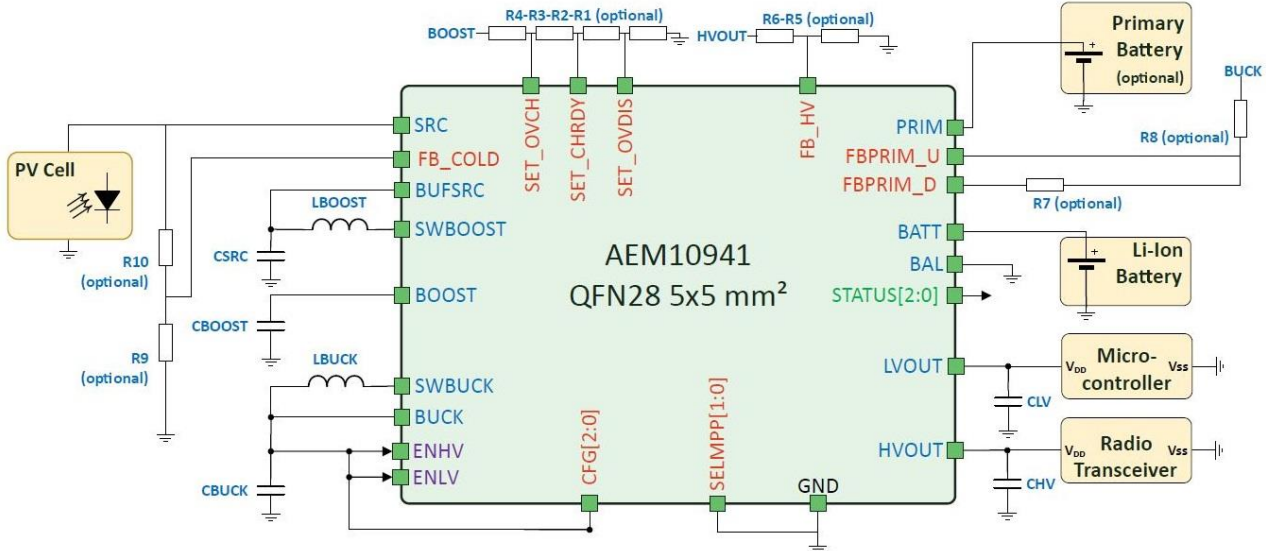
DC/DC Converters for Industrial & Medical Applications

red line: medical version / blue line: railway version

Series	Power (W)	Input Voltage Nominal (VDC)	Range	Output Voltage (VDC)	Isolation	Case Type	Case Dimensions LxWxH (Inches)
SPM	1	5,12	±10%	5,12,15,±5,±12,±15	6kVDC	SIP	0.87x0.30x0.49
SMH	1	5,12,24	±10%	3.3,5,12,15,±5,±12,±15	3kVDC	SMT	0.64x0.31x0.31
DPN	2	5,12,24	10%	5,12,15,±12,±15	4kVAC	DIP	0.94x0.53x0.34
DPT	2	5,12,24	±10%	5,12,15,±5,±12,±15	6kVDC	DIP	1.25x0.80x0.40
SMP	2	5,12,24	±10%	5,12,15,±12,±15	4kVAC	SMT	0.94x0.54x0.35
SPQ	3	12,24,48	4:1	3.3,5,12,15,±5,±12,±15	1.6kVDC	SIP	0.86x0.37x0.44
DPV	3	5,12,24	±10%	5,12,15,±12,±15	3kVAC	DIP	1.25x0.80x0.41
SMZ	5	12,24,48	2:1	3.3,5,12,15,±5,±12,±15	1.5kVDC	SMT	1.31x0.81x0.40
SMW	5	24,48	4:1	3.3,5,12,15,±5,±12,±15	1.5kVDC	SMT	1.31x0.81x0.40
DPL	5 - 6	12,24,48	2:1	5,12,±12,±15	4kVAC	DIP	1.25x0.80x0.40
DMJ	5-6	5,12,24,48	2:1	3.3,5,12,15,±5,±12,±15	1.5kVDC	DIP	1.25x0.80x0.40
DPZ	6	24,48	4:1	3.3,5,12,15,24,±5,±12,±15	3kVDC	DIP	1.25x0.80x0.40
SMQ	6	24,48	4:1	3.3,5,12,15,24,±5,±12,±15	1.5kVDC	SMT	0.87x0.80x0.40
DMS	10	12,24,48	2:1	2.5,3.3,5,5.1,12,15,±12,±15	1.5kVDC	DIP	1.25x0.80x0.40
RQH	10	24,48,110	4:1	5,12,15,24	2.25kVDC	2"x1"	2.00x1.00x0.43
QMH	10	24,48	4:1	3.3,5,5.1,12,15,±5,±12,±15	1.5kVDC	1"x1"	1.00x1.00x0.40
TMR	10	12,24,48	2:1	5,12,±12,±15	4.2kVAC	2"x1"	2.00x1.00x0.47
TMK	12	24,48	4:1	3.3,5,12,15,±5,±12,±15	1.5kVDC	2"x1"	2.00x1.00x0.40
TMS	15	24,48	4:1	3.3,5,12,15,±5,±12,±15	1.5kVDC	2"x1"	2.00x1.00x0.40
RQT	20	24,48,110	4:1	5,12,15,24	2.25kVDC	2"x1"	2.00x1.00x0.43
QMJ	20	24,48	4:1	3.3,5,12,15,±12,±15	1.5kVDC	1"x1"	1.00x1.00x0.40
QMS	25	12,24,48	2:1	3.3,5,12,15,±12,±15	1.5kVDC	1"x1"	1.00x1.00x0.40
QMZ	25	24,48	4:1	3.3,5,12,15,±12,±15	1.5kVDC	1"x1"	1.00x1.00x0.40
KMW	25 - 30	24,48	4:1	3.3,5,12,15,±12,±15	1.5kVDC	2"x1.6"	2.00x1.60x0.37
TMF	40	12,24,48	4:1	3.3,5,12,15,24,±12,±15	1.5kVDC	2"x1"	2.00x1.00x0.40
TML	50	12,24,48	2:1	3.3,5,12,15,24	1.5kVDC	2"x1"	2.00x1.00x0.40
TMX	50	24,48	4:1	3.3,5,12,15,24	1.5kVDC	2"x1"	2.00x1.00x0.43
RQF	50	72,110	2:1	5,12,15,24	3.0kVDC	2.28"x1.45"	2.28x1.45x0.50
RQS	75	72,110	2:1	5,12,15,24	3.0kVDC	2.28"x1.45"	2.28x1.45x0.50

Highly efficient, dual regulated output, ambient energy manager

E-peas' photovoltaic energy harvesting IC solution – AEM10941 – is the next generation integrated energy management subsystem that extracts DC power from up to 7 cells solar panels to simultaneously store energy in a rechargeable element and supply the system with two independent regulated voltages. This allows product designers and engineers to extend battery lifetime and ultimately get rid of the primary energy storage element in a large range of wireless applications like industrial monitoring, home automation, wearables.



The AEM10941 harvests the available input current up to 125 mA. It integrates an ultra-low-power Boost converter to charge a storage element, such as a Li-Ion battery, a thin film battery or a super- or conventional capacitor. The Boost converter operates with input voltages in a range of 50 mV to 5V. With its unique cold-start circuit, it can start operating with empty storage elements at an input voltage as low as 380 mV and an input power of just 3 μ W. The low voltage supply typically drives a microcontroller at 1.8 V. The high voltage supply typically drives a radio transceiver at a configurable voltage. Both are driven by highly efficient LDO (Low Drop-Out) regulators for low noise and high stability.

Ultra-low-power start-up
Cold start from 380 mV input voltage and 3 μ W input power (typical)

Ultra-low-power Boost regulator
Open-circuit voltage sensing for MPPT every 5 s
Configurable MPPT with 2-pin programming
Selectable Voc ratios of 70, 75, 85 or 90 %
Input voltage operation range from 50 mV to 5 V
MPPT voltage operation range from 50 mV to 5 V

Integrated LDO regulator at low voltage
1,2 V to 1.8 V, high efficiency
Up to 20 mA load current

Integrated LDO regulator at high voltage
Configurable from 1.8 V to 4.2 V, high efficiency
Up to 80 mA load current with 300 mV drop-out
Power gated by external control

Flexible energy storage management
Programmable overcharge and overdischarge protection
Suitable for any type of rechargeable battery or (super)capacitor
Fast supercapacitor charging

Smallest footprint, smallest BOM
Only seven passive external components

The AEM10941 Evaluation Board is a printed circuit board (PCB) assembly featuring all needed components to put in operation the AEM10941 integrated circuit (IC) from e-peas. Please refer to the AEM10941 data sheet for all useful details about this IC. It allows you to test the component and analyze its performance in a laboratory-like environment. The AEM10941 Evaluation Board is not intended for final implementation in an end-user application.

The board provides easy connections to the source of harvested energy, the storage element, the low voltage load and the high voltage load. It includes all the configuration items to set the device in any modes described in the data sheet. The control and status pins are available on standard pin headers, enabling wiring for any usage scenario and evaluation of the corresponding performance.

The AEM10941 Evaluation Board is your indispensable tool to take appropriate decisions (component selection, operating modes...) regarding the design of a highly efficient energy harvester subsystem in your target application.





EVANSCAPS - POWER WHEN YOU NEED IT!

**EVANSCAPS have the highest energy and power density capacitors
Military grade Tantalum Wet Capacitors - MTBF>5,000,000 hours**

10V-125V with over 100 capacitance ratings in broad range of form factors

Very low ESR, Very high current handling capability. Applications range from Avionics/Power hold up, Laser pulse power, Phased array radar pulse power, 200°C+ models available for oil and gas exploration.

THQ Hybrid Capacitors 1.40" dia	4,500µF to 200,000µF (10V-125V) 85°C (6V-75V) 125°C
TDD Hybrid Capacitors 1.40"square	1,500µF to 30,000µF (50V-125V) 85°C (30V-75V) 125°C
THS3 Hybrid Capacitors	4,200µF to 200,000µF (10V-125V) 85°C (6V-75V) 125°C
THQ & THS Hybrid Capacitors	Stud Mounting SM00 – SM05
HyCap Series Hybrid Capacitors	68µF to 2,200µF (25V-125V) 85°C (15V-85V) 125°C
HyCap Series Hybrid Capacitors	Standard DSCC 93026 & DSCC 10004 ratings
HyCap HT Hybrid Capacitors	68µF to 1,500µF (30V-75V) 175°C (25V-62V) 200°C
THQA2 Hybrid Capacitors	215µF to 10,000µF (10V-125V) 85°C (6V-75V) 125°C
THQA2-HT Hybrid Capacitors	215µF to 560µF (37.5V-62.5V) 175°C (30V-50V) 200°C
TQS2 Shock hard Hybrid Capacitors	1,600µF to 13,000µF (8V-50V) 85°C (4.8V-30V) 125°C
THQ3 Hybrid Capacitors	1,100µF to 50,000µF (10V-125V) 85°C (6V-75V) 125°C
3STHQ3 or 3PTHQ3 Series - 3" Pack	1,100µF to 450,000µF (10V-300V) 85°C (6V-180V) 125°C
6PTHQ3 Series - 6" Pack	20,000µF to 900,000µF (10V-125V) 85°C (6V-75V) 125°C
Capattery Series EDLC	0.47F to 1.5F (5.5V -25V) -55°C to +85°C
HQ Series Hybrid Capacitors	1,100µF to 50,000µF (10V-125V) 70°C

The design and manufacture of capacitors and capacitor modules for Aerospace and Defence customers
Approvals: ISO 9001:2015, AS 9100:2016, in accordance with the requirements of AS9104/1:2012



Super-Capacitors up to 2.8V, wide temp. range -40 to + 65°C;
-25 to +70°C

EDLC (Green Caps): 3F to 3000F, 2.5V to 2.7V, very low ESR
Hybrid Supercaps: 250F to 7500F, 2.8V, Low ESR

Battery-Caps: 1000F to 70000F, 2.7V, high power and high energy types

Applications: Hybrid vehicles, renewable energy system PV, UPS
high power performance vs. battery, maintenance-free, environmental



International **IOR** Rectifier

Products	Description			
Isolated DC/DC Converters	Power 5W-120W - through hole technology -(THT)- High Reliability DC/DC Converters with Magnetic Coupled Feedback			
Operating Temperature	-55°C to +125°C			
DC - Input Voltage Range	16V-50V, 30V-80V, 80V-160V, 160V-400V			
Single Output Voltage	3.3V, 5V, 6V, 9V, 12V, 15V, 28V			
Dual Output Voltage	±5V, ±12V, ±15V			
Triple Output Voltage	5V/±12V, 5V/±15V			
Case	Metal Case / option: with flange			
Manufactured in a facility fully qualified to MIL-PRF-38534, these converters are fabricated utilizing DSCC qualified processes. For available screening options, refer to device screening table in the data sheet. Variations in electrical, mechanical and screening requirements can be accommodated.				
ASA and AHV are designed to meet stringent 80V, 0.1 second per MIL-STD-704A without external filtering required	Output Power	Hi-Rel Hermetic		
		Single	Dual	Triple
	5W	ASA	ASA	-
	5W	HTB _{new}		
	6W	ASAP	ASAP	-
ATS includes MIL-STD-461 (CE03) compliant EMI input filters • Product Development Direction	12W	AHF	AHF	-
	15W	AHV	AHV	AHV, ATO
	15W	AHE	AHE	AHFP
AHP/AFL Series: – Parallel for higher power with equal current/ stress sharing – AHP270/AFL270 offers highest power density in the industry – Strong heritage - AHP/AFL >100K units since intro over 10 years ago.	20W	HTA		-
		AHFP	AHE	-
	25W	ATS	ATS	-
	30W	ATR	ATR	ATR
	30W	ATW	ATW	ATRP
	40W	ATRP	ATRP	HM
	55W	HTH	-	-
	66W	AFL, AHP	-	-
	80W	AFL, AHP	AFL, AHP	-
	90W	AFL, AHP	-	-
Product Development Direction – Hermetic designs driven by cost, power density, efficiency – Reviewing non-hermetic power solutions – Leveraging core design for downhole drilling applications up to 210°C and on engine aircraft usage HT Series +185°C without derating.	92W	HTM	-	-
	96W	-	AFL, AHP	-
	100W	-	AFL, AHP	-
	108W	AFL, AHP	-	-
	112W	AFL, AHP	-	-
	120W	AFL, AHP	-	-
	120W	AFL, AHP	-	-
		+185°C rated temperature		
		+165°C rated temperature		

Mil.Std Filter Products

Product Family	Filter Family	Vin Max	Iin Max	Input Xsient	CE03	CS06
ASA	ASF461	50V	0.42A	50V	Y	
All except AFL	AFC461	40V	4A	40V	Y	
All except AFL	AFV461	40V	4A	704A	Y	
All except AFL	AFM704A	80V	4A	704A	Y	Y
AFL28 / AHP28	AME28-461	40V	15A	100V	Y	
AFL50	AME50-461	100V	7A	300V	Y	
AFL120, AFL270	AME270-461	400V	1.5A	720V	Y	
AHP270	AME270-461	400V	1.5A	720V	Y	
ATS	Internal				Y	

EMI Filters are available for design that must be compliant with conducted emission CE03 requirements of MIL-STD-461 - I_{max} 0.42A to 15A



Hermetic Ultra-Capacitor Technology D & AA size cells

33F to 370F capacitance

Extreme temperature operation -40 up to +300°C

Custom Modules

Vibration & 500g Shock Resistance

Lithium Free – no risk of explosions

High Cycle Life, 20+ year shelf life, weldable terminals for parallel or series connect

Applications: Hi-Rel Avionics, High Temperature Products for Oil & Gas



Custom and mobile portable power systems

Military, Aerospace, Marine, safety & energy storage applications

Soldier Wearable Integrated Power Equipment System (SWIPES)

Aerospace / UAV: Rechargeable batteries

High energy density up to 270Wh/Kg

Military standard and custom Li-Ion rechargeable batteries

Military Tactical & Depot Chargers, Vehicle Lithium-Ion batteries

MIL-810 vibration, shock, thermal cycles, humidity, transportation

UN 38.3 Recommendations on the Transport of Dangerous Goods

Battery Management Systems (BMS) and Power Electronics

Renewable energy storage systems and Micro-grid



Isolated Brick DC/DC-Converters: 15 to 800W, Efficiency up to 95%

Rugged COTS DC/DC-Converters: up to 800W, Input Voltage range 8:1, 4:1, 2:1

Railway DC/DC-Converters: Input Voltage 34VDC to 160VDC, 60W to 300W

High Voltage DC/DC-Converters: 180VDC to 500VDC, 300W to 800W

Over-voltage, over-current, short-circuit and over temperature protection

Hybrid EV on-board DC/DC-Converters with CAN 2.0 up to 3.6kW Peak Power

Applications: Commercial, Industrial, Electric Vehicle, Railway, Rugged COTS



Since its founding in 1970, DATEL has established a worldwide reputation as a provider of both standard and custom products designed to meet the ever-changing requirements of military, HI-REL, medical, scientific and industrial applications. Recognizing the unique needs of each system's power requirements, DATEL has established itself as a supplier that works with its customers to provide the right solution.

Our standard DC-DC converters range from ½ watt to 700 watts and are offered in a variety of form factors including: encapsulated, open frame, surface mount, chassis mount, PC board mount and enclosed air ventilated.

- DC/DC-Converters Isolated and Non-Isolated
- Point-of Load DC/DC-Converters 15 to 100W
- 24-Pin DIP DC/DC-Converters up to 15W; 1"x1" DC/DC-Converters up to 40W
- DOSA-Compatible Brick DC/DC-Converters 14 to 600W
- Railway DC/DC-Converters 10 to 300W and wide input range

Applications: Industrial, Medical, Scientific, Hi-Rel Military, Airborne, Aerospace, Railway



1. DC-DC converters:

OUTPUT POWER: 0.1W, 0.25W, 0.5W, 0.75W, 1W, 2W, 3W, 4W, 5W, 6W, 8W, 10W, 15W, 20W, 25W, 30W, 40W

Isolated voltage: 1.5KVDC, 2KVDC, 3KVDC, 6KVDC, 10KVDC

Single input voltage (VDC): 3.3V, 5V, 12V, 15V, 24V, 48V

Wide input voltage (VDC): 5(2:1) >4.5-9V, 12(2:1) >9-18V, 24(2:1) >18-36V, 48(2:1) >36-72V, 24(4:1) >9-36V, 48(4:1) >18-72V

Output voltage (VDC): Single: 3.3V, 5V, 9V, 12V, 15V, 24V Dual: ±3.3V, ±5V, ±9V, ±12V, ±15V, ±24V

Special models: TPT series has 4VDC /5VDC/ 12VDC input & -24VDC/-48VDC/-72VDC output

NON-ISOLATED PARTS: TP78XX-0.5, TP78XX-1, TP78LXX-1, TP78LXX-1.5, TP78XX-2

Input voltage: 12VDC range (4.75-18 /6.5-18 /7-18 / 8-18 / 8.5-18 /4.75-20 / 4.75-26 /4.75-28 /6.5-20) 24VDC range (4.75-28 / 6.5-30 / 8-32 /9-32 /11-32 / 12-32 / 15-32 /16-32 / 18-32 /20-32)

Packaging: DIP SIP SMD

2. AC-DC converters:

OUTPUT POWER: 3W, 5W, 6W, 7W, 10W, 15W, 20W, 25W, 30W

Isolated voltage: 2.5KVAC, 3KVAC, 4KVAC

Wide input voltage (VAC): 220(2:1) >165-265, 220(4:1) >85-265

Output voltage (VDC): Single 3.3V, 5V, 9V, 12V, 15V, 24V Dual ±3.3V, ±5V, ±9V, ±12V, ±15V, ±24V Dual +5/+3.3, +5/+5, +5/+12, +5/+15, +5/+24 Triple +5/±5, +5/±12, +5/±15, +5/±24 **Packaging:** DIP SIP

3. AC-DC power supply:

25W-1200W Enclosed /Open frame type AC-DC Switching Power supply
15-480W AC-DC DIN RAIL Power Supply.

Applications: Commercial, Industrial, Medical, Railway

Our Service

KAMAKA WAS ESTABLISHED in 1992

Strategic Obsolescence Management

Life Cycle Management
Long Lifetime Program up to 25 years
Long Term Storage of obsolescence products
Obsolete Parts Replacement
Requirements Engineering
Supplier Risk Management

Part Procurement

Last Time Buy, EOL-, PCN-Service
Inventory Management & Kitting
Worldwide access to allocation and obsolete products

Packaging Solutions

Custom packaging of bare die
Custom Multi-Chip Module

Quality Agreements

Anti-Counterfeiting Program
AQL spot checks according to DIN/ISO 2859-1
Avoiding Counterfeiting parts - only original parts
Counterfeit Analysis
Components Upscreening Program
Qualified Visual & Electrical Test Reports
Traceability is guaranteed
You will get a manufacturer CoC for re-fabrication parts

Member of



Total Quality Management

DIN EN 9120:2016 technically equivalent to AS9120B and SJAC9120A
DIN EN ISO 9001:2015
DIN EN 61340-5-1 ESD compliant storage & handling process

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