

PRODUCTS & Solutions



PRESENTATION

Exxelia is a leading designer and manufacturer of **high-reliability passive components** and **electromechanical solutions**. Exxelia was born in 2009 from the merge of several long-established companies with complementary activities and know-hows.

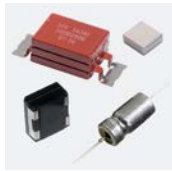
This powerful alliance of expertise enables the Group to provide a **unique and complete product portfolio** commonly used for power electronics, power generation, energy storage, and signal filtering functions in **harsh environments**.



EXPANDING PRODUCT PORTFOLIO



Film & Electrolytic Capacitors



Ceramic & Tantalum Capacitors



Magnetics



RF & Microwave Components



EMI/EMC Filters



Position Sensors & Slip Rings



Precision Mechanics

FROM STANDARD TO CUSTOM DESIGNS

Exxelia has earned international recognition in designing and manufacturing custom passive components that deliver the required performance for any application. As a high-end supplier, Exxelia is involved in most major programs in space, defense and civil aviation industries.

7 MARKETS



Civil aviation



Space



Defense



Transport & Energy



Telecom



Medical



Industry

10 COMPANIES, 1 BRAND

Eurofarad	Exxelia Technologies
Microspire	Exxelia Magnetics
N'Ergy	Exxelia Magnetics
Firadec	Exxelia Tantalum
Sic-Safco	Exxelia Sic Safco
Temex Ceramics	Exxelia Temex
Astema	Exxelia Maroc
Dearborn	Exxelia Dearborn
Raf Tabtronics	Exxelia Raf Tabtronics
DeYoung Mfg	Exxelia DeYoung



is now

EXXELIA AT A GLANCE



1600 
Employees

13 
Manufacturing Locations

Expertise since **1921**

ISO 9001
EN 9100
AS 9100
Certified 

 In more than **28 countries**

1 
Stop Shopping

EXXELIA WORLDWIDE

Exxelia is a global company with manufacturing sites strategically located to cover every continent. Three assembly plants are established in competitive manufacturing countries, enabling the group to provide cost-effective solutions. Thanks to

an extensive sales network covering more than 30 countries, Exxelia is able to provide prompt in-depth technical expertise throughout a project and remain close to its clients at all stages from design to production.

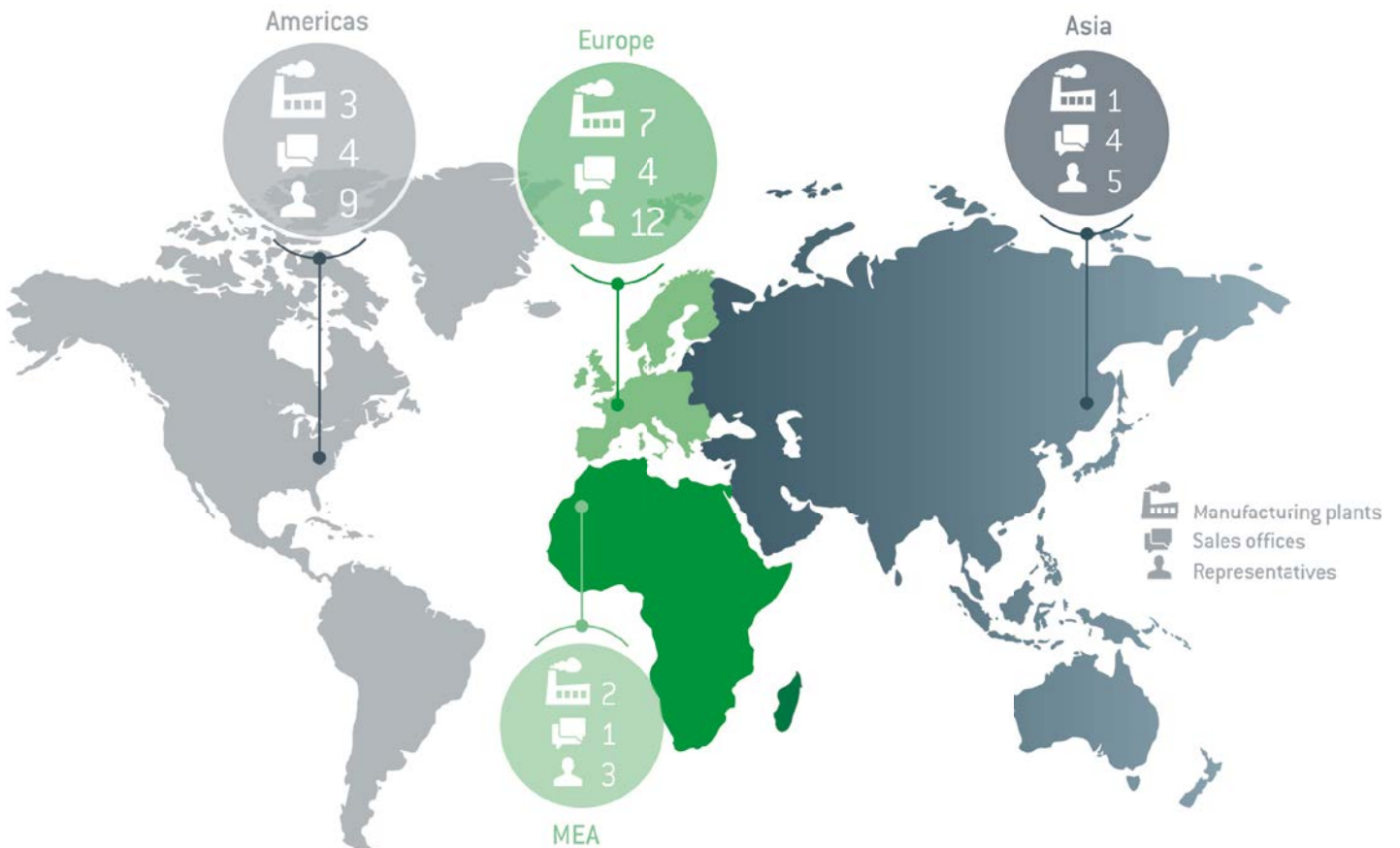
OUR APPROACH

Exxelia focuses its know-how on challenging markets that require high level of technicity and reliability. Our approach is based on three key principles:

FOCUS: serving a limited number of defined markets to deeply understand the needs of those markets.

INNOVATION: Provide new and creative value propositions combining the right products with the expected level of service.

RESPONSIVENESS: Anticipate the markets' needs and respond very quickly.



CERAMIC CAPACITORS



CERAMIC CAPACITORS:

The term «Ceramic capacitor» refers to the dielectric used to make capacitors. The type of ceramic used is a synthetic material obtained by submitting a mixture of carefully selected oxides to a high temperature treatment.

Multi-layer ceramic capacitors are made in the form of monolithic block and contain interleaved metal electrodes. These electrodes are alternately exposed on opposite sides of the package.

Their excellent temperature resistance, high volume/capacitance ratio, electrical properties and reliability make these components ideal for a wide range of fields of application including medical implants, aircraft flight controls, switch-mode power supply in harsh environments, core samplers for petroleum exploration, and space vehicles.

CUSTOM DESIGN CAPACITORS:

If you have the need for special capacitor designs, EXXELIA TECHNOLOGIES will be glad to make recommendations on how best to meet your application needs.



The rigid quality control exercised by EXXELIA TECHNOLOGIES on all its standard production is also applied to custom-fabricated film capacitors. Where necessary, special testing is done to verify requirements, such as low dielectric absorption, ultra-high insulation resistance, low dissipation factor, stability under temperature cycling or under specified environmental conditions, etc.



Feel free to contact EXXELIA TECHNOLOGIES with any request for specific interfaces, package size, characteristics.

		T°	Product range (space grade available in green)		
Standard	Chips	-55°C +125°C	CEC... / CNC ... CEC ... Y (polymer termination) CNC ... Y (polymer termination)		
		Custom chips	-55°C +125°C	CER / CNR 14 - 2 - 12 - CEL / CNL 14 - 2 - 12 C 3 E - C 4 E - C 3 N - C 4 N BPM 12 - BPM 22 - TBC 177... - TBC 277... - BPM 224 - BPM 24	
			Molded class 1	-55°C +125°C	TCE 11 - TCE 13 - TCE 61 to TCE 64 TCE 50/60 - CC 05/06 TCE 52 to TCE 54 TCE 72 to TCE 80 LA 1 to LA 5
	Molded class 2			-55°C +125°C	TCN 52 to TCN 55 TCN 72 to TCN 80 TCN 19 - TCN 50/60 - TCN 30 - TCN 31 - TCN 61 to TCN 64 LA 6 A - LA 6 B CK 05 - CK 06
		Non magnetic Rad.		-55°C +125°C	R14 to S47 S43 to S47
				High voltage	Chips
		Stacks	-55°C +125°C		
	Molded		-55°C +125°C		TCF 178 to 188 - TCF 278 to 288 - TKD 179 to 185 - TKD 279 to 285 TCK 179 to 188 - TCK 279 to 288 - TCL 179 to 188 - TCL 279 to 288 TCF 479 to 488 - TCK 479 to 488 - TCL 479 to 488
		High capacitance	Chips		-55°C +125°C
	Radial			-55°C +125°C	TEP/TEV 53 to 65 SC00 to SC18 - SV01 to SV07 - CNC31 to 34
			Stacks	-55°C +125°C	CNC53 to CNC 65 CEC53 to 65
	Block			-55°C +125°C	TCN83 - TCN86 - TCN87
High temperature			Chips	-55°C +250°C	CEC 203 to CEC 233 - CNC 203 to CNC 233 - CE/CN2X - CE/CN5X
	Mold.			-55°C +200°C	TCE/TCN 201 to 204 - TCE/TCN 252 to 254 TCE 212 to TCE 216 - TCN 212 to TCN 216 TCE 263 to TCE 266 - TCN 263 to TCN 266
		Rad.	-55°C +215°C	TCH 279 to TCH 285	
	Stacks		-55°C +215°C	SCT00 to SCT18	
Power capacitors		Chips/Rad. or ribbon leads	-55°C +125°C	SPT 519 CAW 54 to CAW 65 CEW 54 to CEW 65 CNW 32	

Dielectric material	Capacitance	Voltage	For space grade		Tolerance	Use
			Capacitance	Voltage		
NPO - 2C1 - X7R	1 pF ⇄ 10 μF	16 V ⇄ 1 000 V	1 pF ⇄ 3.9 μF	10 V ⇄ 1 000 V	±1% ⇄ ±20%	Precision, stability, decoupling, SMD.
NPO	1 pF ⇄ 180 nF	16 V ⇄ 1 000 V	1 pF ⇄ 68 nF	10 V ⇄ 100 V	±1% ⇄ ±20%	
2C1 - X7R	10 pF ⇄ 10 μF	16 V ⇄ 1 000 V	10 pF ⇄ 3.9 μF	10 V ⇄ 100 V	±5% ⇄ ±20%	
NPO - 2C1 - X7R	1 pF ⇄ 270 nF	16 V ⇄ 100 V			±1% ⇄ ±20%	Low inductance, Low profile.
NPO - 2C1 - X7R	4.7 pF ⇄ 33 nF	25 V ⇄ 200 V			±1% ⇄ ±20%	Capacitance arrays.
NPO - X7R	10 pF ⇄ 4.7 μF	25 V ⇄ 500 V			±5% ⇄ ±20%	Feed through filters.
NPO - N150	0.5 pF ⇄ 47 nF	50 V ⇄ 100 V			±1% ⇄ ±20%	Precision, stability, epoxy resin molded, through hole components. Axial & Radial leads.
NPO	1 pF ⇄ 22 nF	50 V ⇄ 200 V			±1% ⇄ ±10%	
NPO	1 pF ⇄ 10 nF	63 V ⇄ 100 V			±0.5% ⇄ ±20%	
NPO	1 pF ⇄ 100 nF	63 V ⇄ 200 V			±1% ⇄ ±20%	
Several	1 pF ⇄ 680 nF	25 V ⇄ 63 V			±1% ⇄ ±20%	
2C1 - X7R	10 pF ⇄ 470 nF	63 V ⇄ 500 V			±5% ⇄ ±20%	Decoupling, epoxy resin molded, through hole components. Axial and radial leads.
2C1 - 2C2	22 pF ⇄ 4.7 μF	50 V ⇄ 200 V			±10% ⇄ ±20%	
2C1	10 pF ⇄ 2.2 μF	25 V ⇄ 250 V			±5% ⇄ ±20%	
2C1	100 pF ⇄ 1 μF	25 V ⇄ 63 V			±5% ⇄ ±20%	
BX	10 pF ⇄ 1 μF	50 V ⇄ 200 V			±10% ⇄ ±20%	
X7R - NPO	10 pF ⇄ 1 μF	63 V ⇄ 500 V			±1% ⇄ ±20%	Non magnetic components for Medical applications: • MRI systems and RF generators for MRI • X-ray systems & power suppliers for X-ray
X7R - NPO	180 pF ⇄ 1 μF	63 V ⇄ 500 V			±1% ⇄ ±20%	
NPO - X7R	10 pF ⇄ 39 μF	200 V ⇄ 10 000 V	10 pF ⇄ 6.8 μF	250 V ⇄ 10 000 V	±1% ⇄ ±20%	Power supply, voltage multiplier, radars. • aeronautic • space • defense • railways
N2200	22 pF ⇄ 10 μF	200 V ⇄ 5 000 V	22 pF ⇄ 10 μF	200 V ⇄ 5 000 V	±5% ⇄ ±20%	
NPO - X7R	1 nF ⇄ 15 μF	1 000 V ⇄ 10 000 V			±10% ⇄ ±20%	
N2200	1.2 nF ⇄ 47 μF	200 V ⇄ 5 000 V			±5% ⇄ ±20%	
NPO - X7R	10 pF ⇄ 39 μF	200 V ⇄ 10 000 V	10 pF ⇄ 6.8 μF	250 V ⇄ 10 000 V	±5% ⇄ ±20%	
NPO - X7R	10 pF ⇄ 39 μF	200 V ⇄ 10 000 V	10 pF ⇄ 6.8 μF	250 V ⇄ 10 000 V	±5% ⇄ ±20%	
N2200	22 pF ⇄ 10 μF	200 V ⇄ 5 000 V			±5% ⇄ ±20%	
X7R	47 nF ⇄ 270 μF	50 V ⇄ 500 V			±10% ⇄ ±20%	Power supply, filtering, smoothing, decoupling. • aeronautic • space • defense
X7R	47 nF ⇄ 270 μF	50 V ⇄ 500 V			±10% ⇄ ±20%	
NPO	10 nF ⇄ 6.8 μF	63 V ⇄ 500 V			±10% ⇄ ±20%	
X7R	47 nF ⇄ 400 μF	16 V ⇄ 500 V	1.2 μF ⇄ 68 μF	16 V ⇄ 25 V	±10% ⇄ ±20%	
X7R	100 nF ⇄ 180 μF	50 V ⇄ 500 V	100 nF ⇄ 180 μF	50 V ⇄ 500 V		
NPO	10 nF ⇄ 6.8 μF	63 V ⇄ 500 V	10 nF ⇄ 6.8 nF	50 V ⇄ 500 V	±10% ⇄ ±20%	
X7R	680 nF ⇄ 120 μF	50 V ⇄ 500 V			±10% ⇄ ±20%	
NPO - X7R	1 pF ⇄ 5.6 μF	16 V ⇄ 100 V			±1% ⇄ ±20%	High temperature, • SMD • high capacitance • high voltage • self protected oil drilling, motor control.
NPO - X7R	1 pF ⇄ 1.5 μF	50 V ⇄ 100 V			±1% ⇄ ±20%	
NPO - X7R	10 pF ⇄ 3.9 μF	50 V ⇄ 100 V			±5% ⇄ ±20%	
NPO - X7R	1 pF ⇄ 3.3 μF	25 V ⇄ 500 V			±2% ⇄ ±20%	
X7R	100 pF ⇄ 2.7 μF	200 V ⇄ 3 000 V			±10% ⇄ ±20%	
X7R	47 nF ⇄ 400 μF	16 V ⇄ 500 V			±10% ±20%	
NPO	10 pF ⇄ 5600 pF	550 V ⇄ 6 300 V			±5% ⇄ ±10%	HF - VHF transmission, antenna tuning. • low losses • high current • high voltage
P100	1 pF ⇄ 10 nF	1 000 V ⇄ 3 600 V			±5% ⇄ ±10%	
NPO	4.7 pF ⇄ 15 nF	1 000 V ⇄ 3 600 V			±5% ⇄ ±10%	
X7R	10 nF ⇄ 1 μF	100 V ⇄ 300 V			±10% ⇄ ±20%	

High-Q CAPACITORS

Wide choice of ceramic multi-layer and single layer capacitors mostly intended for applications requiring low losses (low ESR - high Q factor) in a given range of working frequencies and for a specified DC or RF voltage. Capacitors are available either as "chip" or with leads or ribbons. EXXELIA TEMEX is also providing special connections for customized solutions.

The very well known "High Q" series CHA (0505) and CHB (1111) widely used in the world are completed with the "super High Q SHA & SHB" ultra-stable NPO dielectric for a direct superseding when needed. EIA sizes 0402 (SHL) 0603 (SHS) 0805 (SHF) 1206 (SHN) and 1210 (SHT) 250 to 1000 V rated versus selected capacitance are also available. These sizes are mainly used in base stations, power amplifiers, filters and broadcasting.

Frequency range : some MHz up to several GHz. All ranges are RoHS and are also available with non-magnetic terminations.

For High power, high Voltage applications (MRI, NMR, RF generators for laser, plasma applications, power filters), EXXELIA TEMEX propose CP and CL series with two stable dielectric types (NPO and P90) with voltages ranging from 1000 to 7000 V (special range for 5 000 Vrms or more guaranteed). Special assemblies with ribbons are available and can be studied with customers versus actual design consideration.

Non-magnetic terminations also available.



	T°	Type	Product range	Temperature coeff.	Extended temp.*	Capacitance	Tolerance *	Standard voltage *	Use
RF MLCC, low ESR Capacitors	-55°C +125°C	CHA	0505	P100 (100 ± 30ppm/°C)		0.1 ⇔ 100 pF	± 0.05pF ± 10%	250 V	Cellular base station amplifier, MRI
		CHB	1111	P100 (100 ± 30ppm/°C)	Up to +175°C	0.2 ⇔ 1 000 pF		500 V	
		SHA	0505	NPO (0 ± 30ppm/°C)		0.2 ⇔ 100 pF		250 V	Cellular base station equipment, Broadband, Point to point/ multi-point radios, RF generators
		SHB	1111	NPO (0 ± 30ppm/°C)	Up to +175°C	0.3 ⇔ 1 000 pF		500 V	
		SHL	0402	NPO (0 ± 30ppm/°C)		0.1 ⇔ 33 pF		200 V	
		SHS	0603	NPO (0 ± 30ppm/°C)		0.1 ⇔ 100 pF		250 V	
		SHF	0805	NPO (0 ± 30ppm/°C)		0.3 ⇔ 220 pF		250 V	
		SHN	1206	NPO (0 ± 30ppm/°C)		0.5 ⇔ 220 pF		500 V	
		SHT	1210	NPO (0 ± 30ppm/°C)		1 ⇔ 1 000 pF		500 V	
		SHD	0711	NPO (0 ± 30ppm/°C)	Up to +175°C	0.5 ⇔ 100 pF		500 V	
		SHR	0709	NPO (0 ± 30ppm/°C)	Up to +175°C	0.5 ⇔ 100 pF		500 V	
NHB	1111	NPO (0 ± 30ppm/°C)	Up to +175°C	0.3 ⇔ 100 pF	500 V				
RF power capacitors High Q factor	-55°C +125°C	CPX	2225	P100 (100 ± 30)		0.5 ⇔ 2 700pF	± 0.1pF ± 20%	2 500 V	RF power amplifier, Plasma chamber, MRI coils
		CPE	4040	P100 (100 ± 30)		1 ⇔ 10 000 pF		3 600 V	
		CLX	2225	NPO (0 ± 30)		0.3 ⇔ 2 700 pF		2 500 V	
		CLE	4040	NPO (0 ± 30)		1 ⇔ 10 000 pF		3 600 V	

* Depending on capacitance value.
Available extended voltage on request.

MICROWAVE COMPONENTS

FREQUENCY TUNING ELEMENTS:

Those special elements are intended for adjusting a circuit made /using cavities: inserted in the cavity, their capacitive, resistive or inductive characteristics are used to tune the filter accordingly. The "self-locking" system primordial for stability in application when filters are located in outdoor cabinets High Reliability versions are available (space). Custom design upon request.



DIELECTRIC TRIMMERS:

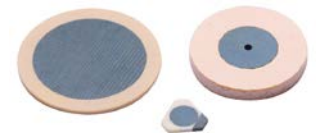
Ceramic dielectric trimmers allows a lot of combinations (capacitance ranges, voltages, temperature coefficient and also mounting methods). "Thin-Trim", Ceratrim, Chip trim are widely used for circuit trimming with high stability. Most of them are SMD and are delivered on tape, are RoHS, and can also be provided in non magnetic version.

Air dielectric trimmer capacitors are designed specifically for RF applications with concentric tubular design. They meet MIL-C-14 409 D, and ESA/SCC n°3010, and are RoHS compliant. They are ideal for applications such as mobile radios, aerospace communications, crystal oscillators and filters, radar and numerous other space, military and industrial applications.

Sapphire dielectric trimmers High "Q" characteristics, High voltage and various mechanical versions, make ideally suited to power applications in filters and high power amplifiers. They can be also offered in non-magnetic version for medical applications.

FERRITE MATERIALS:

Mostly intended for isolator & circulator widely used in radio-communication systems, Ferrite are offered in disk, triangle or custom-designed dimensions. They are based on Temex-Ceramics formulation, providing low ΔH propitious to IMD reduction. Their combination with selected dielectric material allows a choice of FDA apparatus, of repute to save space in isolator/circulator.



RESONATORS:

Several dielectric constant ranging from 24 to 78, provide High "Q" factor for applications 1.5 GHz to 100 GHz through materials [E2000 to E7000]. Wide range of applications in DRO's mass production for satellite reception LNB's, radio-communication, Industrial (motion detection sensor), automotive (anticollision radar) etc... Combination of resonators and tuning elements for cavity filters adjustment on request.

Coaxial resonators are generally used in filters, duplexers, CRO's and VCO's applications within a broad range of frequencies: 300 MHz to 6 GHz. They are provided with several dimensions: 2 x 2 to 12 x 12 mm, allowing the best compromise between impedance, "Q" factor and resonant frequency.

TANTALUM CAPACITORS



Due to technology used and the continuous evolution of tantalum powder, tantalum capacitors offer the highest charge per unit of volume combined with high reliability and durability.

They are used in consumer goods and more specialized niches including space vehicles, aircraft electronics, weapons and rail transport.

EXXELIA TANTALUM develops both solid and wet tantalum capacitors.

Feel free to contact EXXELIA TANTALUM with any request for specific interfaces, package size, characteristics.

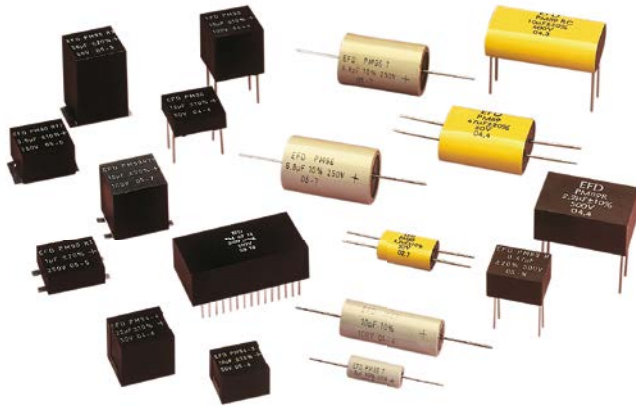


	Product range	Detail specification	Capacitance	Voltage	Operating Temperature	Main features	
Wet tantalum capacitors	Tantalum cases - Axial Polarised types	CT 79 (T3T - 40AW) CT 79 SMD	CECC 30202-005 / 001 / 801 ESCC 3003 / 005	1.7 μ F \Rightarrow 1 200 μ F	6 V \Rightarrow 150 V	-55°C+125°C	High ripple current.
		CT 79E (ST3T - 40AW) CT 79E SMD	CECC 30202-005 / 001 / 801 ESCC 3003 / 005	5.6 μ F \Rightarrow 2 200 μ F	6 V \Rightarrow 150 V	-55°C+125°C	High ripple current. Extended range (CT 79E / SMD).
		CT 79 HT200 - CT 79E HT200 ST 79 HT200	CECC 30202-005 / 001 / 801	1.7 μ F \Rightarrow 2 200 μ F	6 V \Rightarrow 150 V	-55°C+200°C	High capacitance. High Temperature.
		ST 79	DSCC - DWG No. 93026 ESCC 3003 / 006	90 μ F \Rightarrow 1 800 μ F	25 V \Rightarrow 125 V	-55°C+125°C	High capacitance.
		WT 82	-	33 μ F \Rightarrow 82 μ F	160 V \Rightarrow 170 V	-55°C+70°C	High voltage.
		WT 83	-	150 μ F \Rightarrow 10 000 μ F	10 V \Rightarrow 125 V	-55°C+125°C	Extended Capacitance - Enhanced performance High reliability design.
		WT 84	MIL-PRF-39006/33 - DSCC DWG NO 93026	10 μ F \Rightarrow 1800 μ F	25 V \Rightarrow 125 V	-55°C+125°C	Extended Capacitance - Enhanced performance High reliability design.
		CT 9 - CT 9CR (TLT) CT 9E - CT 9ECR (STLT)	CECC 30202-004	3 μ F \Rightarrow 2 200 μ F	6.3 V \Rightarrow 150 V	-55°C+125°C	Silver case. Glass metal seal. Extended range (CT 9E / 9ECR).
	**	CT 4 (TL) / CT 4E (STL)	CECC 30202-003 (CT4) BS 9073 F008 / F032 (CT 4E)	1.7 μ F \Rightarrow 2 200 μ F	6 V \Rightarrow 150 V	-55°C+125°C	Silver case. Seal and resin sealing. Extended range (CT 4E).
	Stackable moulded cases Polarised types	SPE0844 / SPE0844S	BS CECC 30202-009 (SPE0844) CECC 30202-005 / 001 / 801	27 μ F \Rightarrow 6 000 μ F	6 V \Rightarrow 375 V	-55°C+125°C	
AP 31		-	168 μ F \Rightarrow 30 000 μ F	10 V \Rightarrow 150 V	-55°C+125°C	Parallel, serie connected. Reverse voltage. High ripple current.	
AP 41		-	330 μ F \Rightarrow 40 000 μ F	10 V \Rightarrow 150 V	-55°C+125°C	(The module incorporate CT 79 / CT 79 E)	
AS 31		-	27 μ F \Rightarrow 733 μ F	150 V \Rightarrow 450 V	-55°C+125°C		
Solid tantalum capacitors	Hermetically sealed metal cases Axial - Polarised types	CTS 1 (SI 125)	CECC 30201-001 / 002 / 801 CEI-300201-FR0001	0.1 μ F \Rightarrow 330 μ F	6.3 V \Rightarrow 125 V	-55°C+125°C	Standard range. General purpose +125°C.
		CTS 13 (SI 85)	CECC 30201-005	0.1 μ F \Rightarrow 330 μ F	6.3 V \Rightarrow 63 V	-55°C+85°C	Standard range. General purpose +85°C.
		CTS 32 (IS 125)	CECC 30201-019	1 μ F \Rightarrow 330 μ F	6.3 V \Rightarrow 63 V	-55°C+125°C	Standard range. High surge current. Reverse voltage.
		CTS 23 (SIS 125)	CECC 30201-025	0.1 μ F \Rightarrow 1 200 μ F	6.3 V \Rightarrow 63 V	-55°C+125°C	Extended range. General purpose.
		CTS 33 (SISFR 125)	CECC 30201-026	0.1 μ F \Rightarrow 1 000 μ F	6.3 V \Rightarrow 63 V	-55°C+125°C	Extended range. Low leakage current.
		CTS 21 (SIZR 125) CTS 21E (SISZR 125)	CECC 30201-040 ESCC 3002 / 003 (CTS 21E)	5.6 μ F \Rightarrow 1 000 μ F	6.3 V \Rightarrow 63 V	-55°C+125°C	Low ESR. High ripple current. High surge current. Extended range (CTS 21E).
		* CTS 20 (NSI 125) CTS 20E (SNIS 125)	CECC 30201-022 (CTS 20)	0.22 μ F \Rightarrow 560 μ F	6.3 V \Rightarrow 63 V	-55°C+125°C	Cathode to cathode coupling of two CTS 1 or 23.
	Moulded cases Radial Polarised	CTS 41 (SBM 41) CTS 41RSE (FR 125)	CECC 30201-037	0.1 μ F \Rightarrow 150 μ F	6.3 V \Rightarrow 50 V	-55°C+125°C	Miniature 125°C. High surge current. Reverse voltage. Low ESR (CTS 41RSE).
		CTS 4 (SBM R)	CECC 30201-003	0.1 μ F \Rightarrow 150 μ F	6.3 V \Rightarrow 50 V	-55°C+85°C	Miniature. General purpose +85°C.
		CTC 3 / CTC 3E	CECC 30801-009 / 801 (CTC 3)	0.1 μ F \Rightarrow 680 μ F	4 V \Rightarrow 50 V	-55°C+125°C	Standard chip size. General purpose. Extended range (CTC 3E).
	Moulded cases - SMD surface mount - Polarised types	CTC 4	CECC 30801-011	0.1 μ F \Rightarrow 100 μ F	6.3 V \Rightarrow 50 V	-55°C+125°C	Standard chip size. General purpose. High surge current.
		CTC 4 RSE	-	4.7 μ F \Rightarrow 1 000 μ F	6.3 V \Rightarrow 50 V	-55°C+125°C	Low ESR. High ripple current. High surge current.
		CTC 21 / CTC 21E	CECC 30801-013 ESCC 3012/002 (CTC 21) 003 (CTC 21E)	5.6 μ F \Rightarrow 680 μ F	6.3 V \Rightarrow 100 V	-55°C+125°C	Low ESR. High ripple current. High surge current. Extended range (CTC 21E).
		CTC 23	-	15 μ F \Rightarrow 1 000 μ F	6.3 V \Rightarrow 63 V	-55°C+125°C	General purpose. Extended range.
		CTC 42 / CTC 42E	-	12 μ F \Rightarrow 1 500 μ F	6.3 V \Rightarrow 80 V	-55°C+125°C	Two CTC 21 assembly. Extended range (CTC 42E).
		CTP 21	-	22 μ F \Rightarrow 560 μ F	16 V \Rightarrow 100 V	-55°C+105°C	Very low ESR. High ripple current. High surge current. No thermal ignition.
CTP 42		-	47 μ F \Rightarrow 1 200 μ F	16 V \Rightarrow 100 V	-55°C+105°C	Two CTP 21 assembly.	

* Hermetically sealed metal cases - Axial leads - Non polarised types

** Silver cases - Axial leads - Polarised types

FILM CAPACITORS



PLASTIC FILM CAPACITORS:

EXXELIA TECHNOLOGIES and EXXELIA DEARBORN film capacitor product lines include a wide array of catalog products using state of the art technologies combined with the latest developments in dielectric films (including polyester, polypropylene, P.P.S, and teflon). Kraft/paper, foil capacitor, and metallized film capacitor products are available. Defense film capacitors are tested and qualified to defense standards, with more than 30 defense qualified products.

A wide selection of packaging designs are available such as SMD film-wrapped, pre-molded epoxy cases, and hermetically sealed metal cases.



409P



CQ 72

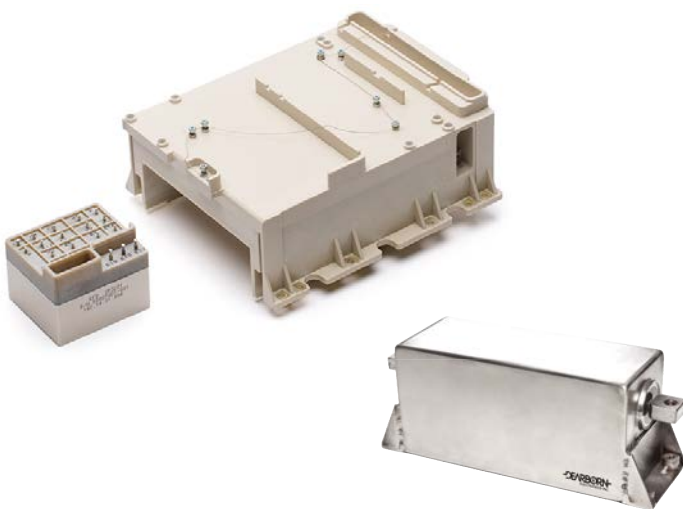


CP53/54/55

CUSTOM DESIGN CAPACITORS:

EXXELIA GROUP offers a wide range of custom design capabilities with respect to Temperature, Capacitance, Frequency and Voltage requirements.

Strong heritage, high reliability and quality of EXXELIA GROUP make them perfectly suitable for all challenging environmental conditions and specific interfaces.



	T (°C)	Product range (space grade available in green)
Polyester for or S.M.P.S.	-55°C +125°C (+155°C)	PM 89 - PM 90 (S) - PM 94(S)
		PM 96(S) - PM 96 T(S) - MKT(S)
		PM 948(S) - PM 907(S)
		PHM 912
Polyester	-55°C +125°C	PM 50 - PM 60
		PM 7 - PM 12 - PM 720 - PM 730
		MPA HT - MRA HT
		BIK-X2/Y - BIK P-X/Y - BIK CR
		205P
		218P
		410P
		430P
		431P
		442P
		CP53 / 54 / 55
		409P
Polycarbonate / Polyphenylene Sulfide (P.P.S. suffix T)	-55°C +125°C	A 64 S4 (T) - A 74 S4 (T) - PMR 4 (T)
		MPA 4 - MKB 4
		KCP 4 UA T
		KSP 4 UA T
		K1PE T
		KM 501-601(T) - KM 50-60(T)
		KM 111 (T)(S)
		KM 311-21-711-7 (T)
		KM 78 - 82 - 90 - 97 (T)
		PMR 64 (T) - PMA 64 (T)
		PM 67 (T) - PM 72 (T)
		KM 94 (S)
KM 915		
Polyphenylene Sulfide (P.P.S.)	-55°C +125°C	810P
		820P
		832P
		842P
		859P
		860P
		882P
		PRF-83421/06
		880P
poly-tyrene	-55°C +85°C	PLS 3 - PLS 5 - PLS 7 - PLS 8
High voltage	-55°C +125°C	HT 72 - HT 77
		HT 96 - HT 78(P)(S) - HT 86 (P)(S) - HT 97(P)(S)

Dielectric	Capacitance	Tolerance	Voltage	Qualification	Use
Metallized polyester (P.E.T.)	8.2 nF ⇔ 150 μF	± 5 % ⇔ ± 20 %	50 V ⇔ 630 V	ESA/ESCC (EPPL, OPL) in house (PM 89)	High frequency switch mode power supplies, SMD. • defense • aeronautic • space
	33 nF ⇔ 100 μF	± 5 % ⇔ ± 20 %	25 V ⇔ 630 V	Acc. ESA	
	22 nF ⇔ 180 μF	± 10 % ± 20 %	63 V ⇔ 1250 V	ESA / ESCC	
Metallized plastic film	1.8 μF ⇔ 68 μF	± 10 % ± 20 %	250 V ⇔ 1000 V	in house	
Metallized polyester	1 nF ⇔ 22 μF	± 5 % ⇔ ± 20 %	40 V ⇔ 630 V	CECC / IEC	Standard applications.
	82 pF ⇔ 10 μF	± 5 % ⇔ ± 20 %	63 V ⇔ 630 V	CECC / IEC	
	1 nF ⇔ 4.7 μF	± 5 % ⇔ ± 20 %	1000 V ⇔ 15000 V	in house	
Metallized polyester Metallized polypropylene	1 nF ⇔ 6.8 μF	± 5 % ⇔ ± 20 %	400 V _{DC} - 250 V _{AC}	in house	
Polyester (P.E.T.)	1 nF ⇔ 0.5 μF	± 20% ⇔ ± 10%	2 000 ⇔ 10 000 V		High Voltage
	1 nF ⇔ 12.0 μF	± 20% ⇔ ± 5%	100 ⇔ 400 V	MIL QPL	
	1 nF ⇔ 5.0 μF	+20% -10% ⇔ ± 10%	50 ⇔ 600 V		
	1 nF ⇔ 10.0 μF	± 20% ⇔ ± 5%	63 ⇔ 16 000 V		High Voltage
	10 nF ⇔ 15.0 μF	± 20% ⇔ ± 5%	63 ⇔ 630 V		
	10 nF ⇔ 10.0 μF	± 20% ⇔ ± 5%	63 ⇔ 400 V		AC / DC Current
	50 nF ⇔ 10.0 μF	+20 -10% ⇔ ± 10%	100 ⇔ 1 000 V		
	1 nF ⇔ 1.0 μF	+20% -10% ⇔ ± 10%	100 ⇔ 1 000 V	MIL QPL	
	0.10 μF ⇔ 0.5 μF	+20% -10% ⇔ ± 10%	50 ⇔ 1 000 V		EMI Suppression
Metall. polycarbo. / P.P.S.	1 nF ⇔ 33 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 630 V	NF F 62 102	
Metallized polyester	1 nF ⇔ 22 μF	± 5 % ⇔ ± 20 %	40 V ⇔ 630 V	NF F 62 102	
Film-foil / P.P.S.	7.5 nF ⇔ 77.7 nF	± 2 % ± 5 %	630 V ⇔ 1000 V	Acc. NF F 62 102	Safety capacitors for signalling and others railways applications.
Film-foil / P.P.S.	10 nF ⇔ 0.2 μF	± 1 % ⇔ ± 20 %	400 V ⇔ 1500 V	Acc. NF F 62 102	
Metallized P.P.S.	10 nF ⇔ 3.3 μF	± 1 % ⇔ ± 20 %	400 V ⇔ 630 V	NF F 62 102	
Metallized polycarbonate / P.P.S.	1 nF ⇔ 22 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 630 V	CECC	Precision capacitors (Capacitance stability, low tolerance) Measurement, control electronics. AC filtering (400 Hz and others).
	1 nF ⇔ 10 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 400 V	ESA (EPPL) / CECC	
	1 nF ⇔ 22 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 630 V	CECC	
	1 nF ⇔ 10 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 208 V	in house	
	470 pF ⇔ 22 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 630 V	in house	
	1 nF ⇔ 15 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 208 V	in house	
Metallized P.P.S.	1 nF ⇔ 1.2 μF	± 1 % ⇔ ± 20 %	40 V ⇔ 100 V	ESA/ESCC (EPPL)	High stability, SMD.
	1.5 nF ⇔ 2.7 μF	± 5 % ⇔ ± 20 %	250 V _{DC} ⇔ 630 V _{DC} 150 V _{AC} ⇔ 400 V _{AC}		AC Filtering
Polyphenylene Sulfide (P.P.S.)	1 nF ⇔ 1.0 μF	± 20% ⇔ ± 5%	50 ⇔ 400 V		Precision capacitors Low TCC
	10 nF ⇔ 15.0 μF	± 10% ⇔ ± 1%	50 ⇔ 400 V	MIL QPL	
	1 nF ⇔ 10.0 μF	± 10% ⇔ ± 2%	63 ⇔ 400 V		
	10 nF ⇔ 15.0 μF	± 10% ⇔ ± 2%	50 ⇔ 200 V		
	10 nF ⇔ 10.0 μF	± 20% ⇔ ± 5%	80 ⇔ 440 V _{RMS}	MIL QPL	
	10 nF ⇔ 10.0 μF	± 20% ⇔ ± 5%	126 ⇔ 250 V _{RMS}	MIL QPL	
	1 nF - 0.22 μF	± 10% ⇔ ± 2%	200 V		
	1 nF ⇔ 22 μF	± 10% ⇔ ± 0.25%	30 ⇔ 400 V	MIL QPL	
	4.7 nF ⇔ 10.0 μF	± 10% ⇔ ± 2%	50 ⇔ 400 V		
Polystyrene + foil	10 pF ⇔ 1 μF	± 1 % ⇔ ± 5 %	63 V ⇔ 500 V	CCTU/CECC	Filtering, frequency tuning.
Composite resin impregnated	100 pF ⇔ 4.7 μF	± 5 % ⇔ ± 20 %	630 V ⇔ 25 000 V	in house	High voltage filtering. • defense • aeronautic • space
Reconstituted mica resin impregnated	100 pF ⇔ 2.2 μF	± 5 % ⇔ ± 20 %	630 V ⇔ 20 000 V	ESA/ESCC (QPL HT96) Acc. ESA/ESCC (HT97)	

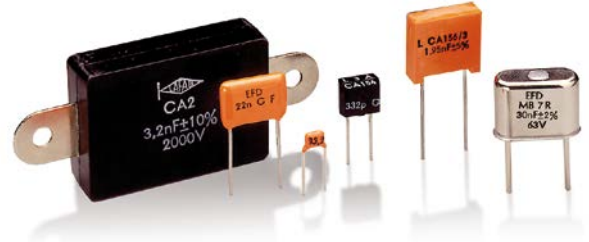
FILM CAPACITORS



EXXELIA TECHNOLOGIES and EXXELIA DEARBORN film capacitors have exceptional stability, low-loss, long life, and high reliability. They are exceptional for pulse/storage, DC link, energy discharge, and custom applications.

MICA CAPACITORS:

This natural mineral insulator has outstanding dielectric properties that are ideal for long-life high-stability capacitors with low loss at all frequencies, and high dielectric strength. This type of capacitor is used particularly for high frequency and delay line applications, oscillating circuits, emission devices and calibrators.



	τ	Product range (space grade available in green)	Dielectric	Capacitance	Tolerances	Voltage range	Qualification	Use
Metallized polypropylene	(-55) -40°C +85°C (+105)	PP 04 - PP 05	Metallized polypropylene	330 pF \Rightarrow 6.8 μ F	$\pm 5\%$ $\pm 10\%$	250 V \Rightarrow 2 500 V	in house	High current pulses, protection circuit high frequencies.
		PP 3 A - PP 3 M PR 3 A - PR 3 M	Metallized polypropylene+foil	680 pF \Rightarrow 1 μ F	$\pm 5\%$ \Rightarrow $\pm 20\%$	630 V \Rightarrow 3 500 V	in house	AC and pulse current.
		PM 98 - PM 980 - PM 981	Metallized plastic film	25 μ F \Rightarrow 1 600 μ F	$\pm 10\%$ $\pm 20\%$	300 V \Rightarrow 1 200 V	in house	Filtering, energy storage, flash.
		PP 78 A - PP 78 R - PP 78 S	Metallized polypropylene	1 nF \Rightarrow 10.2 μ F	$\pm 1\%$ \Rightarrow $\pm 20\%$	160 V \Rightarrow 630 V	UTEK/NFC	AC/DC current, standard applications.
		PPS 13 - PPS 16 A - PPS 16 R PP 318 - PP 418	Polypropylene + foil	100 pF \Rightarrow 603 nF	$\pm 1\%$ \Rightarrow $\pm 20\%$	63 V \Rightarrow 1000 V	in house	AC/DC and pulse current.
		RA ... - PS ...	Metallized polypropylene+foil	100 pF \Rightarrow 22 μ F	$\pm 1\%$ \Rightarrow $\pm 20\%$	630 V \Rightarrow 2 000 V	in house	AC and pulse current.
		Polypropylene (P.P)	-55 +70 -55°C +105°C	682P	Polypropylene (P.P)	5.0 μ F \Rightarrow 100 μ F	+20% -10%, $\pm 10\%$	800 \Rightarrow 1 200 V
684P	5.0 μ F \Rightarrow 175 μ F			+20% -10%, $\pm 10\%$		400 \Rightarrow 1 000 V		
730G	0.01 μ F \Rightarrow 2.5 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		850 \Rightarrow 3 000 V		AC / & Snubber.
781P	18.0 μ F \Rightarrow 400.0 μ F			$\pm 20\%$ \Rightarrow $\pm 10\%$		600 \Rightarrow 1 800 V		
700P	0.01 μ F \Rightarrow 1.0 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		200 \Rightarrow 800 V		
709G	1 nF \Rightarrow 4.7 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		160 \Rightarrow 2 000 V		AC / DC & Pulse current.
710P	1 nF \Rightarrow 1.0 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		200 \Rightarrow 800 V	MIL QPL	
730P / 731P	22 nF \Rightarrow 10.0 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		160 \Rightarrow 630 V		AC / DC & Pulse current.
734G	0.47 μ F \Rightarrow 10.0 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		400 \Rightarrow 600 V		Low inductance.
735P	1.0 μ F \Rightarrow 30.0 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		100 \Rightarrow 400 V	MIL QPL	SMPS
744G	0.47 μ F \Rightarrow 3.5 μ F			$\pm 20\%$ \Rightarrow $\pm 5\%$		600 V		
752P	0.10 μ F \Rightarrow 2.5 μ F	$\pm 20\%$ \Rightarrow $\pm 5\%$	800 \Rightarrow 3 000 V		IGBT Snubber.			
Paper / Foil	-55°C +125°C	118P	Paper / Foil	1 nF \Rightarrow 12.0 μ F	$\pm 20\%$ to $\pm 5\%$	200 \Rightarrow 1 000 V	MIL QPL	Bypass, coupling
		103P		1 nF \Rightarrow 1.0 μ F	$\pm 20\%$ to $\pm 10\%$	200 \Rightarrow 600 V	MIL QPL	RFI
		911P		0.10 μ F \Rightarrow 2.7 μ F	10%	400 V		
		CL53/54/55		0.05 μ F \Rightarrow 10 μ F	+20% -10%. $\pm 10\%$	100 \Rightarrow 1 000 V	MIL QPL	Bypass, coupling, filtering High temperature +200°C
		131P		1 nF \Rightarrow 1.0 μ F	$\pm 20\%$ to $\pm 5\%$	200 \Rightarrow 1 000 V	MIL QPL	
		CQ72		0.10 μ F \Rightarrow 15.0 μ F	$\pm 20\%$ \Rightarrow $\pm 10\%$	400 \Rightarrow 12 500 V	MIL QPL	High Voltage
		282P		10.0 μ F \Rightarrow 200 μ F	+20% -10%. $\pm 10\%$	2 000 \Rightarrow 4 000 V		Energy storage
681P	5.0 μ F \Rightarrow 100 μ F	+20% -10%. $\pm 10\%$	1 000 \Rightarrow 2 500 V		Energy storage			
Power electronics	(-55) -40°C +85°C (+100)	PPA - PPA FR - PPA M	Metallized polypropylene	1.5 μ F \Rightarrow 260 μ F	$\pm 5\%$ \Rightarrow $\pm 20\%$	260 V _{AC} \Rightarrow 900 V _{AC}	in house	Motor run, fluorescence, compensation.
		PP 44 R/A - PP 411 PP 44 RS - 44 A2		0.1 μ F \Rightarrow 400 μ F	$\pm 5\%$ \Rightarrow $\pm 20\%$	300 V \Rightarrow 2400 V	in house	IGBT capacitors, protection / turn off thyristors GTO, medium frequency tuning.
		PP 88 - IGB 99		47 nF \Rightarrow 7.5 μ F	$\pm 5\%$ \Rightarrow $\pm 20\%$	800 V \Rightarrow 4000 V 1.5kV _{GTO} \Rightarrow 5.6kV _{GTO}	in house	
		PLP ... - PAM ...	Impregnated P.P + paper	22 nF \Rightarrow 300 μ F	$\pm 5\%$ \Rightarrow $\pm 20\%$	160 V \Rightarrow 10000 V	in house	Commutation, rapid discharges, energy storage, filtering, protection.
		BI 73 A - BI 73 R R 73 A - R 73 R	Bi-film Polyester + foil	1 nF \Rightarrow 2.2 μ F	$\pm 5\%$ \Rightarrow $\pm 20\%$	1000V _{DC} \Rightarrow 2200 V _{DC} Ucrete \Rightarrow 5000 V	in house	Filtering, protection.
Mica	-55°C +125°C	CA 1 - CA 2 CA 17 to CA 19	Silvered mica	4.7 pF \Rightarrow 100 nF	± 0.5 pF or $\pm 1\%$ \Rightarrow $\pm 10\%$	500 V \Rightarrow 5000 V	CECC Acc. MIL C 5	Filtering circuits, delay line circuits, oscillators, pulse circuits, H.F. generators, emission lines, D.C. blocking circuits, coupling, measurement...
		CA 15 - 20 - 30 - 40 CA 152 to 158		4.7 pF \Rightarrow 15 nF	± 1 pF or $\pm 1\%$ \Rightarrow $\pm 10\%$	63 V \Rightarrow 500 V		
		CM 04 to CM 12 CMR 03 to CMR 07		1 pF \Rightarrow 91 nF	± 0.5 pF or $\pm 1\%$ \Rightarrow $\pm 5\%$	50 V \Rightarrow 500 V		

ELECTROLYTIC ALUMINUM CAPACITORS

Due to their technology electrolytic aluminum capacitors are polarised and can deliver the highest capacitance values of all capacitors families (up to 2.2 Farads).



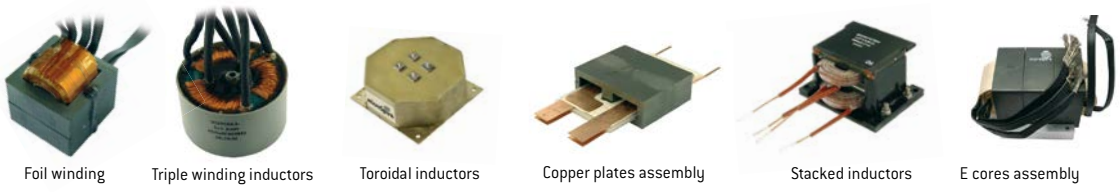
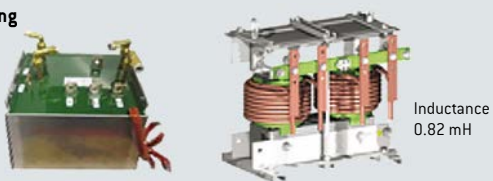
Because EXXELIA SICSAFCO manufacture their own electrolytes, our capacitors show the largest lifetime of the market.

Therefore they are used in D.C. voltage applications for storing energy (lightning flash-lamps, welding machines, radiology, radars...) and time delay devices.



	Product range	Sizes Ø x h (mm)	Capacitance	Voltage	Main characteristics
Screw terminals	FELSIC 125FRS	36x52 to 90x145	220 to 150 000 µF	16 to 350 V	Low ESR, +125°C
	FELSIC 105TFRS	36x47 to 77x144	470 to 68 000 µF	10 to 100 V	Very low ESR
	FELSIC HV	51x81 to 90x200	1 000 to 47 000 µF	160 to 450 V	Extreme Long life, High ripple
	FELSIC 105	36x52 to 90x200	100 to 470 000 µF	16 to 450 V	Extreme Long life
	FELSIC 105 LP	90x67	1 500 to 220 000 µF	10 to 450 V	105 with Low Profile can
	FELSIC CAPAX	36x44 to 90x200	100 µF to 2.2 F	10 to 500 V	High energy density
	FELSIC 85	36x52 to 90x200	68 to 680 000 µF	10 to 630 V	Standard 85°C
	FELSIC 85M	36x52 to 90x200	68 to 680 000 µF	10 to 630 V	Standard 85°C ±20% tolerance
Radial leaded type	FELSIC 039- FELSIC 037	36x47 to 77x144	100 to 150 000 µF	10 to 400 V	Standard C039 type (railway maintenance standard)
	ALSIC 145	10x16 to 16x25	22 to 4 700 µF	10 to 100 V	High temperature range, Long life
	ALSIC 145 20g	18x20 to 22.5x25	470 to 2 200 µF	10 to 115 V	High temp. range, Long life, withstand 20g vibrations
	CUBISIC	35x35x16. 35x50x16	100 to 33 000 µF	10 to 450 V	Non cylindrical case, Withstand 20g vibrations, High energy density
	CUBISIC LP	45x35x12 to 45x75x12	220 to 68 000 µF	10 to 400 V	Non cylindrical case, Withstand 20g vibrations, High energy density
	ALSIC IR	10x16 to 16 x25	15 to 5 600 µF	10 to 100 V	Standard radial type
	ALSIC HV	10x16 to 35.5x40	10 to 2 200 µF	160 to 500 V	Standard radial type
	ALSIC 20g	18x20 to 35.5x25	33 to 80 000 µF	10 to 500 V	Withstand 20g vibrations
Snap in type	Snapsic 125	22x25 to 35x50	470 to 47 000 µF	16 to 100 V	High temperature range, Long Life
	Snapsic HV	22x25 to 35x50	47 to 2 200 µF	160 to 500 V	Long Life, High ripple current
	Snapsic 105	22x25 to 35x50	22 to 68 000 µF	16 to 500 V	Standard 105°C type
	Snapsic 105 4P	35x50 to 45x75	330 to 150 000 µF	16 to 550 V	Standard 105°C type with 4Pins
	Snapsic 105 LP	45x21 to 45x40	150 to 68 000 µF	16 to 500 V	Low Profile 105°C with 4 Pins
	Snapsic Capax	22x25 to 35x50	33 to 47 000 µF	25 to 500 V	High energy density
	Snapsic	22x25 to 35x50	22 to 47 000 µF	16 to 500 V	Standard 85°C type
Axial type	Snapsic 4P	35x50 to 45x100	330 to 150 000 µF	16 to 500 V	Standard 85°C type with 4 Pins
	Prorsic 145	14x30 to 25x75	6.8 to 10 000 µF	16 to 450 V	High temperature Long life
	Vacsic 150	14x30 to 16x30	6.8 to 3 300 µF	16 to 450 V	High temperature Long life, Withstand 45g vibrations
	Prorsic 125	12x25 to 25x75	1 to 15 000 µF	10 to 350 V	125°C Long life
	Sical /Sical C042	6.5x19 to 25x75	6.8 to 47 000 µF	10 to 630 V	Standard 105°C type
Vacsic 105	12x25 to 16x30	15 to 4 700 µF	10 to 450 V	Standard 105°C type; Withstand 45g vibrations.	

WOUND MAGNETICS COMPONENTS

	Standard Technologies	High Grade Technologies
COITS (Components Off The Shelves)	<p>Power Magnetics</p> <p>Power inductors Common mode Choke (CMC) Gate drive Transformers (GDT) Current Transformers (CT)</p> <p>CMESC17 CT05</p> 	<p>SESI 9.1 to 32 CMC17 CT01 to CT15</p> 
	<p>Line Matching Data RF</p> <p>Chip inductors Wide Band transformers Data Interface Bus Transformers Line matching transformers Common mode chokes</p> <p>MTLM series</p> 	<p>MPCI series WRTF MIL STD 1553 DBIT(A) series</p> <p>MTLM1234 mil HCESC, DLEF42</p> 
CUSTOM	<p>Switching Power supply < 500W</p> <p>Power Transformers Power inductors Common mode Choke (CMC) Gate drive Transformers (GDT) Current and Voltage measurement transformers High temperature designs Up to 240°C</p> <p>FSIT ETD EFD Core P Core</p> <p>Toroids on plastic baseplate RM Resin encapsulation</p> 	<p>TT technology molded toroids SESI technology</p> <p>HXMT CCM technology</p> <p>Winding toroids on ceramic substrate (HTCC, LTCC) Planar magnetics</p> 
	<p>Medium Power</p> <p>Power Transformers Power inductors Up to 5 000 A Common mode Choke (CMC)</p> <p>Foil winding Triple winding inductors Toroidal inductors Copper plates assembly Stacked inductors E cores assembly</p> 	
	<p>50-400Hz</p> <p>12 pulse transformers interphase inductors current transformers</p> <p>Aluminum Foil winding</p> <p>Double C laminated steel cores Amorphous C core</p> 	
BOBBIN / MOTOR	<p>Design & Built-to-Print</p> <p>Bobbin actuators Stators/rotors Antennas Position sensors</p> 	
	<p>Direct & indirect water cooling</p> <p>Inductance 0.82 mH</p> 	<p>Indirect water cooling / with potting</p> 

EXXELIA MAGNETICS, EXXELIA RAFTABTRONICS and EXXELIA DEYOUNG specialize in the design, manufacture and sale of magnetic components, including wound magnetics, inductors, transformers, motors, sensors and actuators for high performance applications.

Our technology offer includes standard linear and toroidal technologies, as well as Chameleon Concept Magnetics technology (CCM), Toroidal Transfer

Molded Technology (TT), SESI planar/low profile technology, and Aluminum Foil Winding technology (AFW) all optimized to meet the most demanding applications.

EXXELIA GROUP offers a complete range of products, providing solutions for highly demanding requirements such as High Voltage, High Temperature, and Power Levels up to 300 kVA.

HIGH TEMPERATURE (up to 240°C)

Ceramics - HTCC

Impregnated Bare Toroid

Metallic Bobbin

MPCl

Cute Core Technology

HIGH VOLTAGE PRODUCTS

EXXELIA MAGNETICS manufactures transformers up to 100 kV_{DWV}. This know-how ensures the right choice of materials, winding and molding processes.

Air Inductance
50 mH
5 A eff. / 5500 Hz

Traveling Wave Tube Power 15 kV
(satellite Telecom)

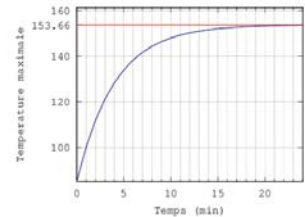
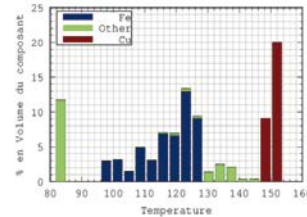
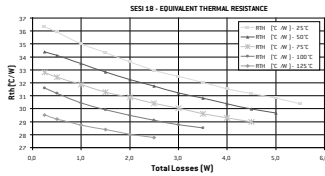
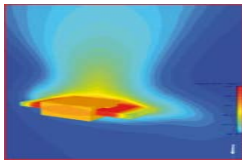
POWER (up to 300 kVA)

Smoothing choke
800 μ H - 135 A_{DC}
32 A_{PKPK} VF 2 m/s

Dual Transformer - Pulsed ventilation
125 kW - 4 kHz - 500 V / 940 V

THERMAL MANAGEMENT

EXXELIA GROUP invests in R&D and makes extensive studies on the thermal management of magnetics, including loss calculations, design rules, thermal resistance and thermal modeling. We have available, a complete database of thermal resistances for all standard magnetics packages and have developed specific software for designing optimized compact components.



CATALOG PRODUCTS

	Series	Current	Inductance	Temperature Range	Frequency	Notes
Chip Inductor	MPCI 10000, 12000, 20000	15 mA \Rightarrow 1 000 mA	0.010 μ H \Rightarrow 1 000 μ H	-55°C \Rightarrow +125°C	7.9 MHz \Rightarrow 500 MHz	OPL, Space Qualified
	MPCI H01	100 mA \Rightarrow 1 500 mA	0.38 μ H \Rightarrow 100 μ H	-55°C \Rightarrow +125°C		OPL, Space Qualified
	MPCI 233 H01	100 mA \Rightarrow 1 500 mA	0.38 μ H \Rightarrow 100 μ H	up to +175°C		High Temperature
C. Mode Choke	CMC 15, CMC 18, CMC 22	0.55 A \Rightarrow 14.3 A	60 μ H \Rightarrow 4 900 μ H	-55°C \Rightarrow +125°C		OPL, Space Qualified
	CMC 14, CMC 17	1.1 A \Rightarrow 11.7 A	140 μ H \Rightarrow 69 200 μ H	-55°C \Rightarrow +125°C		
Inductor	SESI 9.1	0.045 A \Rightarrow 6 A	1 μ H \Rightarrow 6 800 μ H	-55°C \Rightarrow +125°C	max 1 MHz	OPL, Space Qualified
	SESI 14, 15	0.28 A \Rightarrow 14 A	1.5 μ H \Rightarrow 2 290 μ H	-55°C \Rightarrow +125°C	max 1 MHz	OPL, Space Qualified
	SESI 18, 22, 32	0.8 A \Rightarrow 24 A	4.9 μ H \Rightarrow 4 709 μ H	-55°C \Rightarrow +125°C	max 1 MHz	OPL, Space Qualified
Gate drive transfo.	Series	ET	Turn Ratio	Temperature Range	Frequency (duty cycle 50%)	Notes
	GTD 15	60/80 V μ s	1 : 1.52/1 : 1 : 1	-55°C \Rightarrow +125°C	up to 500 kHz	Aeronautic, Space
GTD 91	50/135 V μ s	1 : 1/1 : 1 : 1	-55°C \Rightarrow +125°C	up to 500 kHz	Aeronautic, Space	
Current transfo.	Series	Current	Turn Ratio	Temperature Range	Frequency (Triangle Waveform)	Notes
	CT 15	17 A pk max.	1 : 50/1 : 200	-55°C \Rightarrow +125°C	6 kHz \Rightarrow 100 kHz	Aeronautic, Space
	CT 91	10 A pk max.	1 : 50/1 : 200	-55°C \Rightarrow +125°C	6 kHz \Rightarrow 500 kHz	Aeronautic, Space
DBIT / SBIT	MIL-STD-1553 Data Bus Transformer			-55°C \Rightarrow +125°C	75 kHz \Rightarrow 1 MHz	Aerospace, ESA / EPPL

POSITION SENSORS & SLIP RINGS

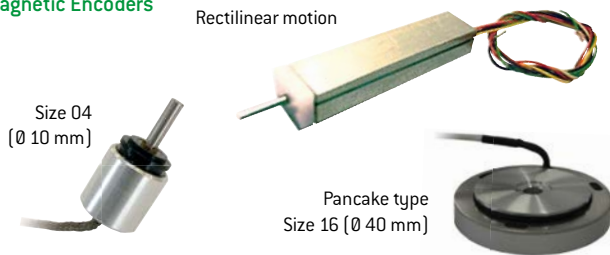
EXXELIA TECHNOLOGIES designs and manufactures contact and contactless Position Sensors, Slip Rings and Hybrid Systems.

HIGH PERFORMANCE CONTACTLESS POSITION SENSORS

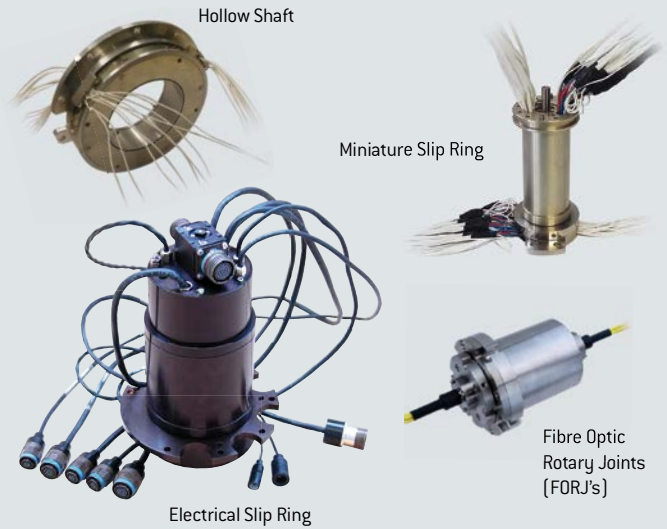
High accurate Optical Encoders



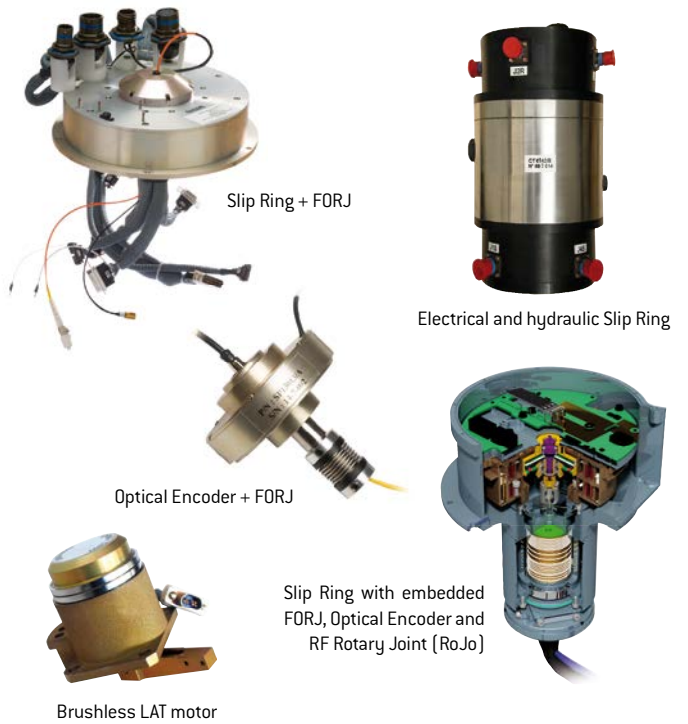
Magnetic Encoders



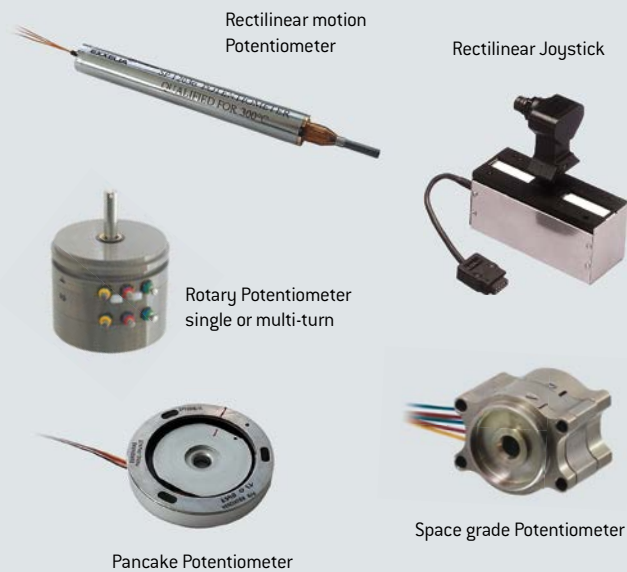
SLIP RINGS



HYBRID SYSTEMS



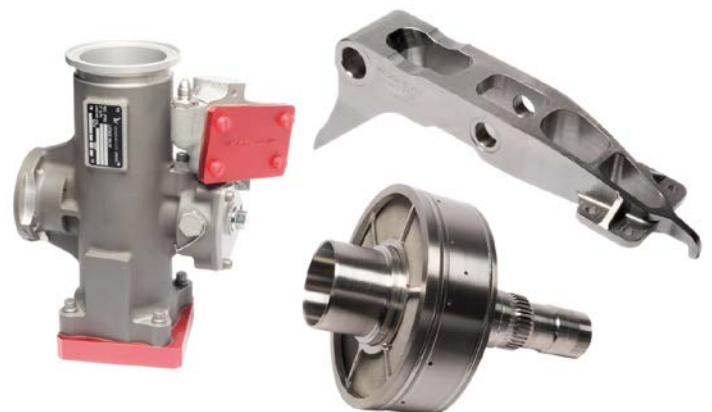
PRECISION POTENTIOMETERS



PRECISION MECHANICS

EXXELIA GROUP's Precision Mechanics division specialises in machining complex parts, from prototypes to medium series. Our best-in-class palletized-5-axis turning and milling equipment enable us to work with all types of material including titanium, inconel, 35NCD4 etc...

Assembly, high precision manual deburring and hydraulic tests can be carried out in our workshop.



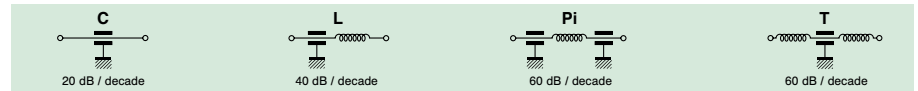
EMI-RFI FILTERS



EXXELIA TECHNOLOGIES range of EMI-RFI filters are mainly low-pass filters designed to remove efficiently high-frequency interferences and parasites.

Nowadays filters function are required for:

- Data signal integrity,
- Power supply performance,
- EMC standard compliance.



T*	Model	Current	Voltage	Performance	Qualification	Use
EMI-RFI Filters -55°C +125°C (up to 175°C)	Feedthrough Ø 3 - Ø 4 - Ø 6 - Ø 10 (mm)	Up to 15 A	Up to 500 V _{DC} and 115 V _{AC} 400 Hz	Up to 80dB from 10 kHz to 10 GHz	Qual. ESA, Air, Compliant MIL 461, D0160	Space, Aeronautic, Defense, Industry.
	Feedthrough Ø 17 (mm)	Up to 30 A	Up to 3 000 V _{DC} and 200 V _{AC} 400 Hz	Up to 80dB from 10 kHz to 10 GHz	Air qualified, Compliant MIL 461, D0160	Aeronautic, Defense, Industry.
	Multi ways Filters	Up to 15 A	Up to 500 V _{DC} and 115 V _{AC} 400 Hz	Up to 80dB from 10 kHz to 10 GHz	in house	Aeronautic, Defense, Industry.
	Surface mount FCMS - CFCMS	10 A (20 A for HI version)	Up to 500 V _{DC} and 115 V _{AC} 400 Hz	Up to 70 dB from 10 kHz to 10 GHz	ESA EPPL	Space, Aeronautic, Defense, Industry.
	SPF...	0.1 A ⇔ 500 A	25 V ⇔ 3 000 V eff.	1 kHz ⇔ 10 GHz	in house	Custom design

ENERGY FILTERS

Following 50 years heritage in Defense market, EXXELIA TECHNOLOGIES offers highly performant, robust and reliable solutions to protect from different EMC phenomenon all kind of signal such as:

- Power supply,
- Control lines,
- Data communication...



T*	Model	Current	Voltage	Performance	Use
EMC Filters -55°C +85°C	Feedthrough Tube filters	Up to 500 A	Up to 1 000 V _{DC} and 400 V _{AC}	Up to 100 dB Up to 18 GHz	Single lines power supply.
	Power cabinets	Up to 2 500 A	Up to 440 V _{AC} (50-800Hz)	Up to 100 dB from 10 kHz to 18 GHz	Three or single phase power supply for TEMPEST and HEMP
	Data communication	Up to 1A	-	Up to 100 dB Up to 18 GHz	Up to 100MHz bandwidth data signal for TEMPEST and HEMP
	Custom filters	Additional protection for energy and signal filtering.			

COMPONENTS & SUB-ASSEMBLIES MANUFACTURING



With two production units, separated by less than 10 km and located both in Casablanca (Morocco), EXXELIA MAROC offers to its customers a subcontracting capability on its two main competences fields with high technology processes as: wire bonding, vacuum metallization, RF test equipments, reliability test equipment.

Complex electronic modules or components assembly:

- RF diodes packaging,
- RF circulators assembly,
- quartz hybrid oscillators assembly,
- high frequency filters assembly,
- opto electronic components,
- antennas, sensor.

Built-to-print for overmoulding, wiring and harnessing, rotors, stators, actuators.

EXXELIA VIETNAM is locate in Ho Chi Minh City and dedicated to Medium to High volume markets requesting traceability for processes and raw materials.



Richardson Electronics has been an industry-leader in providing high-quality products and outstanding engineering support for nearly 70 years. Our extensive global distribution network and world-class partners provide our customers with innovative technologies, products and services.

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