

POWER ELECTRONICS

Eurotronix, your Electronic
Components Distributor

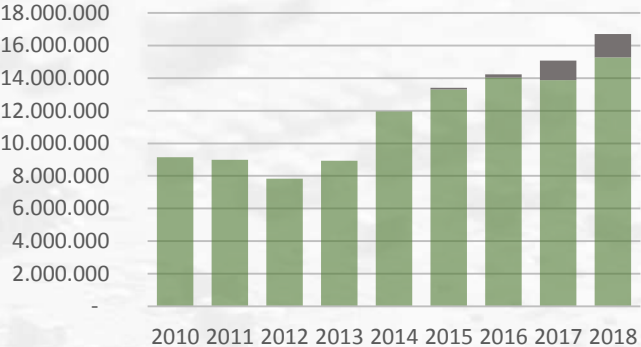
CORPORATE INFORMATION

COMPANY MISSION

Quality and **Service** have always been our priority for Customers and Suppliers.

Our objective is to obtain a **growing level of competitiveness** to achieve the **maximum customer satisfaction** in the Distribution of Electronic and Electromechanical components area. We work as a team creating **strategic alliances** with leading manufacturers and with **R & D / Purchasing Departments** for the clients from national and international market.

Sales 2005-2018



Date of establishment: 1986

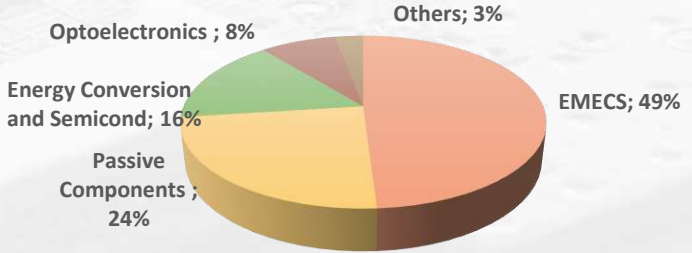
Net Sales 2018: 14 M€

Number of employees: 35 people

Commercial products: **Electromechanical and Electronics**

- Electronic Relays / Industrial Relays
- PCB connectors
- Cables and harness
- Switches and Push buttons
- terminal blocks
- Passive components (Resistors, Capacitors, inductors)
- Semiconductors (Transistors, Diodes, IGBT, Rectifiers.)
- Converters and Energy Management
- Optoelectronics, Displays & TFT
- Connectivity

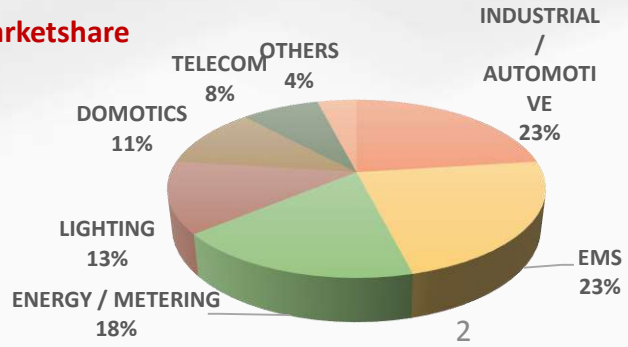
Product Sales



Leading supplier:

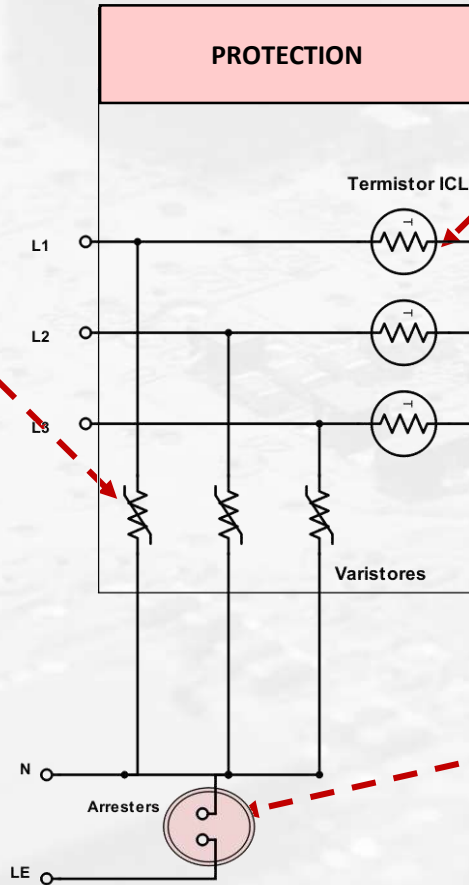
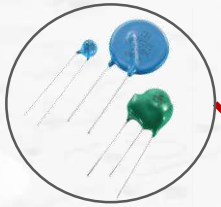


Marketshare



APPLICATION. THREE-PHASE INVERTER

STAGE. PROTECTION



Sunlord
EXPERT IN PASSIVE PARTS



JOYIN CO., LTD.



INPUT FILTER



We are known for offering added value like:

- **Technical advice** in design stages.
- **One Stop Shop**: cost and time saving .
- **Leading Global Supplier** and leaders in the magnetic and circuit protection sector.
- **Own laboratory** for efficiency and temperature tests.
- **Direct and permanent contact** with suppliers.
- **Safety stocks** availability.
- **Excellent delivery times** and logistics management.
- Wide **product line and suppliers** for complete solutions.
- Suppliers with capacity of manufacturing **customized products and large series of standard products**.
- Excellent and flexible logistics services with maritime or air shipments. **More than 200 shipments per month**.

B 君耀电子 BrightKing

- High level of product development. 27 patents awarded, 14 patents awarding.
- Top 100 manufacturers of electronic components organized by CECA (China Electronic Components Association).
- 17 years dedicated in Manufacturing Circuit Protection Components and Applications.
- More than 10,000 references in line card. (TVS, MOV, ESD, SPG, GDT, TSS, PTC, NTC, etc.)
- Guangdong New High- tech Enterprise.
- Test with Reports recognized by UL Lab and TAF LAB.
- 4.69 billions pieces per year.
- Own manufacture and competitive prices.
- Excellent technical support from technical team (FAE).
- Safety regulations and laboratory tests: UL, VDE, TUV, CSA, CQC, etc.

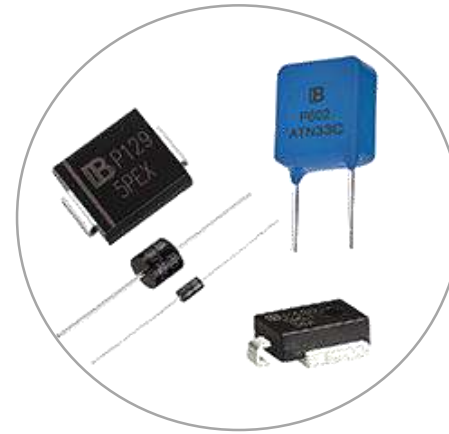


ISO/TS16949



More than 800 employees.
More than 3000 pcs wafer / TSS per month.
More than 15KK NTC, MOV per month
UL-1449 Testing Laboratory.
Recognized by UL WTDP
EMC Testing Laboratory
ISO17025 (TAF) Certified Lab

LINE CARD



TVS - Transient Voltage Suppressors

Breakdown Voltage: 3.3V, 5.0V-1200V

Ipp: Up to 20KA @ 8/20μs

Power: Up to 30KW @ 10/1000μs

Packages: Axial Lead & SMD & Radial

Capacitance: 50-Thousands of pF

Capacity: 120 KK/ Month



MOV/TMOV - Metal Oxide Varistors

DC Breakdown Voltage: 18V - 1800V

Ipp: up to 70KA @ 8/20 μs

Capacitance: 100-1000pF

MOV Size: 5mm - 53mm

TMOV Size: 14mm, 20mm, 25mm

Capacity: 100 KK / Month

ESD – Electro Static Discharge

Reverse stand-off voltage: 2.8V-36V

I_{pp}: 10-100A @ 8/20 μs

Package: 0201 (0603), SOD-523, SOD-323, SOT23-6L, SOD-123S, SOD-882, SOT-143, SOT-23, SOD-923, QFN-10, SOIC-08, SOIC-16

Production capacity: 120 KK / Month

GDT – Gas Discharge Tube

DC Breakdown Voltage: 75V – 6KV

I_{pp}: up to 100KA @ 8/20 μs

Dimension: Wide range in 2R and 3R

Package: Axial lead and SMD

Capacitance: 0.5 ~ 25 pF

Production capacity: 15 KK / Month

SPG – Spark Gaps

DC Breakdown Voltage: 140V - 5kV

I_{pp}: up to 3KA @ 8/20 μs

Dimension: Standard and Mini size

Package: Axial lead & SMD

ITU K21-compliant

Production capacity: 6 KK / Month

TSS – Thyristor Surge Suppressors

Reverse stand-off voltage: 6V - 600V

Package: SMA、SMB、

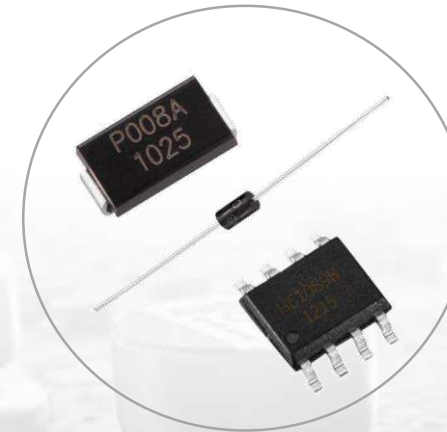
DO-15/DO-201、SOP-8

Surge Ratings:

A/B / C depending on model

Capacitance: 15pF ~ 150pF

Production capacity: 24 KK / Month

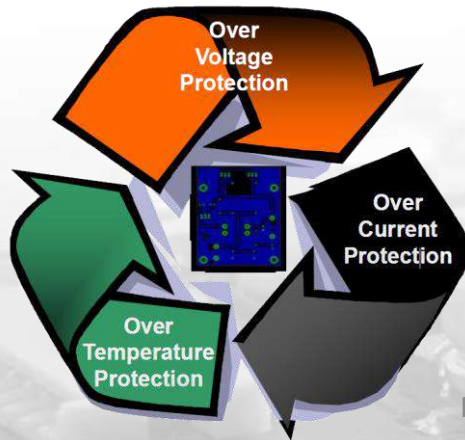




- THERMISTOR**
- NTC
- PTC ceramic
- Polymer PTC Resettable Fuse
- VARISTOR**
- MOV - Metal Oxide Varistor
- ESD**
- ESD Suppressor
- SENSOR**
- Temperature Sensor
- DOWNLOADER**
- Gas Discharge Tube
- TVS DIODE**
- TVS Diode

THINKING offers a **better quality** and **better service** by working closely with customers and remains committed to the best option of passive components.

THINKING also offers a **wide range** of protection circuit components, including surge protection, over temperature protection and overcurrent protection.



Applications: Industrial environments, automotive, electronics, industrial manufacturing, automation, home technology, among other applications.

PRODUCTION CAPACITY

NTC 165 million*	MOV 170 million	Ceramic PTC 30 million	Polymer PTC 20 million	Gas Discharge Tube 10 million	
TVS Diode 50 million	SMD NTC 200 million	MLV 200 million	SMD Ceramic PTC 15 million	SMD Polymer PTC 35 million	ESD Protector 20 million

TSM-H Series

High operating temperature 150°C

THINKING presents the TSM-H series, NTC thermistor type SMD that complies with UL 1434. It has an operating temperature of 150 °C. The high operating temperature of the device allows it to offer protection against over temperature or temperature measurement in an operating environment more rigorous.

Applications: Industrial control equipment, etc.

POWER ELECTRONICS - STAGE. PROTECTION



JOYIN CO., LTD.

- Developing and manufacturing passive components for more than 30 years.
- In 2007 JOYIN was recognized as SONY Green Partner and obtained TS16949 certificate.
- ODM/OEM with Worldwide Class Leading Company for Varistors and NTC (>15 years).
- Fully automated production processes. Greater efficiency and lower cost.
- Vertical integrated solutions for passive components.
- Customized Product Development Capability.

LINE CARD

- Metal Oxide Varistor
- Thermistor NTC
- Power NTC
- Chip Fuses
- NTC Sensor
- MLV
- Thermopile

Certification \ Product	UL US	SA	DVE	△	CQC
JVR Series (85°C Varistors)	★	★	★		★
JVT Series (125°C Varistors)	★		★		★
JNR Series (POWER NTC)	★			★	★
NTC SENSOR	★			★	
JCF Series (Chip fuse)	★				

ROADMAP

		2016	2017	2018	2019
	TMOV (Thermal Protective Varistors)		14S,20S		
				25S,32S	
	JCF (Chip Fuse)	0603 Series		1206 Series	
	JES (ESD Protector)		Low Capacitance Protector		
	Thermopile Sensor (Infrared Temperature Sensor)			Non-contact Thermometer	
	JSR / JAR (Temp Sensor)			Insulated Wire Sensor	
	JTD (High-accuracy Temp Sensing)			Insulated Wire Sensor	
	JCR (Temp Compensation Sensing)			High Accuracy DIP Type	
	JNR (Inrush Current Limiter)			25Ø / 30Ø Series	
	JSN (SMD NTC)			SMD NTC Type	



IPC Power



3D-Printer



EV-Charger



LED Lighting



Audio/Video Entertainment



White Goods



IoT

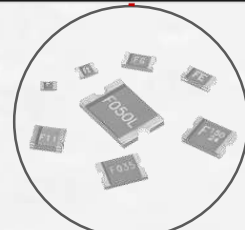
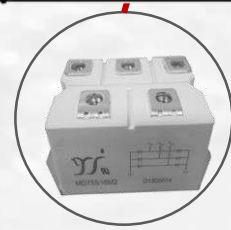
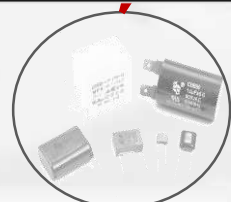
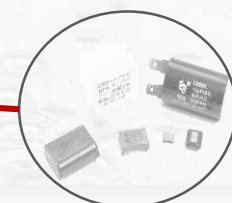
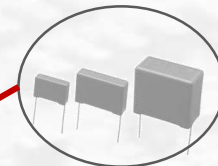
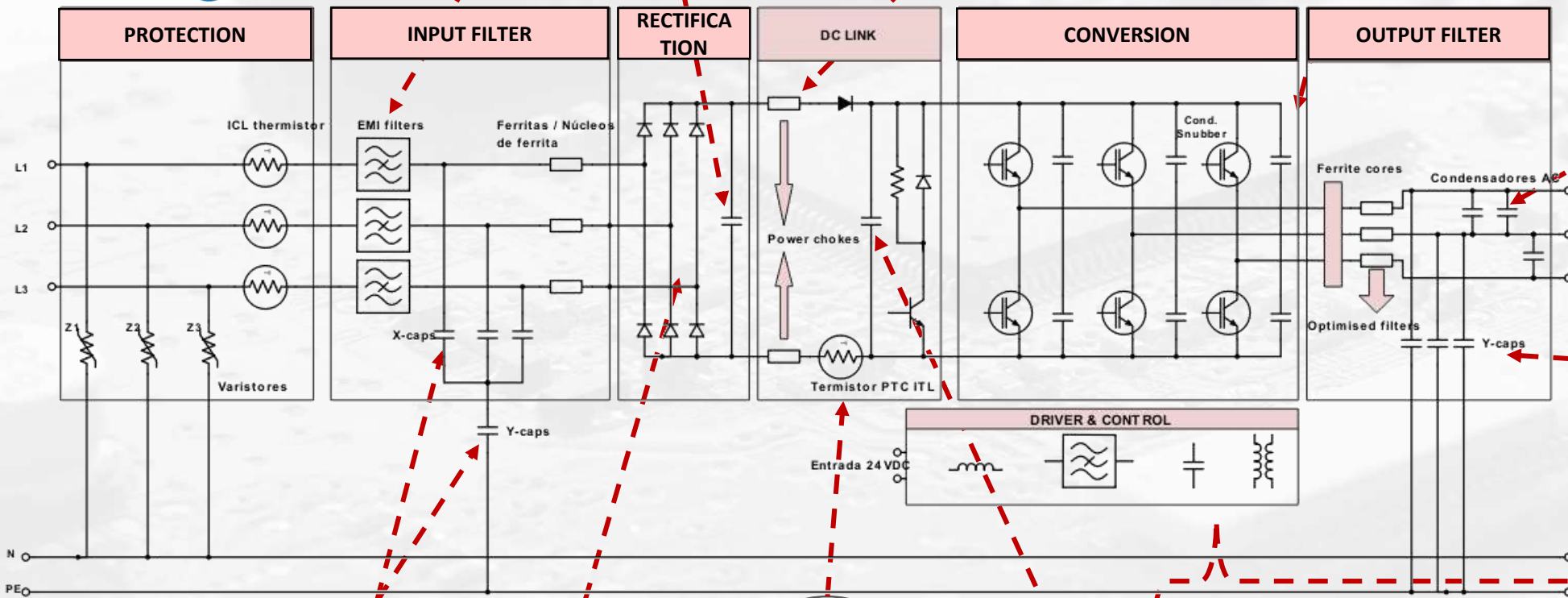
POWER ELECTRONICS



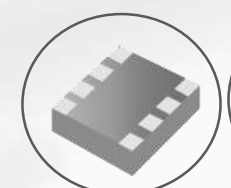
Electronica Rossoni



Juntos trabajamos en Equipo



Power Electronics v10.18



APPLICATION. THREE-PHASE INVERTER

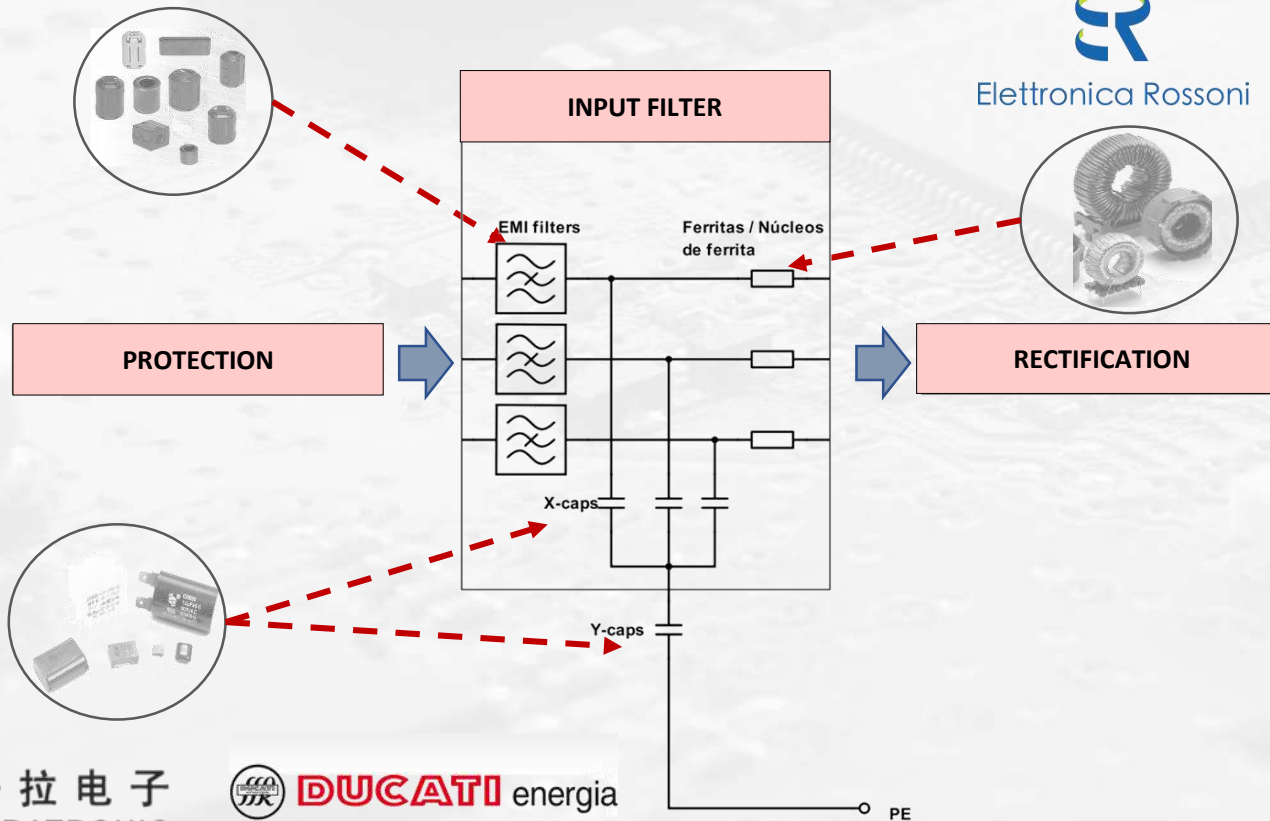
STAGE. INPUT FILTER



Elettronica Rossoni



Elettronica Rossoni



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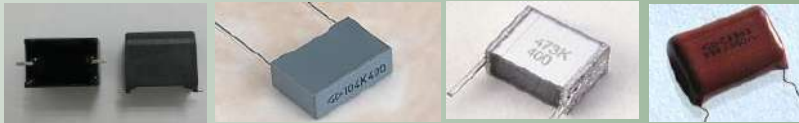
FILM CAPACITOR



Website

- **N.º 1 RANKED WW FILM CAP**
- 3,000 employees - Total assets US\$ 345 million.
- 10 metallization machines - capacity: 3,000 tons/year.
- More than 1,500 automatic machines and 1,000 testing machines.
- **The Largest R & D center** in the FILM CAP market. 5.1% turnover.
- 4% / sales in R & D investment.
- Sales: 11% automotive - 34% in power and energy.
- Customers reference: Siemens, Bosch, ABB, Danfoss, Schneider, ...
- New Power Film Capacitor Production base (100,000 sqm)

Film Capacitors for PCB



AC Motor Capacitors (C6G, C61, C65, C68)



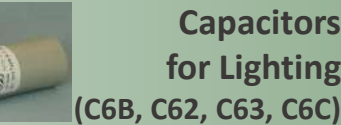
Metallized Film Capacitors



Film Capacitors for Power Electronics (C3x, C6M)



Capacitors for Lighting (C6B, C62, C63, C6C)



Power Electronics v10.18

NEW



C3B (miniature version) – DC Link Capacitor. It can replace capacitor electrolytic Low ESR, high Ripple current, long lifetime, Aluminium case, filled with resin

NEW

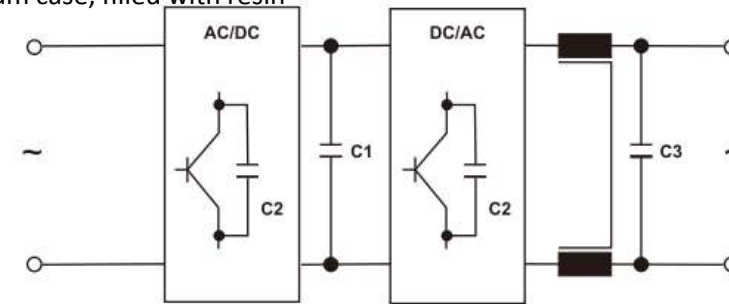


C6M – AC Filter Capacitor. withstand high harmonic current, peak current and peak voltage.

NEW



C3T – Snubber capacitor for high Voltage, high pulse and high frequency applications.



Function	PCB	Series
DC Link (C1)	C3D, C3L	C3A, C3A (G), C3B, C36, C3N, C3E
Snubber (C2)	C3H, C16, C82, C32	C38
AC Filter (C3)	C6A	C66, C6M, C69 (Single Phase) C65(A), C67 (Three Phases) C6D (Single or three phases)

- AECQ 200 version - available
- Design according to technical specifications.

C3T: Snubber capacitor new

for high voltage, high current pulses

- Ceramic lead-through
- Self-healing property
- Filled with oil
- Anti-explosión design, more safety

引用标准 Reference Standard	GB/T 17702 (IEC 61071)	
气候类别 Climatic Category	40/85/56	
工作温度范围 (外壳) Operating temperature range (case)	-40°C ~ 85°C	
额定电压 Rated Voltage (U _N)	1 400Vac ~ 4 000Vac	
电容量偏差 Capacitance Tolerance	J(± 5%), K(± 10%)	
耐电压 (两极间) Test voltage between terminals(U _{T-T})	2.15U _{ms(ac)} ,10s or 3.05U _{ms(dc)} ,10s	
耐电压 (极壳间) Test voltage between case and terminal(U _{T-C})	U _N < 1 500Vac, 3 000Vac(10s, 50Hz, 20°C ± 5°C) U _N ≥ 1 500Vac, (√2 U _N +1 000)Vac(10s, 50Hz, 20°C ± 5°C)	
介质损耗角正切 Dielectric dissipation factor(tan δ _d)	≤ 5 × 10 ⁻⁴ (1kHz, 20°C)	
绝缘电阻 Insulation Resistance (IR × C _N)	≥ 10 000s(20°C , 500Vdc,1min)	
最大电极扭矩 Max. Torque of terminals	M8: 6N·m	M12: 8N·m
最大安装扭矩 Max. Torque of Installation	螺栓式 Bolt type	M12: 10N·m
预期寿命 Expected lifetime	≥ 100 000h @ U _N , θ _{hs} =70°C	

- Metallized polypropylene film structure
- Excellent electric property
- Plastic case (UL94 V-0), filled with resin.
- High performance DC filtering applications

C3D: DC-Link capacitor for PCB

引用标准	GB/T 17702 (IEC 61071)	
气候类别 Climatic Category	40/85/56	
工作温度 (外壳) Operating temperature (case)	-40°C ~ 105°C (+85°C to +105°C : decreasing factor 1,35% per °C for U _{N,85°C})	
额定电压 U _{N,85°C}	500Vdc,600Vdc,800Vdc,900Vdc,1 000Vdc,1 100Vdc,1 200Vdc	
容量偏差 Capacitance Tolerance	J (± 5%), K (± 10%)	
耐电压 Voltage Proof	1.5U _N (10s)	
绝缘电阻 Insulation Resistance (IR × C _N)	≥ 10 000s (20°C , 100Vdc,1min)	
自感 (L _s) Self Inductance(L _s)	< 1nH per mm of lead spacing	
最大峰值电流 I (A) Maximum peak current I (A)	I = C · dV/dt	
预期寿命 Expected lifetime	100 000h @ U _N , θ _{hs} =70°C	

C3B: DC-Link capacitor new

Dry Type, Aluminium Case

- Used in DC-Link, can replace electrolytic capacitor.
- Low ESR, high ripple current handling capabilities.
- Low L_s.
- Self-healing property
- Long Lifetime
- Aluminum case, filled with resin

引用标准 Reference Standard	GB/T 17702 (IEC 61071)	
气候类别 Climatic Category	D ≤ 116mm: 40/85/56 D = 136mm: 40/80/56	
工作温度范围 Operating Temperature Range	D ≤ 116mm: -40°C ~ 85°C (θ _{hs} ≤ 85°C) D = 136mm: -40°C ~ 80°C (θ _{hs} ≤ 80°C)	
贮存温度范围 Storage temperature range	-40°C ~ 85°C	
电压范围 Voltage Range	600Vdc ~ 4 000Vdc	
容量范围 Capacitance Range	24μF ~ 5 600μF	
电容量允许偏差 Capacitance Tolerance	± 5%(J), ± 10%(K)	
耐电压 (两极之间) Test Voltage Between Terminals	1.5U _N (10s, 20°C ± 5°C)	
耐电压 (极壳之间) Test Voltage Between Terminals And Case	U _N < 1 500Vdc, 3 000Vac(10s, 50Hz, 20°C ± 5°C) U _N ≥ 1 500Vdc, (√2 U _N +1 000)Vac(10s, 50Hz, 20°C ± 5°C)	
介质损耗角正切 tan δ _d	2 × 10 ⁻⁴	
IR × C _N	≥ 5 000s (20°C , 500Vdc,1min)	
过电压 Over Voltage	1,1U _N (30% of on-load-dur.)	
	1,15U _N (30min/day)	
	1,2U _N (5min/day)	
	1,3U _N (1min/day)	
	1,5U _N (30ms every time, 1 000times during the life of the capacitor)	
最高使用海拔 Max. Altitude	2 000m	
最大电极扭矩 Max. Torque of terminals	M6: 5N·m	M8:6N·m
最大安装扭矩 Max. Torque of Installation	10N·m	
安装 Installation	任意方向 Any Position	
预期寿命 Expected lifetime	100 000h @ U _N , θ _{hs} =70°C	
失效率 Failure rate	50FIT	

C3A: DC-Link capacitor

Dry Type, Plastic case, Temperature 105°C

- Used in DC-Link circuits, can replace electrolytic capacitor.
- Low ESR, high ripple current handling capabilities.
- Low Ls.
- Self-healing property.
- Long Lifetime
- Plastic case, filled with resin

引用标准 Reference Standard	GB/T 17702 (IEC 61071) 、 AEC-Q200D-2010	
气候类别 Climatic Category	40/105/56	
工作温度范围 Operating Temperature Range	-40°C ~ 105°C ($\theta_{hs} \leq 105^\circ\text{C}$) $\theta_{hs} = 85^\circ\text{C} \sim 105^\circ\text{C}$: decreasing factor 1.5% per°C for U_N	
贮存温度范围 Storage Temperature Range	-40°C ~ 105°C	
电压范围 Voltage Range	450Vdc ~ 900Vdc	
容量范围 Capacitance Range	47 μF ~ 600 μF	
电容量允许偏差 Capacitance Tolerance	$\pm 5\%$ (J), $\pm 10\%$ (K)	
耐电压 Voltage Proof	极间 Between Terminals:	1.5 U_N (10s, 20°C $\pm 5^\circ\text{C}$)
	极壳之间 Between Terminals And Case:	3 000Vac(60s, 50Hz, 20°C $\pm 5^\circ\text{C}$)
介质损耗角正切 $\tan \delta_d$	2×10^{-4}	
IR $\times C_N$	$\geq 5\ 000\text{s}$ (20°C ,100Vdc,1min)	
过电压 Over Voltage	1.1 U_N (30% of on-load-dur.)	
	1.15 U_N (30min/day)	
	1.2 U_N (5min/day)	
	1.3 U_N (1min/day)	
	1.5 U_N (30ms every time, 1 000 times during the life of the capacitor)	
最高使用海拔 Max. Altitude	2 000m	
最大电极扭矩 Max. Torque of terminals	M5: 2.5N·m	M8:6.0N·m
最大安装扭矩 Max. Torque of Installation	3.0N·m	
安装 Installation	任意方向 Any Position	
预期寿命 Expected lifetime	参考预期寿命曲线 Refer to Expected lifetime curve	
失效率 Failure rate	50FIT	

C6M: AC Filter capacitor

Oil-Filled Type **new**

- Ability to withstand high harmonic current, peak current and peak voltage.
- Self-healing property.
- Excellent stable performance and reliability.
- Anti-explosion design, more safety.

引用标准 Reference standards	GB/T 17702 (IEC 61071)
额定均方根电压 Rated RMS Voltage (U_{rms})	250Vac ~ 850Vac
额定频率 Rated frequency (f_N)	50/60Hz
额定容量 Rated capacitance (C_N)	10 μF ~ 600 μF
电容偏差值 Capacitance Tolerance	$\pm 5\%$, $\pm 10\%$, $-5\% \sim +10\%$
极间耐压 Test voltage between Terminals (U_{T-T})	2.15 U_{rms} 或 1.5 U_N (50/60Hz), 10s
极壳耐压 Test voltage between terminals to case (U_{T-C})	4 000Vac(50/60Hz), 10s
绝缘电阻 Insulation Resistance ($IR \times C_N$)	$\geq 10\ 000\text{s}$ (20°C, 100V, 1min)
介质损耗角正切 Dielectric dissipation factor ($\tan \delta_d$)	2×10^{-4} (50Hz, 20°C)
气候类别 Climatic category	40/70/56
可运行温度范围 (热点温度) Operating temperature range(θ_{hs})	-40°C ~ 85°C
存储温度范围 Storage Temperature	-40°C ~ 70°C
防护等级 Degree of protection	IP00
预期寿命 Expected lifetime	$I \Delta C / C \leq 5\%$ after 60 000h @ U_{rms} , $\theta_{hs} \leq 70^\circ\text{C}$
安装位置 Mounting position	端子朝上 Terminals upright
冷切方式 Cooling	自然空气或强制制冷 Naturally air-cooled or force cooled
电极最大扭矩 Max Torque of terminals	4N·m(M8); 6N·m(M10)
最大安装扭矩 Max. Torque of Installation	10N·m(M12)
最高海拔 Max Altitude	2 000m

FILM CAPACITOR



- Experience for more than 50 years in the european market.
- Production in Europe – transportation time saving.
- Powerful support in engineering and development in Europe.
- High levels of innovation.
- Specialist dedicated to low and medium voltage capacitor.
- New **MKP** film with **high crystallinity**.
- **Competitive cost** within standard metallized PP technology.

DC-LINK CAPACITOR APPLICATION



DCH 85C – DCH 86PS

- Up to 30% higher in density than standard series.
- New PPMdH High-Performance Film.
- Withstands high temperatures.

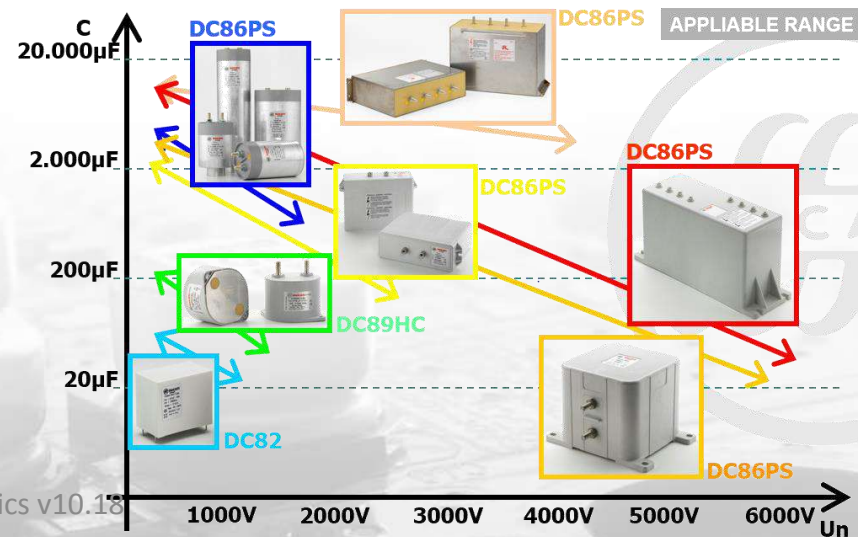
ADVANTAGES PPMdH

- Higher Dielectric Resistance: + 25%
- Increase in operating temperature: + 20°C

Characteristic	PP	PPM _{DH}	PET	PEN	PPS
Dielectric strength	650V/μm	650V/μm	550V/μm	500V/μm	450V/μm
Temperature Stability	+	+	-	-	++
Dielectric Losses	++	++	--	--	++++
Maximum temperature	105°C	125°C	125°C	150°C	150°C
Conduct of Autorecovery	++	++	0	-	-
Cost	++	++	+	--	--

LINE CARD

CAPACITOR TYPE	SERIES	APLICACION
Three-phase AC filter	Module XD - 416.46	Three Phase Filter / Power Factor Corrector for Wind Generators / AC Filters
General purpose	GP 42 - 416.42	Switching, High performance lighting, Filter UPS, AC-Link, Resonant circuit, PFC with high harmonics, DC-Link, Filter
	GP 84 - 416.84	
High Density / High Temperature DC Applications	DCH 85C - 416.85.V/H DCH 86 PS - 416.86.V/H	High Density / High Temperature DC-Link, filter and storage
DC Applications	DC 82 P - 416.82	DC-Link, filter and storage
	DC 85 C/B - 416.85	
	DC 86 P - 416.86	
	DC 86 PS - 416.86	
	DC 89 HC - 416.89	
	DC 88 M - 416.88	
	DC 45 - 416.45	



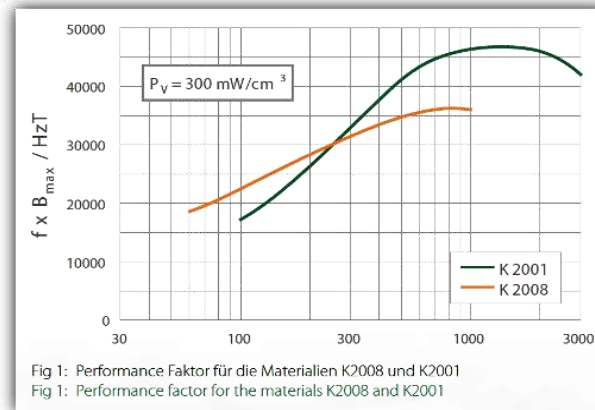
INDUCTIVE AND FERRITES COMPONENTS– KASCHKE

- Founded for 60 years.
- High degree of knowledge in magnetic material (ferrite, ...)
- Main production center in Tunisia.
- High efficiency FAE to offer the best solution in industrial applications.
- Productive technology to operate with high intensity drivers.
- Own range and Mn Zn and Ni Zn ferrite standards.
- Ferrite for low losses.
- Smart power: Range of flyback transformer and standard shocks for SMPS rapid design.



Advantages of Planar Components for SMPS

- Height reduced
- High Power Density
- Reduction of power losses at high operating frequencies
- Excellent thermal properties due to extended surfaces
- Leakage Flow reduced
- High performance and stability of electrical parameters
- High reliability



INDUCTIVE COMPONENTS

[Planar components for SMPS](#)

[PFC-Choke](#)

[Common mode toroid chokes](#)

[2-phase and 3-phase common mode chokes](#)

[KLL chokes](#)

[Inductive components for lighting technology](#)

[Transpondercoils for Identification Systems](#)

[Safety insulation transformers for SmartPower](#)

FERRITES

[Manganese zinc ferrite](#)

[Nickel zinc ferrite](#)

[E and EFS cores](#)

[Planar E and I cores](#)

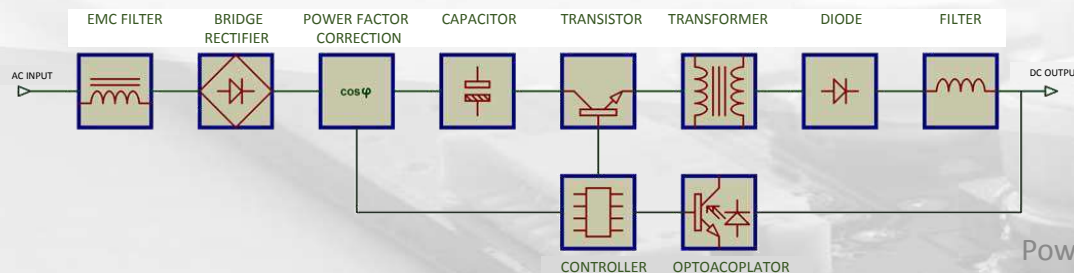
[ETD and ER cores](#)

[U and I cores](#)

[RM cores](#)

[Ring cores](#)

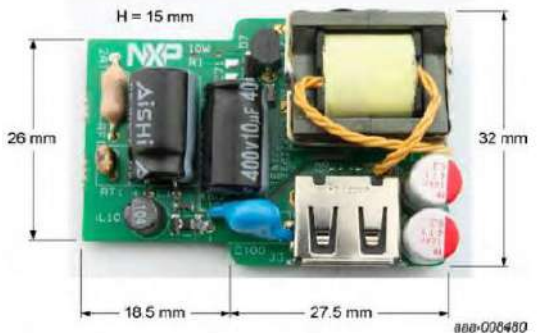
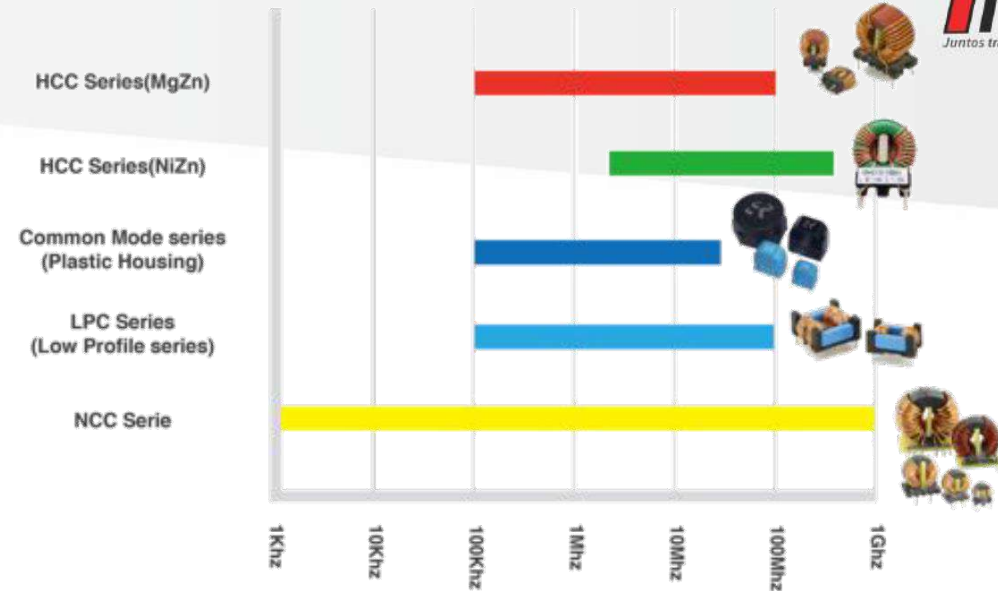
[Double aperture cores](#)



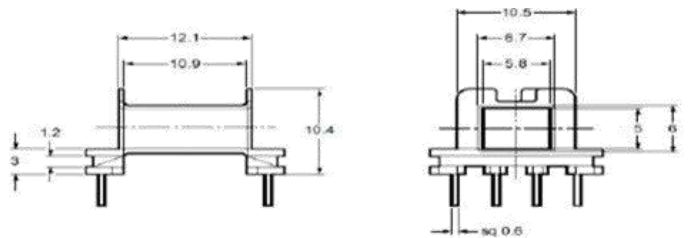
TRANSFORMERS



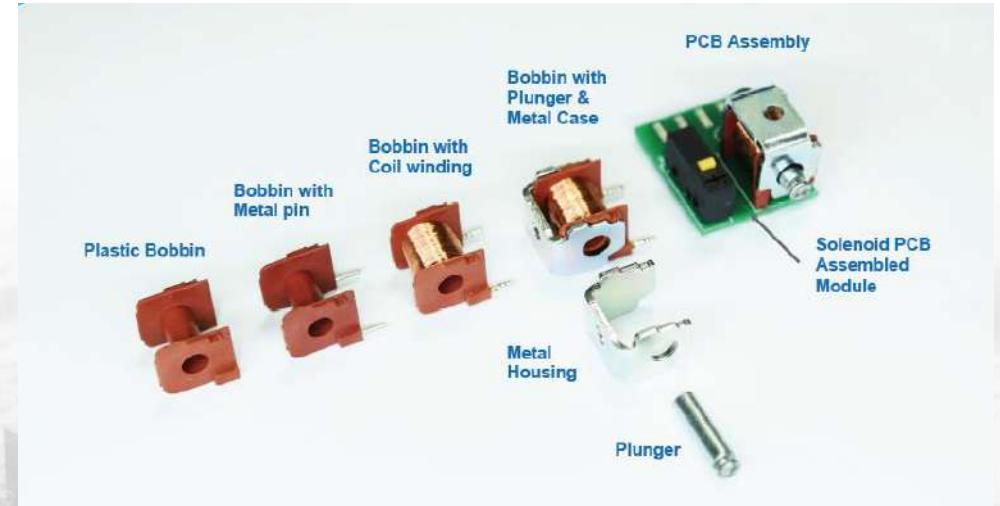
- Sustained growth sales during the last 5 years.
- Manufacturer of magnetic components.
- Main application segments: Lighting, Automotive and Home Appliances.
- High standards of design and engineering for customized solutions.
- Ability to offer complete solutions.
- Manufacturing in Europe and Asia.
- Custom product manufacturing times in 6 days.



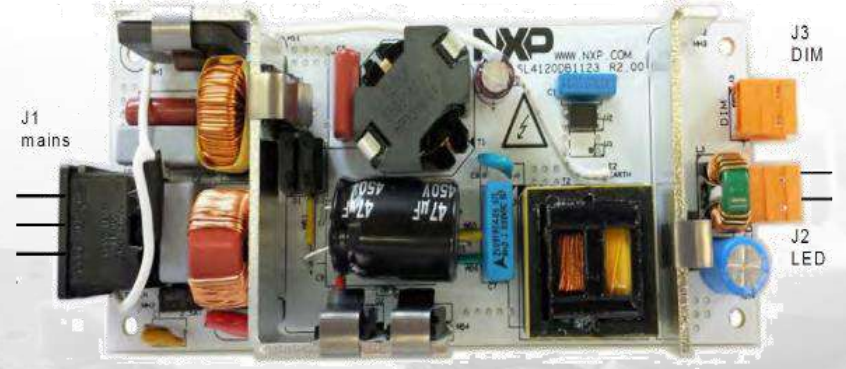
AC-DC Power supply controller for NXP



PRODUCTION PROCESS



Resonant topology Integrated Transformer & PFC choke



COMPLETE SOLUTIONS

EMC-EMI KITs BOXEs INFORMATION



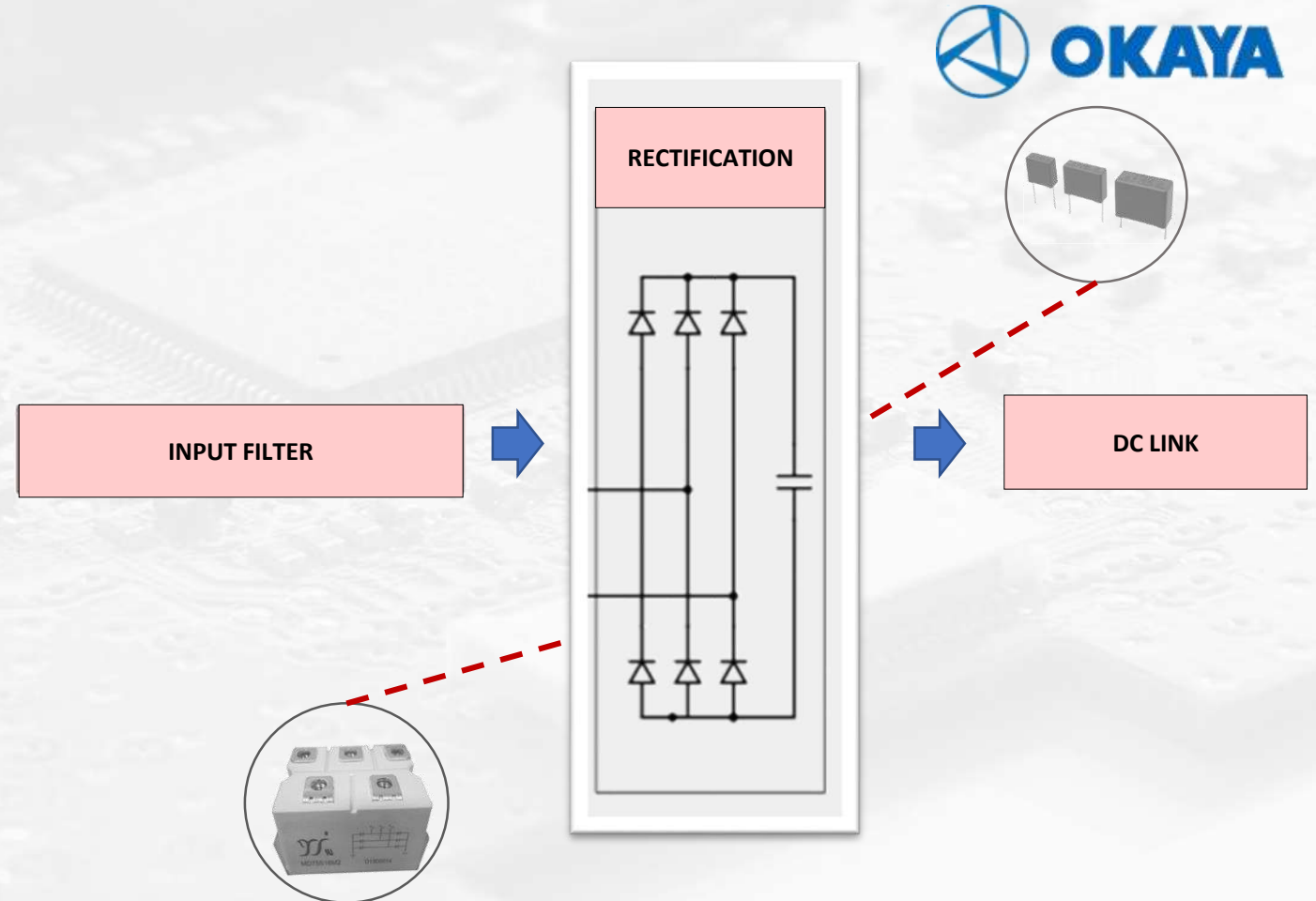
APPLICATION. THREE-PHASE INVERTER

STAGE. RECTIFICATION



We are known for offering added value like:

- **Technical advice** in design stages.
- **One Stop Shop**: saving time and cost.
- **Leading Global Supplier** and leaders in the magnetic and circuit protection sector.
- **Own laboratory** for efficiency and temperature **tests**.
- **Direct and permanent contact** with suppliers.
- Possibility of offering **safety stocks**.
- **Excellent delivery times** and transport management.
- Wide **LINE CARD** and **suppliers** for complete solutions.
- Suppliers with the capacity to manufacture **customized products and large series of standard products**.
- Excellent and flexible logistic service with maritime and / or air shipments. **More than 200 shipments per month**.



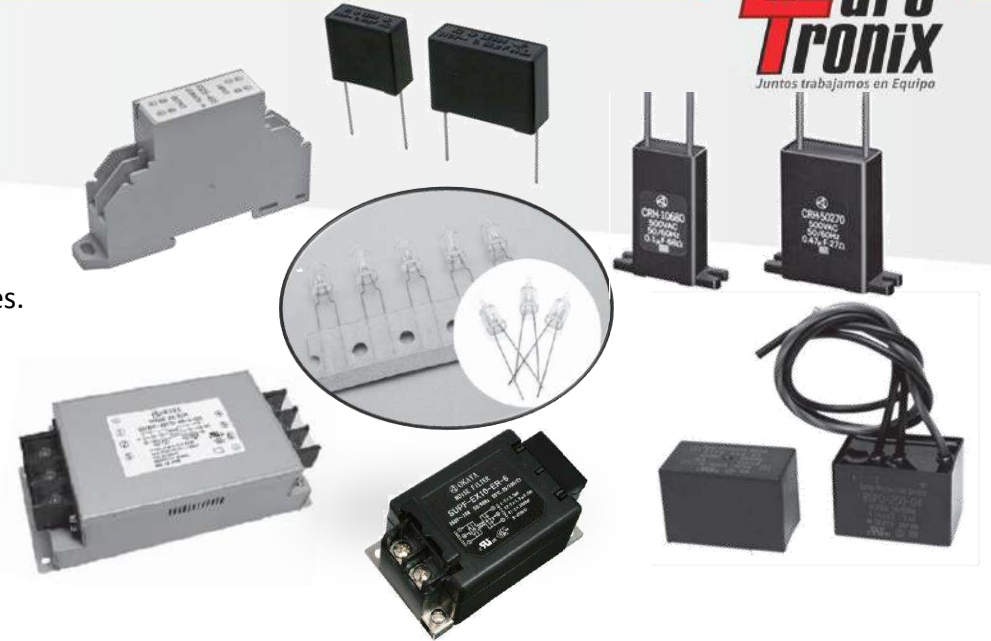
FILTERS AND ELECTRONIC PROTECTIONS



- Japanese company for more than 70 years of experience in electronic and circuits components protections.
- Specialists in suppressing conducted EMI/RFI emissions over a broad range of frequencies.
- Wide range of products for electromagnetic noise filters and high-energy pulse protection components.

Applications

- Inverters
- Switching power supplies.
- DC Motor.
- Industrial automation.



NOISE PRODUCTS

- Noise Suppression Capacitors
- Spark Quencher
- Snubber capacitors
- Capacitor for PFC circuit
- Noise filter (EMI/RFI)
- Common Mode Choke Coil

SURGE FILTERS

- Gas Discharge Tubes (GDT)
- Surge protective device (SPD)
- Hybrid Surge Protection
- Avalanche Breakdown Diode

SENSORS

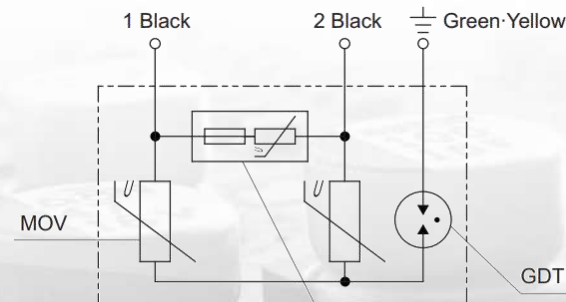
- Infrared LED / High Power Infrared LED.
- Transmissive Photo Interrupter
- Photo Reflector



RoHS

R·A·M-152BQZ(LED) SERIES

SURGE PROTECTIVE DEVICES



Power Electronics v10.18

Thermally Protected MOV

Features

- Compact size SPD of rated AC250V available
- No use the fuse to between lines circuit because of SPD has a built-in separation mechanism
- Impulse discharge current 8/20 μ s-2kA Common mode (1.2/50 μ s(R=12 Ω)-15kV) available.
- Compliance with safety standard (TÜV)
- External setting available for LED security light and LED street light.

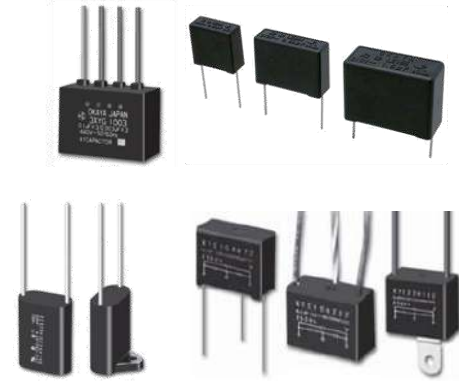
Applications

- LED security light, LED street light



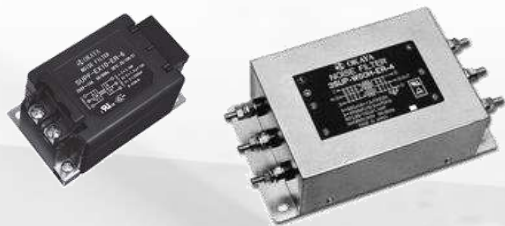
AC CAPACITORS

Okaya's capacitors with metallic polyester film, special to decrease the impedance of the circuit at high frequencies and thus suppress AC noise.



SERIES	CLASS	VOLTAGE
3XYG	X2/Y2	440VAC
LE	X2	275VAC
LE-FX / LE-MX	X2	310VAC
PAB	X2	275VAC
PA-L	X2	275VAC
REB / RE-L	X2	275VAC
VEA	X2	300VAC
XE-Z	X1/Y2	275VAC
XEB	X2/Y2	250VAC
XH	X2	500VAC
XYE	X2/Y2	250VAC
YE	Y2	250VAC
YF	Y2	300VAC

NOISE FILTERS



Reducing common mode and differential mode noise in single-phase and three-phase power lines.

Monophase: Voltage rating of up to **250VAC**.
Current rating between **1 and 300 amps**

Three phase: Voltage rating of **250VAC** and greater.
Current rating between **6 and 700 amps**.



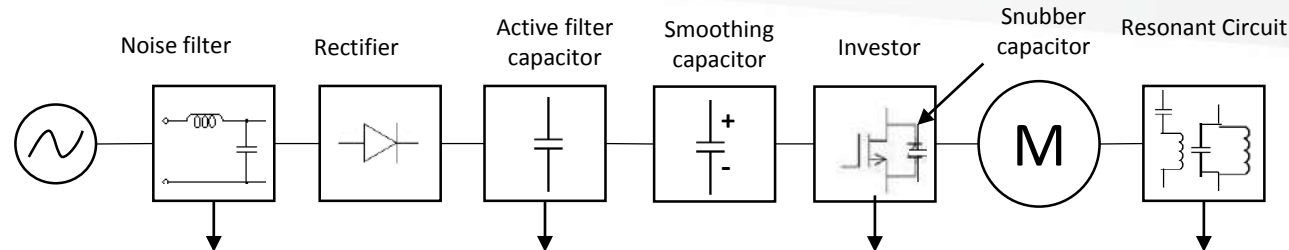
SPARK QUENCHER

Electronic components designed to prevent or substantially reduce the occurrence of electric arc and noise generation in relay contacts and switches.

- High load capacity.
- Non-polarized - applications in AC and DC circuit.
- Favorable effect on over voltage and associated oscillations caused by contact vibration.
- Effective against false voltages with magnitudes below the circuit voltage.
- Offering a high degree of protection for semiconductor devices such as thyristors and SCR.
- Improves the dv / dt ratio.

SERIES	CLASE	APLICACION
3CRE	X2 -- 250VAC	Three phase delta connection
3RMES	X2 -- 250VAC	Three phase delta and thermal relay connection
6CRE	X2 -- 250VAC	Three phase three line connection
AU and TA	X2 -- 250VAC	AC or DC applications
CRE	X2 -- 250VAC	Single phase
CRH and 3CRH	500VAC	High voltage phase control
RE	X2 -- 250 or 275VAC	AC or DC applications
S and SB	150VAC	Bare wire or PVC leads
XA and XAB	125 or 250VAC	PWB or flexible wire leads
XE	X2 -- 250VAC	Wide variety of options
XEB	X2 -- 250VAC	Flexible wire leads

POWER ELECTRONICS APPLICATION



- Noise Suppressor Capacitor**
- LE Series
 - LE-MX Series
 - LE-K, LE-K-M Series
 - RE-L Series
 - PA-L Series
 - VEA Series
 - XH Series
 - REB Series
 - XEV Series
 - XE-Z Series
 - YF Series
 - YE Series
 - XYE Series

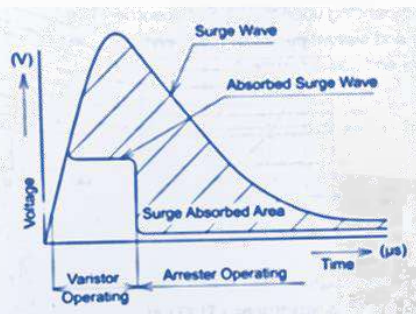
- Capacitor for Active Filter**
- AFC Series
 - AFP Series
 - AFS Series

- Snubber capacitor**
- AFV Series
 - C7NP Series
 - HCP-S Series
 - HHC Series

- Resonant Circuit capacitor**
- HHC Series



- Three-phase component**
- 3XYG



Application	Model Series	Features	Safety Standard
Surge Protection for Network Line	ZP, CP, U, B, SA	Fast response, low clamp voltage	N/A
	RSP-485/-422	Lighting surge protector RS485	N/A
	RSP-232	Surge protector for RS232, all pin	N/A
	RSP-TEL	Lighting surge protector for phone line	N/A
	RLAN	Lighting surge protector for high speed Lan	N/A
	R.A.V-L-A	Fast response, high capacity surge protection	N/A
	R.A.V-LD	Fast response, positive surge absorption, 3 leads	N/A
	RA-C6	Fast response Gas discharge tube	UL, CSA, SEMKO
	RA-C6-Y	Fast response Gas discharge tube w/taping	UL, CSA, SEMKO
	RHCA3216	SMD Gas discharge tube	UL
	RHCA4532	SMD Gas discharge tube	UL
	RHCA5039	SMD Gas discharge tube	UL
	RHCA7044	SMD Gas discharge tube	UL
	RSK, R5K3	SMD Gas discharge tube	N/A
R28, R38, R26, R36	Ceramic gas arrester	UL	
DC Power Line On-Off Surge	ZP, CP, U, B, SA	Fast response, low clamp voltage	N/A
	R.A.V-L-A	Fast response, low clamp voltage	N/A
	R.A.V-LD	Fast response, low clamp voltage	N/A

Eurotronix, Your electronic components' distributor

Contact us! info@eurotronix.com



SURGE VOLTAGE PROTECTION

Application	Model Series	Features	Safety Standard
Surge Protection for Network Line	ZP, CP, U, B, SA	Fast response, low clamp voltage	N/A
	RSP-485/-422	Lighting surge protector RS485	N/A
	RSP-232	Surge protector for RS232, all pin	N/A
	RSP-TEL	Lighting surge protector for phone line	N/A
AC Power Line Lighting Surge Single Phase	R.A.V-BWZ-2A	Lighting surge	UL, CSA
	R.A.V-BWZ-4/-5	Lighting surge	UL, CSA, TÜV
	R.A.V-BWZ-3C	Lighting surge	UL, CSA
	R.A.M-BWZ	European approval	TÜV, SEMKO
	R.A.V-LDEZ	Lighting surge	UL, CSA
	R.A.V-PWZ/-QWZ	Lighting surge	UL, SEMKO
	RSPD-Q	IEC61643-A approval	UL, CSA, IEC, EN
	LV-Q	IEC61643-A approval	UL, SEMKO
	LVF-Q	Max surge current capacity 1000A SPD	N/A
	SV-U	IEC61643-A approval	UL, SEMKO
	R.A.V-BXZ-2A	Lighting surge	UL, CSA
	R.A.V-BXZ-3C	Lighting surge	UL, CSA
	R.A.V-BYZ-2	Lighting surge	UL, CSA
	R.A.V-BXZ-4/-5	Lighting surge	TÜV
Surge Single Phase	R.A.M-BXZ	European approval	UL, CSA, TÜV, SEMKO
	RSPD-U	IEC61643-A approval	UL, SEMKO
	LV-U	IEC61643-A approval	UL, SEMKO
	SV-U	IEC61643-A approval	UL, SEMKO
	RHCA5039	High voltage device	UL
	RA-V7	Fast response Gas discharge tube	UL, CSA, TÜV, SEMKO
	RA-V7-Y	Fast response Gas discharge tube w/taping	UL, CSA, TÜV, SEMKO
	RA-MX-V7-Y/Y(5)	Fast response Gas discharge tube w/taping	UL, CSA, TÜV, SEMKO
	R.A.M-LAS	Micro gap Gas discharge	UL, CSA, TÜV
	R26, R26	Ceramic gas arrester	UL
Electrostatic Surge	ZP, CP, U, B, SA	Fast response, low clamp voltage	N/A
	RSP	Surge protector for RS(EIA)232	N/A
	R.A.V-L-A	Fast response, high capacity surge protection	N/A
	R.A.V-LD	Fast response, high capacity surge protection	N/A
	RA-C6	Fast response Gas discharge tube	UL, CSA, SEMKO
	RA-C6-Y	Fast response Gas discharge tube w/taping	UL, CSA, SEMKO
	RHCA3216	SMD Gas discharge tube	UL

SEMICONDUCTORS

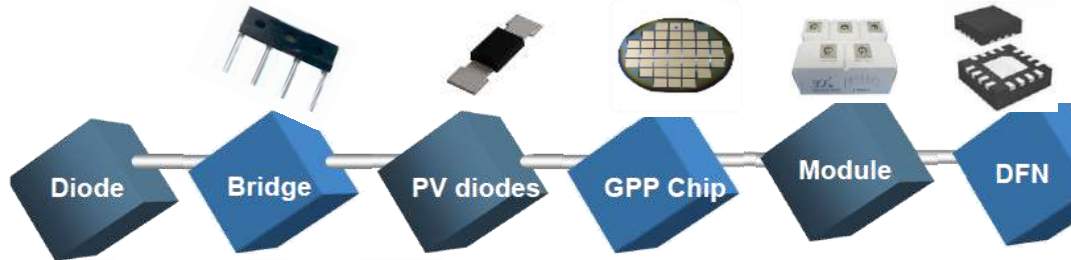
DIODES, BRIDGE RECTIFIER, POWER MODULES



Website

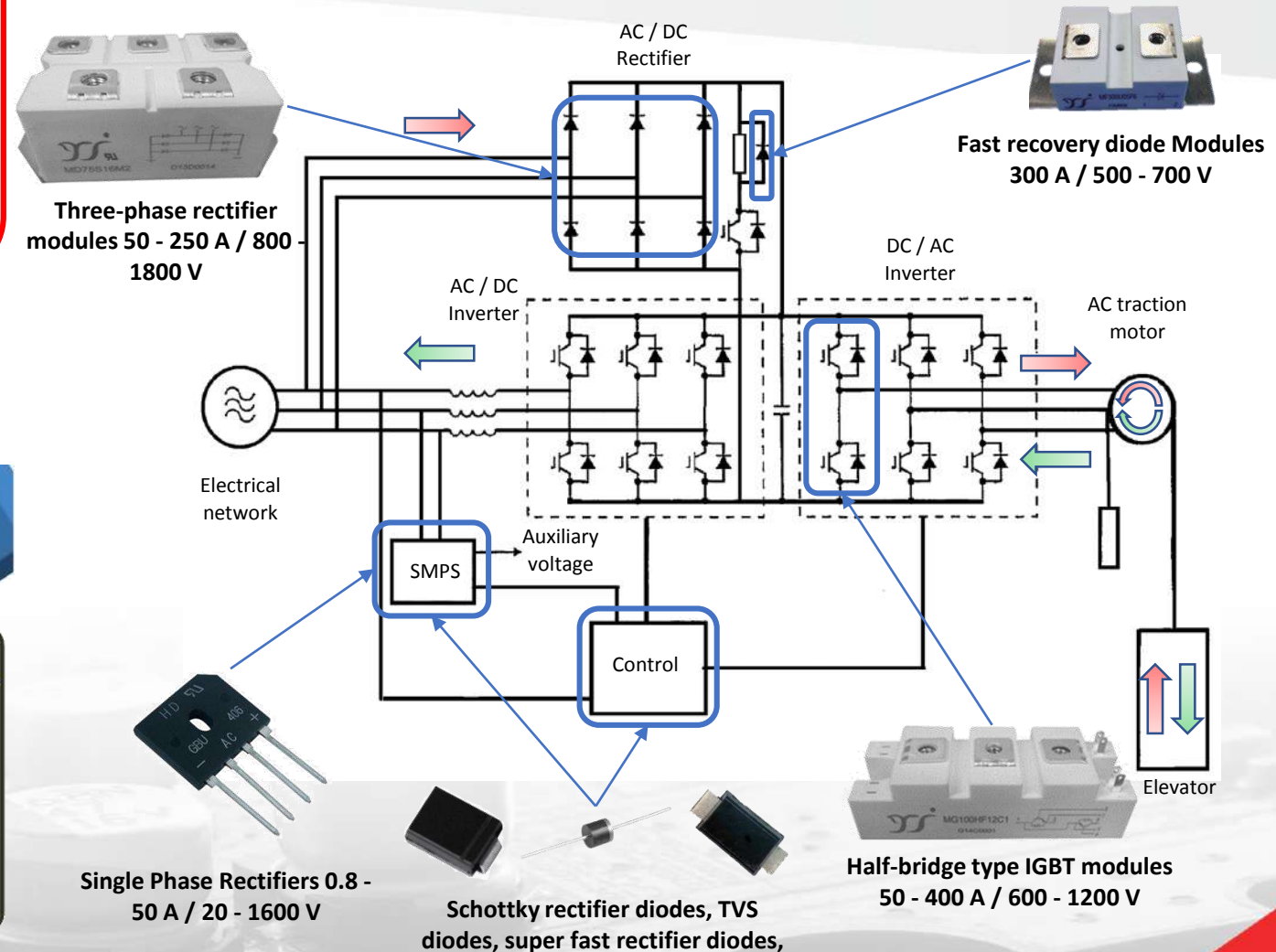
- WW Top 10 ranked in rectifiers.
- More than 30% sales growth in 2016.
- Capitalized to maintain expansion US\$ 85 million invested for the next 3 years.
- Delivery terms from 2 weeks.
- High levels of innovation and development.

LINE CARD



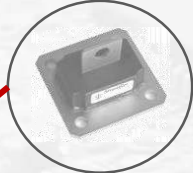
300KK/Month R-1 A-405 DO-41 DO-15 DO-201 R-6 DO-35 SMA/B/C LL-34 MELF DL-41 SOD123FL TO-277 SMAF	100KK/Month ABS MBS/MBM /MBLS DB/DBS/DBLS KBL KBP/RS-2 D3K KBU GBU GBJ4 GBJ6 KBPC1,6,8 KBPC/BR/GBPC25 JA/JB	35KK/Month R-6 TO-263 TO-220AB TO-220AC ITO-220AB ITO-220AC TO-3P GF004	300KPCS/Month FRD Auto Electronics TVS STD GPP OPEN JUNCTION	100KPCS/Month Diode Modules Three Phase - Rectifier Modules Thyristor Modules IGBT Modules FRED Modules	30KKPCS/Month DFN 2510 DFN 2x3 DFN 3x3 DFN 3.3x3.3 DFN 5x6
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Solutions for electric drivers such as elevator displacement control systems with electric power regeneration system.



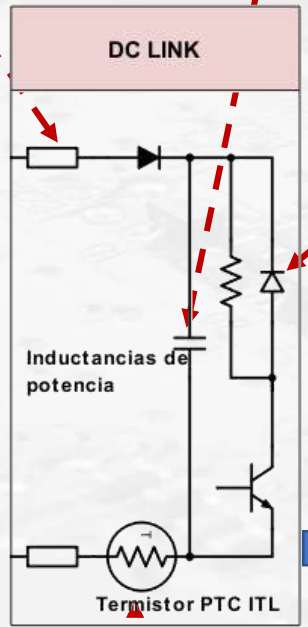
APPLICATION. THREE-PHASE INVERTER

STAGE. DC-LINK



Sirectifier

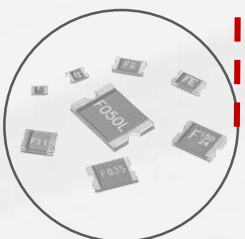
RECTIFICATION



CONVERSION



24VDC DRIVER & CONTROL



We are known for offering added value like:



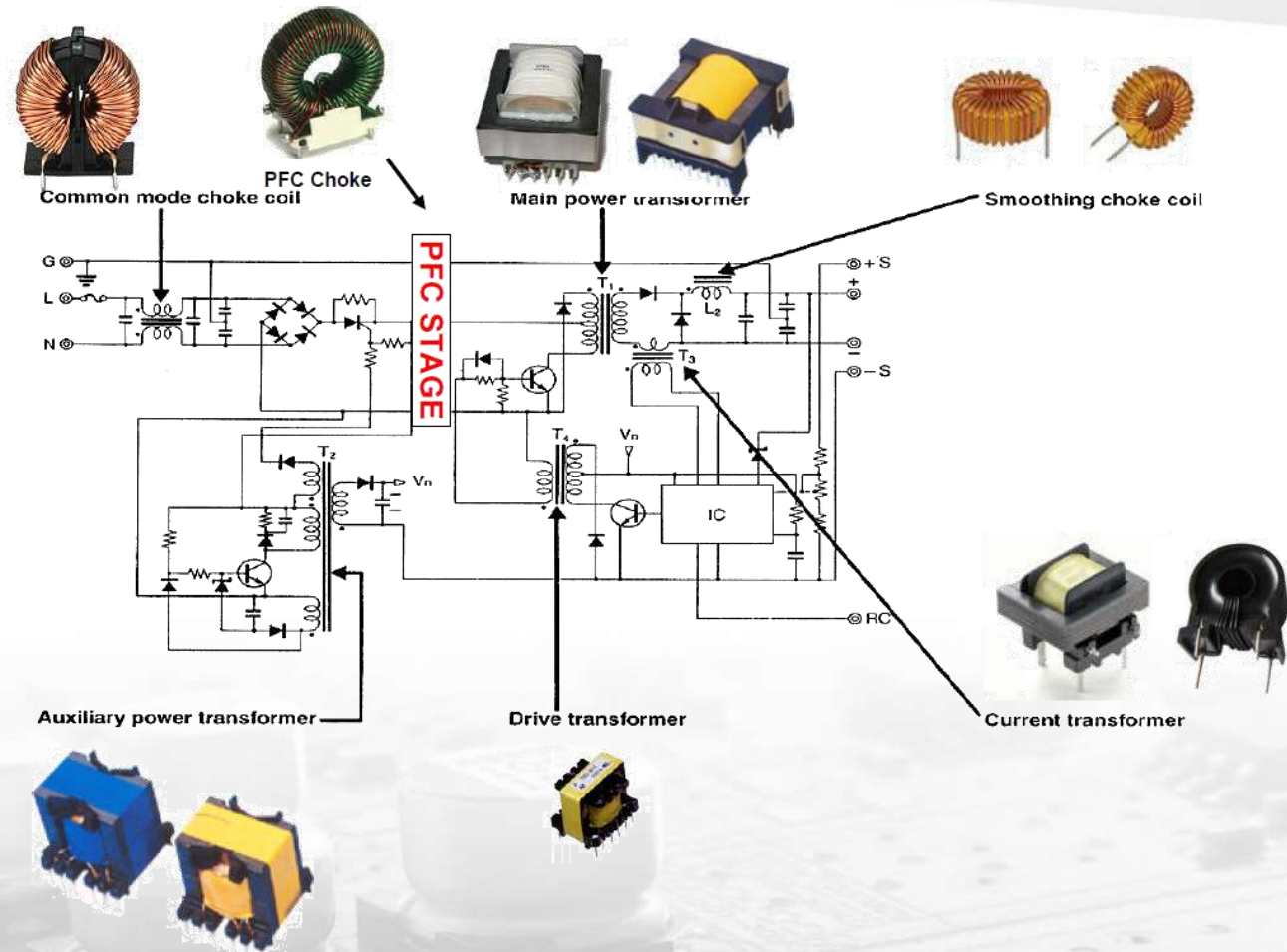
- **Technical advice** in design stages.
- **One Stop Shop**: saving time and cost.
- **Leading Global Supplier** and leaders in the magnetic and circuit protection sector.
- **Own laboratory** for efficiency and temperature tests.
- **Direct and permanent contact** with suppliers.
- Possibility of offering **safety stocks**.
- **Excellent delivery times** and transport management.
- Wide **LINE CARD** and **suppliers** for complete solutions.
- Suppliers with the capacity to manufacture **customized products and large series of standard products**.
- Excellent and flexible logistic service with maritime and / or air shipments. **More than 200 shipments per month**.

Inductors

- Horizontal and vertical mounting toroids.
- Central design chokes with EE and U core.
- Air core coil.
- Radial and axial leaded chokes.
- Surface mount inductors.
- Assembly inductors in printed circuit.
- High voltage inductors.
- Ferrite type shielded inductors.

Current transformers

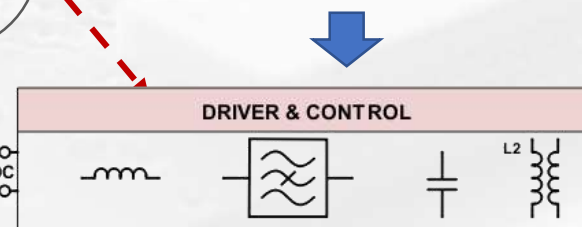
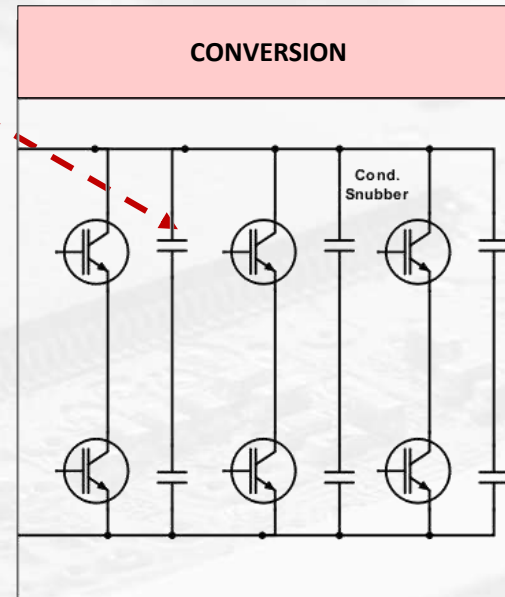
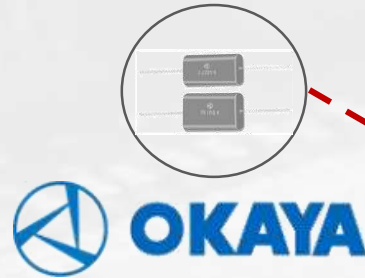
- Low profile design.
- Seven options of relationship of turns.
- Opción plug & play rentable.
- Primary current range from 0.4 to 30A.
- 4,000 Vrms Dielectric strength.
- UL Class B materials.
- Split coil design.



APPLICATION. THREE-PHASE INVERTER STAGE. INVERTER / DRIVER & CONTROL

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- **One Stop Shop**: saving time and cost.
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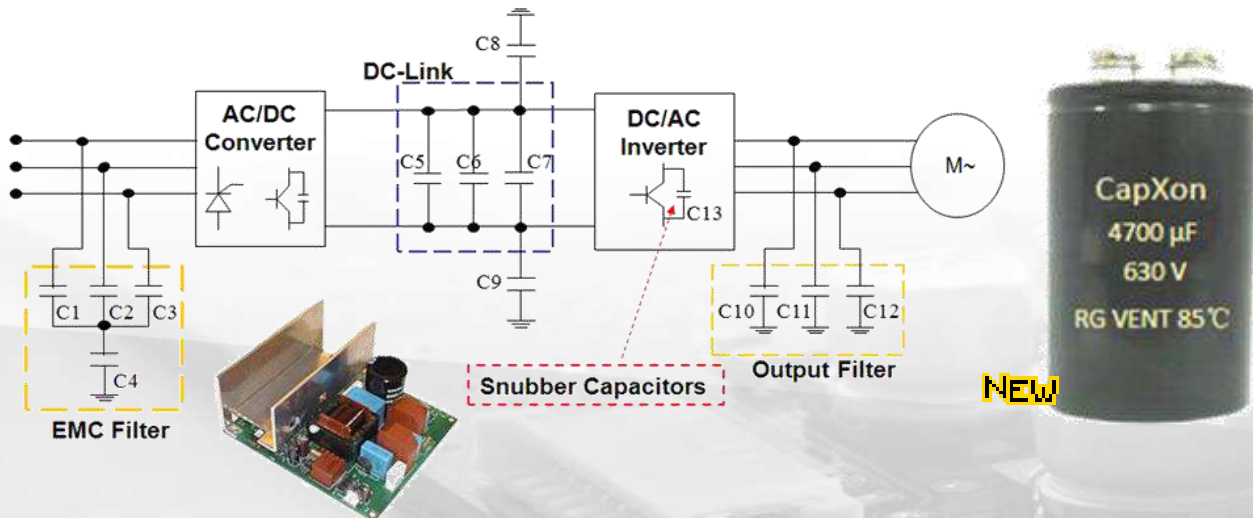


DC BUS ELECTROLYTIC CAPACITOR

CapXon

Website

- **Number 8 ranked in the world** of the Electrolytic Capacitor Market.
- Own production FOIL ETCHING FORMING - high level of innovation in high voltage. (~ 750V).
- Technological leadership in foil, electrolyte and materials in general for the highest levels of demand.
- Oversized productive capacity; High flexibility in delivery terms.
- More than 50% of its operation concentrated in New Energies, Power Electronics and Industrial.
- FAE Team in Europe.
- Invests USD 10M each year in R & D.



Power Electronics v10.18



Professional

Aluminum Electrolytic Capacitors

Conductive Polymer Capacitors

Hybrid Polymer Capacitors

Customized product





Screw
Snap-in
Radial
SMD



Future Markets

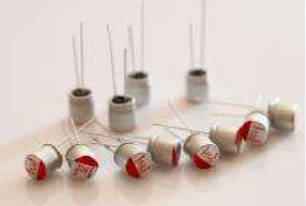

Smart Home	Accuracy / Electromedicine	Automotive	New Energies / Power
Miniaturization		High Temp. 135°C ~ 150°C	High Voltage Range 630 ~ 750V for inverters
Endurance (20.000h ~ 30.000h)		SMD. Endurance 10.000h	Charging Battery 500 ~ 550V
SMD Diameter(D≥18mm)	LC ultra low and losses	High Voltage Polymer 100V ~ 250V	SV 700V Energy Network
Very Low ESR (Polymer Capacitor)	15 years high stability endurance	0 defects	Aero generation / Photovoltaic Endurance 50,000h

ALUMINUM ELECTROLYTIC CAPACITORS

Screw-Type	Snap-In Type	Radial Type	SMD-Type
 <p>Working Voltage: up to 650V Capacitance: up to 1F Very High Ripple Current Low ESR, Low ESL</p>	 <p>Working Voltage: up to 650V Capacitance: up to 100.000µF Lifetime: up to 10.000h High Ripple Current Low ESR, Low ESL</p>	 <p>Working Voltage: up to 550V Endurance: 20.000h High Ripple Current High Temp. 125°C Low ESR, Low Leakage</p>	 <p>Working Voltage: up to 450V Capacitance: up to 6.800µF Size: up to 16x17mm Lifetime: 7.000h High Temp. 125°C High ripple current Low ESR</p>



Conductive Polymer Capacitors

Radial Type	SMD - Type
 <p>Working Voltage: up to 250V Endurance: 5.000h High Ripple Current High Temp. 125°C Low ESR</p>	 <p>Working Voltage: Hasta 100V Endurance: 5.000h High Ripple Current Low ESR.</p>

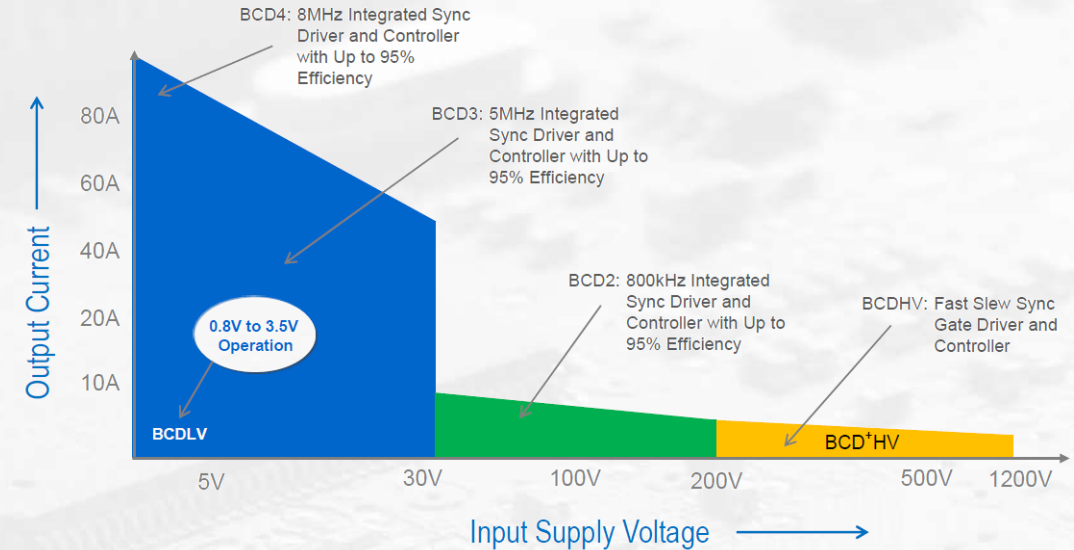
- ✓ Higher Lifetime
- ✓ Higher Ripple Current
- ✓ Low ESR

(Solid) Conductive Polymer Capacitor	(Liquid) Aluminum Electrolytic Capacitor
105°C --> 2.000h	105°C --> 2.000h
95°C --> 6.300h	95°C --> 4.000h
85°C --> 20.000h	85°C --> 8.000h
75°C --> 63.000h	75°C --> 16.000h



- Leading american semiconductor manufacturer. 17.7% CAGR in the last 3 years.
- Most respected semiconductor company award in 2017. Sales exceed \$ 500M.
- High growth in innovation and product development during the previous 2 years.
- <10 FIT in 2.5 billion parts shipped (<1,2 ppm).
- Specialist in DC / DC power supplies.
- Capacity Quality Tests: 200M units / month.
- Customized designs and high level of technical competence.
- Wide catalog of AECQ components with low IQ.
- Offering web tools for design and development.

BEST-IN-CLASS PERFORMANCE



MPS has led the DC / DC market for the last 10 years and owner of BCD processes for energy conversion



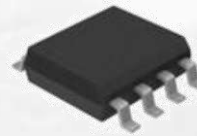
Monolithic IC's
DC-DC, BMS, LED, E-Fuse, Sensors
Motor Drivers, Automotive

AC-DC Power IC's
Flybacks, LED, Rectifiers

mEZ Plug & Play DC-DC Power Modules
Step Down, Step Up, USB, POE

MPM DC-DC Power Modules
Integrated Inductor Encapsulated

1st gen



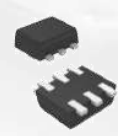
First 2A / 3A sync Buck in SOIC8 (5X6mm) in the world.

2nd gen



First 2A / 3A sync Buck in SOT23 (3X3mm) in the world.

3rd gen



First 2A / 3A sync Buck in SOT23 (3X3mm) in the world.

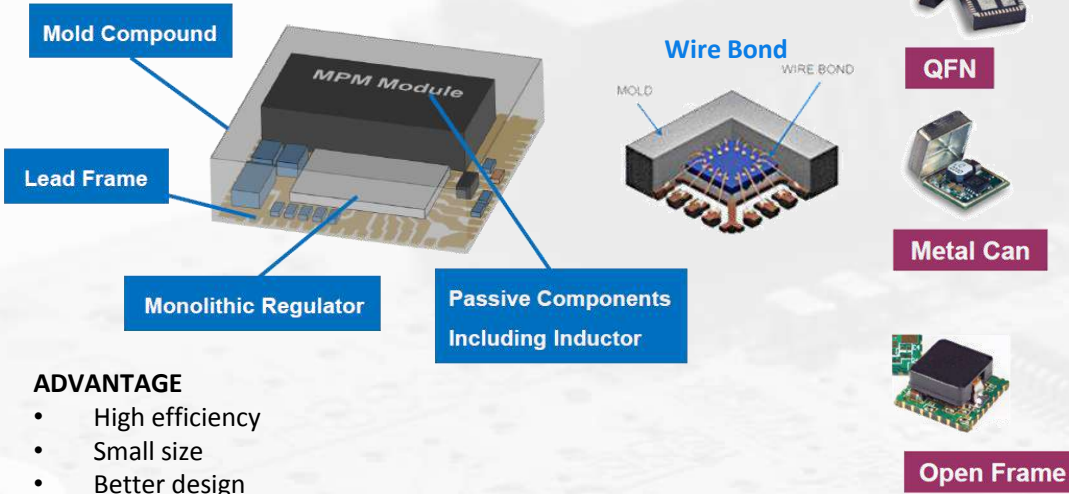


Take a look at the [catalogo...](#)

- DC-DC Power Conversion
- AC-DC Power Conversion
- Class-D Audio
- mEZ Power Modules
- Ultrasound MUX
- Automotive
- EV Kits and EV Boards
- Power Modules
- Motor Drivers & Position Sensors
- E-Fuse, USB & Load Switches
- LED Lighting & Illumination
- Display Backlighting Power
- Precision Analog
- Battery Management

MPM MODULES

Mesh Connect™



ADVANTAGE

- High efficiency
- Small size
- Better design
- No inductance and faster response
- Low noise EMI
- Easy to design

ROADMAP



MPS, leader in the design of power modules, industrial sector and medicine

I _{OUT} /V _{IN}	<6V	<21V	<36V
0.6A	MPM3805 MPM3804	MPM3606 MPM3606A	MPM3506A
1.2A	MPM3810 MPM3811	MPM3610 MPM3610A	MPM3510A
1.5A			MPM3515
2A	MPM3820 MPM38222	MPM3620 MPM3620A	
3A	MPM3830	MPM3630	
4A		MPM3840	
6A		MPM3680	
10A		MPM3682 MPM3695-10	
15A		MPM3684	
20A		MPM3686	
25A		MPM3695-25	

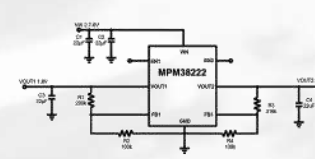
Ease of Design

MPM and mEZ ranges use monolithic integrated circuits with power transistors and control circuitry integrated on a single chip using an advanced BCD (Bipolar – CMOS – DMOS) manufacturing process.

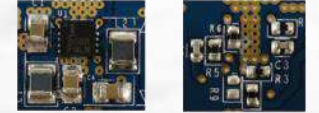
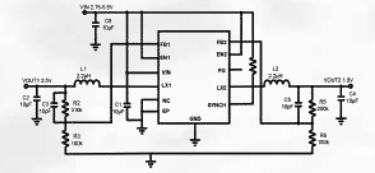
Simple Assembly Process

MPM modules integrate the maximum number of components, including the inductor, while still providing comprehensive flexibility for the designer to tailor the device's attributes.

MPS

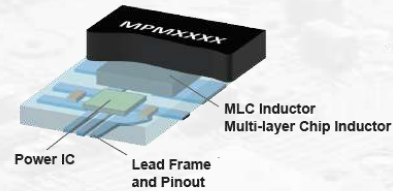


Competitor



MPS

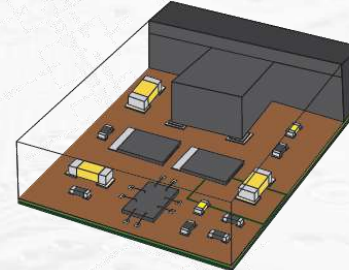
Single-Step Assembly Process



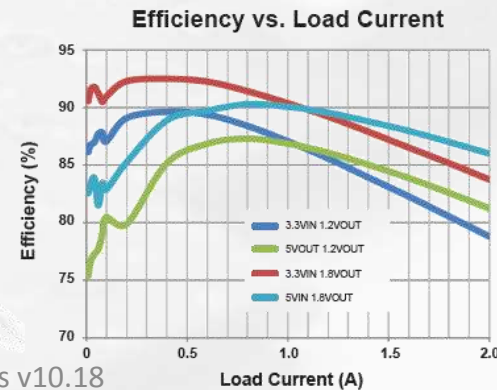
Single-Step Assembly Process

Competitor

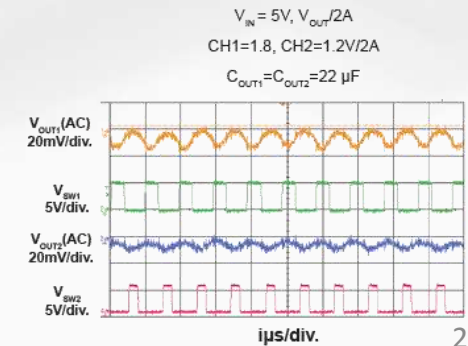
Multi-Step Assembly Process



High Performance - MPS' MPM38222



Output Voltage Ripple



DESIGN TOOLS

MPSMART

Evaluating the performance of MPS products with a general application circuit to optimize design times.

MPS MAGNETIC DESIGN TOOL

The most easiest way to evaluate the quality of a magnetic design, simulate the configuration accuracy for all applications of angular and rotary position sensors.

MPS DC/DC DESIGNER

Helping to choose the best DC / DC regulator and simulating the performance of your application circuit.

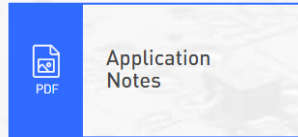
MPS AC/DC MPSMART DESIGN TOOL

Simplifying your design work by evaluating product performance with the design support tool AC / DC Smart.

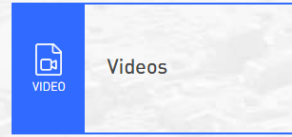
[See more...](#)



Reference Designs



Application Notes



Videos

DC-DC CONVERTERS

1. New Low Voltage Converter
2. High Current (>4A) Buck Products
3. Buck Roadmap 17V/18V, 1A-5A
4. Buck Roadmap 24V, +4A
5. Buck Roadmap 17V/18V, 6A-30A
6. New Boost Products
7. New PMIC Products
8. USB Charger Products
9. Battery Protection
10. Products for E-Bike

1. NEW LOW VOLTAGE CONVERTER

Part Number	I _{out} (A)	V _{in} (V)	I _Q Current (μA)	R _{DS(ON)} (mΩ)	F _{sw} (MHz)	Status	Key Features
MP2141N	1	2.5 - 5.5	20	170/120	1.2	Released	5.5V, 20μA I _Q , 100% DC, lowest cost
MP1606/-xx	2	2.5 - 5.5	25	95/65	1.2	Releasing	Fixed V _{out} versions, PG for fixed version
MP2181/2/3/4	1-4	2.3-5.5	21		1.5	Sampling	External SS and PG, SOT583

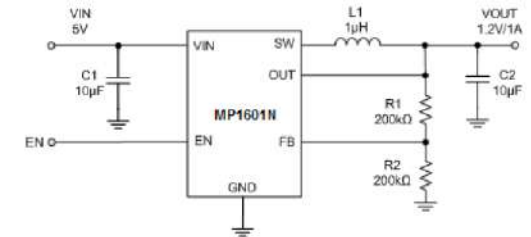
MP2141N – 1A, Sync, Step-Down Switcher

FEATURES

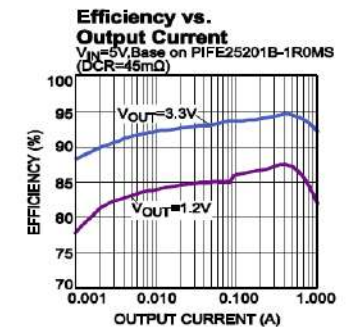
- Low I_Q: 20μA ★
- 1.2MHz Switching Frequency ★
- EN for Power Sequencing
- 1% FB Accuracy
- Wide 2.5V to 5.5V Operating Input Range
- Output Adjustable from 0.6V
- Up to 1A Output Current
- 170mΩ and 120mΩ Internal Power MOSFET Switches
- 100% Duty On
- Output Discharge
- Short-Circuit Protection with Hiccup Mode

APPLICATIONS

- Wireless/Networking Cards
- Portable and Mobile Devices
- Battery-Powered Devices
- Low-Voltage I/O System Power



Available in a SOT563 Package



MÓDULOS DE POTENCIA

ZETTLER GROUP

Website

- Capacity for custom designs.
- Global network of operating companies.
- Production in Europe.
- Diverse magnetic and relay product lines.
- Production technology of the latest technology .
- Demanding quality controls.
- Competitive prices.
- Production scale and management of the world-class supply chain.

High performance



HP SERIES

HP01 SERIES

HP02 SERIES

HP03 SERIES

BP SERIES

BP01 SERIES

ZP SERIES

1W

ZP01 STANDARD SERIES

2W

ZP02 STANDARD SERIES

3W

ZP03 MINI SERIES

ZP03 STANDARD SERIES

5W

ZP05 MINI SERIES

ZP05 ECONOMIC SERIES

ZP05 STANDARD SERIES

ZP05D SERIES

10W

ZP10 MINI SERIES

ZP10 STANDARD SERIES

15W

ZP15 STANDARD SERIES

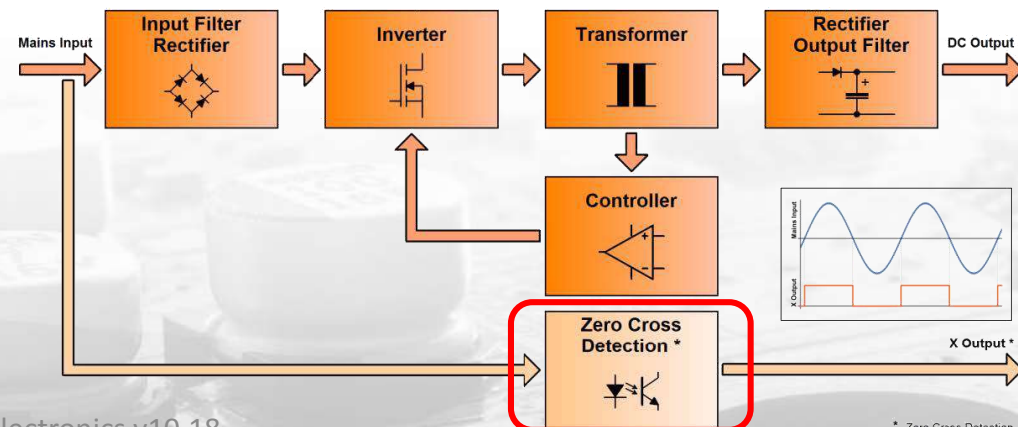
20W

ZP20 STANDARD SERIES



POWER MODULES APPLICATION

- Compact sizes and easy installation.
- High efficiency of the module: >80%
- Wide range of input voltage: 85VAC – 305VAC.
- Useful endurance: MTBF >1 million hours.
- Input voltage frequency up to 400Hz.
- Low consumption <0,1W on standby.
- Built-in current protection.
- Protection over voltages.
- Short circuit protection.
- Incorporated EMI filters Components.
- Standard compliance EN55022 Class B.



¿Who is Eurotronix?



1 State of the Art Electronic Components Distributor

2 Nº 1 on Passive & Electromechanics

3 Sustained growth on market share and customer award

4 Combining competitiveness with wide referenced industrial partners in Europe and Asia

5 Cost Down Specialist

6 Excellent logistic capabilities to bring near production facilities.

7 Integral Supplier Management

8 Sales & Product Manager Team smoothing your daily supply chain process

9 Flexible mentality to meet best solution.

10 30 years + expanding our mission

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POWER ELECTRONICS



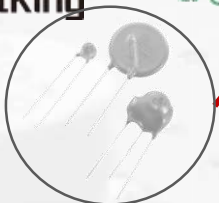
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EXPERT IN PASSIVE PARTS



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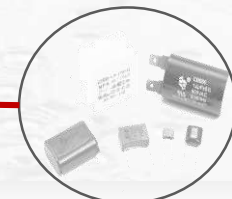
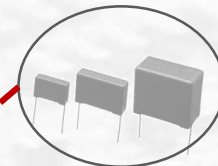
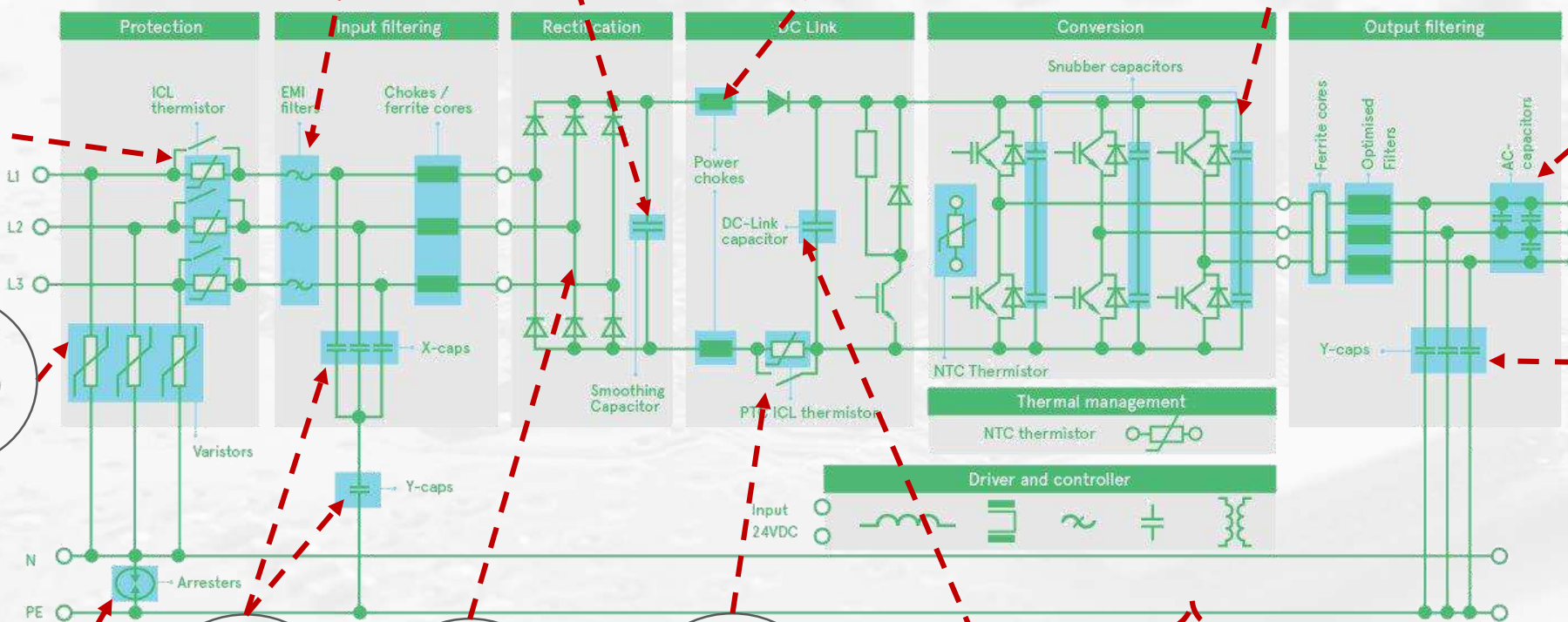
B 君耀电子 BrightKing



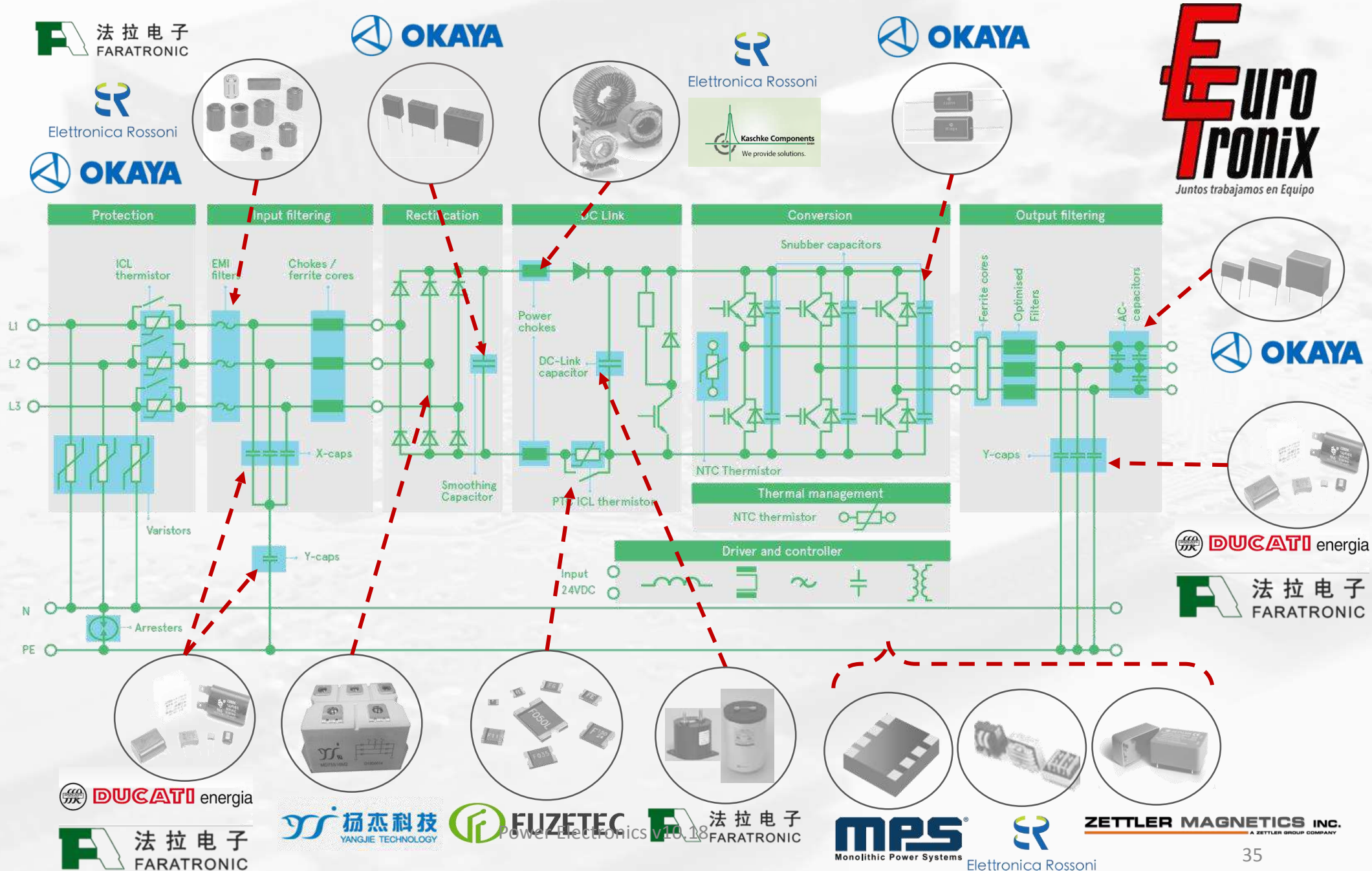
Electronica Rossoni



Juntos trabajamos en Equipo



POWER ELECTRONICS



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Tronix**
Juntos trabajamos en Equipo

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