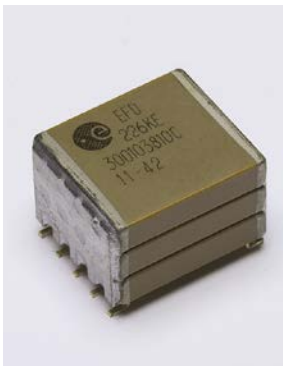
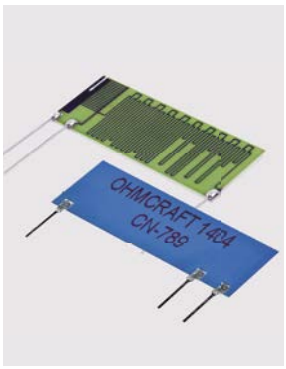
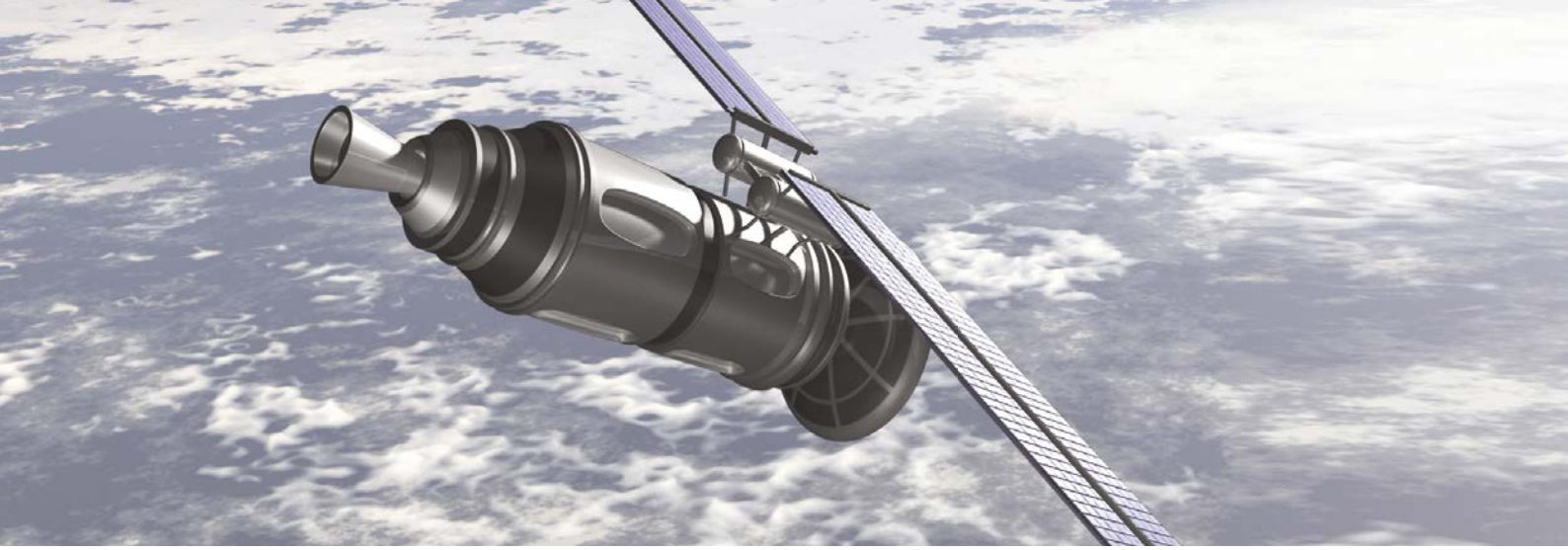
Space Applications
Selection Guide





EXXELIA



WHO IS EXXELIA

EXXELIA is a manufacturer of ruggedized passive components and precision subsystems focusing on highly demanding end-markets, applications and functions. With more than 40 years of heritage in Space, **EXXELIA** combines engineering and manufacturing know-how to provide qualified and cost-effective solutions.

Thanks to an extensive sales network, **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.

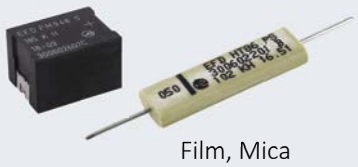
OUR APPROACH

- Quality Multi-Step Process Inspection
- Obsolescence management
- Use of low outgassing materials only
- Design & Engineering support
- Custom designs

EXTENSIVE PRODUCT PORTFOLIO DEDICATED TO SPACE

CAPACITORS

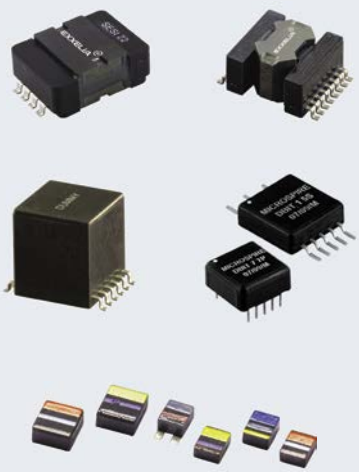
Ceramic, Tantalum



Film, Mica

Tuning Elements

MAGNETICS

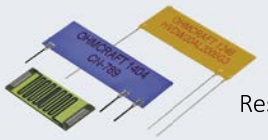


Transformers, Inductors

RESISTORS & SUBSYSTEMS

Position Sensors

EMI-RFI Filters



Resistors

EXXELIA AT A GLANCE

+3100 Employees

12 Manufacturing Locations

50 ESA Qualified Series

ISO 9001
EN 9100
AS 9100
Certified

In more than **50 countries**

1 Stop Shopping

TWO COMPLEMENTARY OFFERS

COMPREHENSIVE ESA QPL/QML PRODUCT PORTFOLIO

Wide list of Qualified Product Series confirming our position in the traditional Space Market.

COST EFFECTIVE SOLUTIONS FOR NEW SPACE

Increased competitiveness and quicker go-to-market: Additional screening versus standard process/Reduced inter-operation inspection versus QPL process.

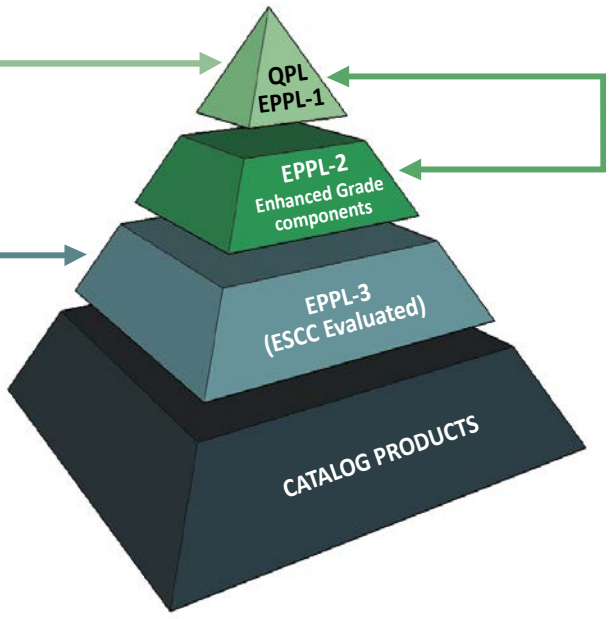
ESCC EVOLUTION AND NEW EPPL SYSTEM

EPPL-1

QPL and QML parts

EPPL-3

European parts with potential for qualification



Qualified Manufacturer List (QML)

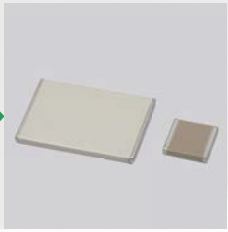
Exxelia technology flow qualifications allow specific designs to be listed as EPPL2 without any additional testing or cost.

Capacitors

Custom design available on request

High voltage

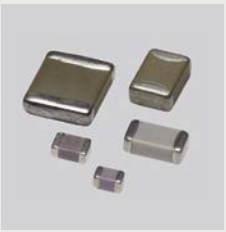
C48X Ceramic: high capacitance values, high stability under voltage



C Series

Sizes 1812 to 6550

NPO. X7R & C48X
200 V_{DC} to 10 kV_{DC}
10 pF to 6.8 µF
–55°C +125°C



CEC / CNC Series

Sizes 0402 to 2220

NPO & X7R
10 V_{DC} to 1000 V_{DC}
1 pF to 3.9 µF
–55°C +125°C

Miniaturization
Exxelia is the only manufacturer qualified in 10 V

Polymer termination in QPL:
absorption of thermo-mechanical stresses

High capacitance

For SMPS, Filtering, DC-DC converters

SMD or through-hole connections

CNC 3X & 5X

Sizes 2220 to 6080

X7R
16 V_{DC} to 500 V_{DC}
100 nF to 180 µF
–55°C +125°C

Radial Capacitors

TCF, TCK Series

NPO, X7R & C48X
63 V_{DC} to 10 kV_{DC}
10 pF to 6.8 µF
–55°C +125°C

High voltage

Molded, or conformal coated cases

C48X Ceramic: high capacitance values, high stability under voltage

Tuning Elements

Metallic | Resistive
Dielectric Sapphire, Quartz, Alumina
Up to 100 GHz
Ka, Ku, Q band & beyond
Low coeff. of thermal expansion

Invar Screws

Ø 1.2 to 2 mm
Thread 0.25 | Tolerances 6G
Max. Length 8 to 11 mm
Self-locking mechanism
Cavity filter, IMUX, OMUX, waveguide

Ultra High-Q

High capacitance

Low ESR

High self resonant frequencies

Ribbon leads

CH / SH Series

Sizes 0505 & 1111

P100 & NPO
Up to 1500 V_{DC}
0.1 pF to 1000 pF
–55°C +175°C

Ceramic- Film- Tantalum

Custom Capacitor bank with Busbar

Metalized polyester

500 V_{DC}
620 µF & 200 µF
High Capacitance Filtering
High RMS current

For space launchers

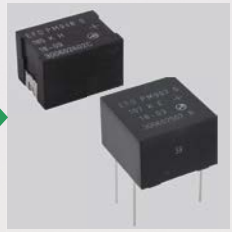
Easy Integration in Equipment

No PCB for discrete components: no repair after reflow soldering

High energy density

Low ESR & ESL

Light weight



PM Series

Metallized PET

63 V_{DC} to 1250 V_{DC}
22 nF to 180 µF
–55°C +125°C

High voltage

Up to 100 kV on request

Power transmission, TWT, radars

HT Series

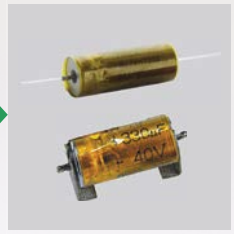
Reconstituted Mica

1500 V_{DC} to 20 kV_{DC}
100 pF to 1.5 µF
–55°C +125°C

Standard CLR79 / CLR81 & CLR93

SMD version available

Hermetically sealed tantalum cases



CT79 & ST79

Wet Tantalum

6 V_{DC} to 125 V_{DC}
1.7 µF to 2200 µF
–55°C +125°C
Case size A, B, C, D

MIL M39006/22 level M

MIL M39006/25 level M

MIL 39006 22/25 Series

Wet Tantalum

6 V_{DC} to 125 V_{DC}
1.7 µF to 1800 µF
–55°C +125°C
Case size T1, T2, T3, T4

CTC21 Series

Solid Tantalum (MnO_2)

6.3 V_{DC} to 63 V_{DC}
5.6 µF to 680 µF
–55°C +125°C
Case size C, D

Very High Capacitance (100 µF @ 35V)

High reliability

Stacked version available

Higher capacitance up to 1500 µF available under SMT47 Series (not QPL)

Wound Magnetics Components

Catalog products and custom designs from already qualified technologies

Generic standards: ESCC 3201 and MIL-STD-981

Overmolded components

Shock 100g & vibrations 30g

SMD or Pin Through Hole terminations

SESI &CMC Technologies

Common Mode Chokes CMC 15-22
4 mH - 0.5 A to 0.06 mH - 11 A
SMD filtering chokes SESI 9.1-32
700 µH - 0.2 A to 4.7 µH - 27 A
Custom transformers up to 150 W
–55°C +125°C

CCM Technology

Custom transformers
Up to 150 W
Inductors & Transformers
–55°C+125°C

Up to 30% more power density vs standard technology

Improved Rth

QML technology

Multi outputs transformers

New

Integrated Smart Magnetics

Inductor + Transformer
1.8 kW / 10:1 / 300 kHz
and Chokes 13 µH

Maximize the power density

2x more compact

4x lighter than standard technologie

Perfect for dual active bridge

MSCI Series

MSCI 10K- MSCI 12K
MSCI 20K- MSCI H01
0.01 µH - 750 mA to 10 µH - 87 mA

Excellent Q-factor

ESCC 3201/008 qualified

Perfect for RF applications

Low profile

ESA Qualified

According to MIL-STD-1553 A & B

Custom designs available

DBIT Series

Bus Transformers
Toroidal Technology
3.81 mm to 17 mm high

Resistors, Filters, Potentiometers

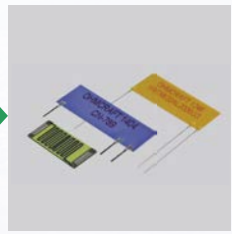
Custom design available on request

Miniature Filters

Ø 3, 3.5, 4 mm
25 V_{DC} to 250 V_{DC}
10 pF to 45 nF
Up to 10 A
–55°C +125°C
0 dB to 80 dB

Metallic package ⇨ better shielding
C, L, Pi, & T type filters
Perfect sealing (glass or resin)
Ø 4.5 to 17 mm not ESA/QPL

LAT per NASA EEE-INST-002, MIL-PRF-55342
Ultra high Stability
For space instrumentation (mass spectrometry, image intensifiers, X-Ray sources...)



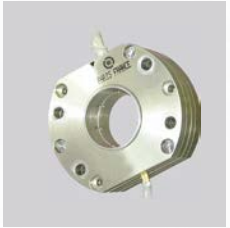
Resistors

High Voltage, Thick Film
Up to 60 kV
Tight tolerance 0.1%
Custom designs

Electrical travel from 10 to 100 mm
Housing in anodized aluminum or stainless steel

Linear Potentiometers

Linearity 0.1%
–55°C +125°C
Repeatability 10 µm

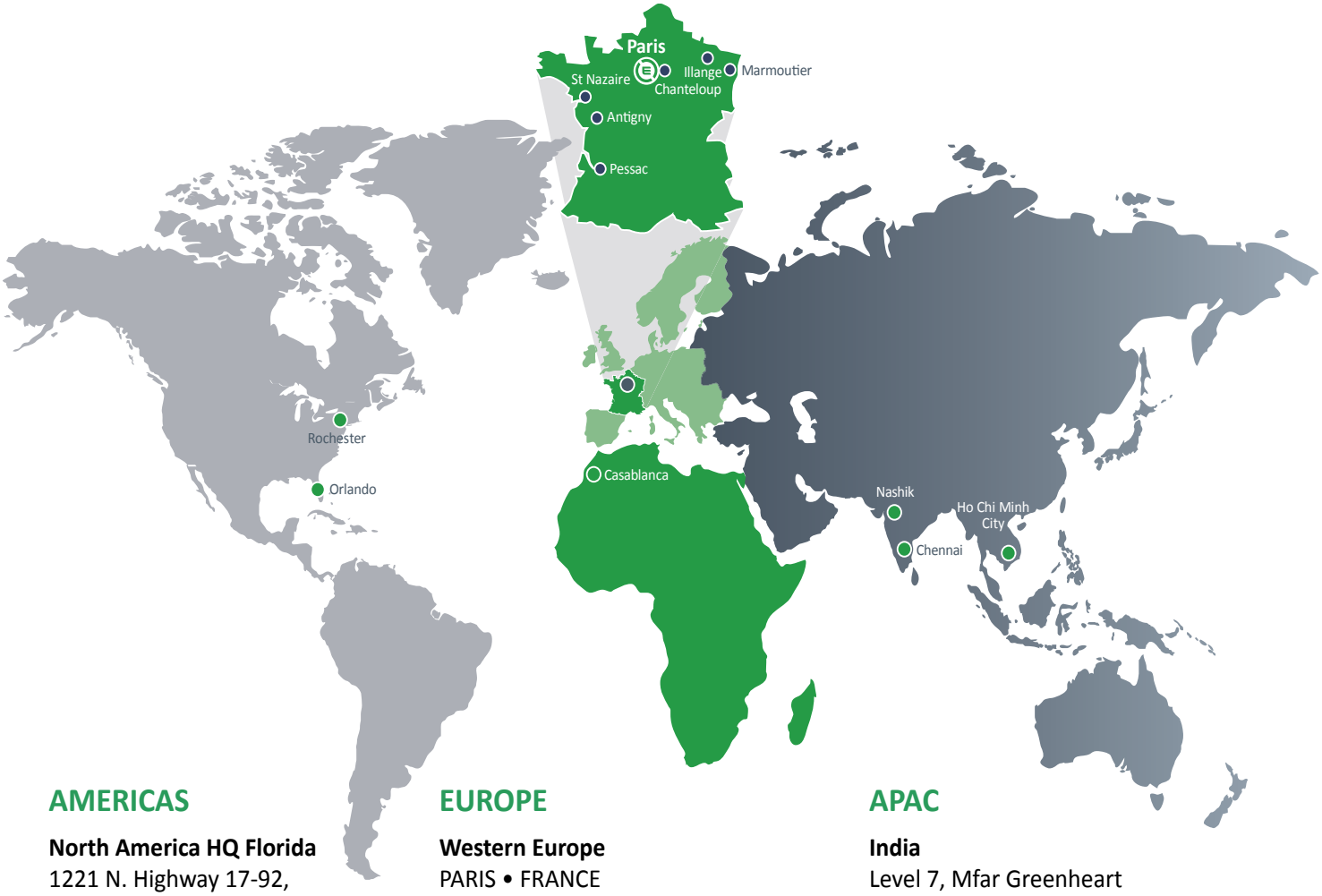


Rotary Potentiometers

Linearity 0.1°
–55°C +125°C
Shock 50g- 1/2 sinus- 11 ms
Vibrations: 20g-1.5mm
10 to 500 Hz

Single /dual rotary /pancake potentiometer
High performance
Miniaturization

Headquarters
PARIS • FRANCE
Tel.: +33 1 49 23 10 00
www.exxelia.com



AMERICAS

North America HQ Florida
1221 N. Highway 17-92,
Longwood, FL 32750 • USA
Tel.: +1 407 695-6562

Rochester, NY
93 Papermill St Suite 1,
Honeoye Falls, NY 14472,
USA
Tel.: +1 585 624 2610

Scan to contact us

Product catalog N°2511

EUROPE

Western Europe
PARIS • FRANCE
Tel.: +33 1 49 23 10 00

Northern Europe
Cylindervägen 18
SE-131 52 Nacka Strand • SWEDEN
Tel.: +46 76 16 50 014

APAC

India
Level 7, Mfar Greenheart
Manyata Tech Park
Outer Ring Road, Hebbal,
BANGALORE - 560045
Tel.: +91 80 67 65 41 14

Alcon Electronics Pvt.Ltd.
34-B MIDC Industrial Estate, Satpur, Nashik,
Maharashtra-422007, INDIA
Tel.: +91 253 2350533

SVM Pvt.Ltd.
Survey No.9/1, Thiruvalluvar Salai, Kan-
nivakkam Village, Guduvanchery,
Chennai - 603 202.
+91 7299932214 / +91 7299932201

China
Mayfair Tower NO.83
Fu Min Road - 200040 Shanghai • CHINA
Tel.: +86 21 6132 7197