

Space Applications

Selection Guide





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 30 years of heritage in Space, EXXELIA combines engineering and manufacturing know-hows to provide qualified and 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

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



MAGNETICS



ELECTROMECHANICAL



EXXELIA AT A GLANCE

1900 
Employees

ISO 9001
EN 9100
AS 9100
Certified 

13 
Manufacturing
Locations

 In more than
30 countries

 50 ESA
Qualified Series

1 
Stop Shopping

TWO COMPLEMENTARY OFFERS

COMPREHENSIVE ESA QPL PRODUCT PORTFOLIO

Maintain and widen the list of our
Qualified Product Series
to confirm our position in the
traditional Space Market.



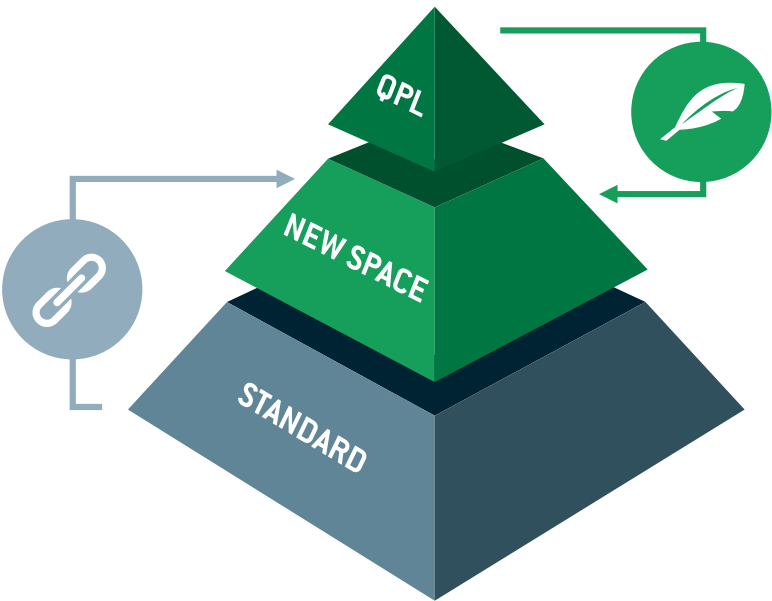
COST EFFECTIVE SOLUTIONS

Offer new space components
to answer the need
of increased competitiveness
and quicker go-to-market.

OFFER FOR NEW SPACE

ENHANCED RELIABILITY

Additional screening
included in our process.
All parts ready to use
without additional
incoming screening.



A LIGHTER PROCESS FROM A TO Z

Reduced inter-operation
inspections.
No LAT test, no paperwork.
Delivered with a standard
CoC only.

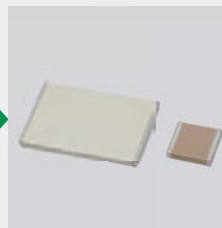
Capacitors

Custom design available on request

High voltage

SMD

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

Stacked technology

SMD or through-hole connections



CNC 3X & 5X

Sizes 2220 to 6080

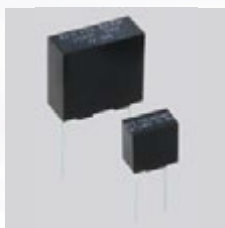
X7R
16 V_{DC} to 500 V_{DC}
100 nF to 180 μF
-55°C +125°C



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

Ultra High-Q

High capacitance

Low ESR

High self resonant frequencies

Ribbon leads for SMD



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



PHM Series

PEN HV

250 V_{DC} to 1000 V_{DC}
0.15 μ F to 68 μ F
-55°C +155°C

High temperature +155°C

Very high energy density

Less capacitors for the same function

High energy density

Low ESR & ESL

Light weight



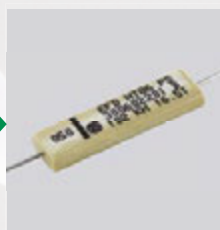
PM Series

Metallized PET

50 V_{DC} to 1250 V_{DC}
0.022 μ F to 180 μ F
-55°C +125°C



High voltage
Up to 100 kV on request



HT Series

Reconstituted Mica

1500 V_{DC} to 20 kV_{DC}
100 pF to 1.5 μ F
-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 μ F to 2200 μ F
-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 μ F to 1800 μ F
-55°C +125°C
Case size T1, T2, T3, T4



CTC21 & SMT47 Series

Solid Tantalum (MnO₂)

6.3 V_{DC} to 63 V_{DC}
5.6 μ F to 680 μ F
-55°C +125°C
Case size C, D

Very High Capacitance (100 μ F @ 35V)

High reliability

Stacked version available

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 Technology

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 μ H - 0.2 A to 4.7 μ H - 27 A

Custom transformers up to 150 W
-55°C +125°C

New
qualification



CCM Technology

Custom transformers

Up to 150 W

Custom inductors

-55°C +125°C

Up to 30% more power density vs
standard technology

Improved Rth

SMD terminations

QML technology

Ideal for multi outputs transformers

New
qualification
TO Technology



Toroidal transfer Technology

**Common Mode Chokes
CMC 17-14**

140 μ H - 7.2 A to 69.2 mH - 1.1 A

Custom designs

Multiple toroidal magnetic cores $\Rightarrow$ more energy

Improved Rth

Custom product: current transformer



MSCI Series

MSCI 10K - MSCI 12K

MSCI 20K - MSCI H01

0.01 μ H - 750 mA to 10 μ H - 87 mA

Excellent Q-factor

ESCC 3201/008 qualified

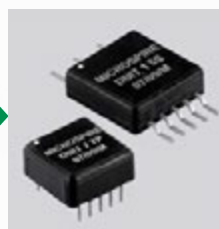
Perfect for RF applications

Low profile

Listed on ESA EPPL

According to MIL-STD-1553 A & B

Custom designs available



DBIT Series

Bus Transformers

3.81 mm to 17 mm high

Electromechanical Solutions

Custom design available on request



Miniature Filters

Ø 3 to 10 mm
25 V_{DC} to 100 V_{DC}
10 pF to 4.4 µF
Up to 35 A
-55°C +125°C
0 dB to 80 dB

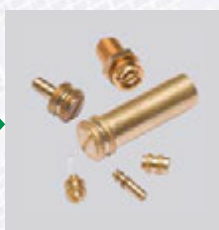


Metallic package ⇒ better shielding

C, L, Pi, & T type filters

Perfect sealing (glass or resin)

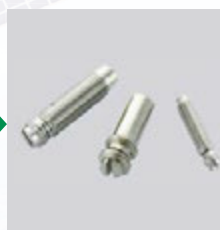
High precision, frequency, resolution
Self-locking mechanism
Cavity filter, IMUX, OMUX, waveguide



Tuning Elements

Metallic
Dielectric Sapphire, Quartz, Alumina
Resistive
Up to 100 GHz (L to Ka band)
Custom designs

High precision, frequency, resolution
Low coefficient of thermal expansion
Ka, Ku, Q band & beyond



Invar Screws

Ø 1.2 to 2 mm
Finest Thread 0.25
Maximum Length 8 to 11 mm
Tolerances 6G

Slip-ring & potentiometer assembly
Bearingless ⇒ weight saving
Perfect for solar array and antenna drive mechanism



Slip ring Assembly

Slip ring

Up to 150 tracks
1,6 A/track
Signal or Power

Potentiometer

Wirewound
Redundant
Precision 0,15°

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



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