

**METALLIZED POLYPROPYLENE FILM CAPACITOR
MULTIPURPOSE APPLICATIONS**

Typical applications: timing, oscillator circuits, high frequency coupling and decoupling.

PRODUCT CODE: **R79**

p = 5mm

All dimensions are in mm.

| Pitch (mm) | Box thickness (mm) | Maximum dimensions (mm) | | |
|---------------|-----------------------|-------------------------|--------|--------|
| | | B max | H max | L max |
| 5.0 | <4.5 | B +0.1 | H +0.1 | L +0.2 |
| 5.0 | ≥4.5 | B +0.1 | H +0.1 | L +0.3 |

PRODUCT CODE SYSTEM

The part number, comprising 14 digits, is formed as follows:

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| R | 7 | 9 | | C | | | | | | | | - | |

- Digit 1 to 3 Series code
- Digit 4 d.c. rated voltage:
G = 160V I = 250V
M = 400V P = 630V
- Digit 5 Pitch: C = 5mm
- Digit 6 to 9 Digits 7 - 8 - 9 indicate the first three digits of Capacitance value and the 6th digit indicates the number of zeros that must be added to obtain the Rated Capacitance in pF.
- Digit 10 to 11 Mechanical version and packaging (table 1)
- Digit 12 Identifies the dimensions and electrical characteristics.
- Digit 13 Internal use.
- Digit 14 Capacitance tolerance:
H=2.5%; J=5%; K=10%

Table 1 (for more detailed information, please refer to page 14)

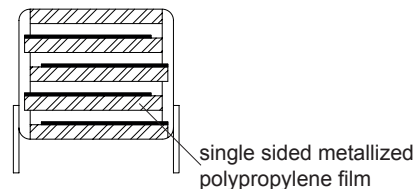
| Standard packaging style | Lead length (mm) | Ordering code (Digit 10 to 11) |
|--------------------------|---------------------|-----------------------------------|
| AMMO-PACK | | DQ |
| REEL Ø 355mm | | CK |
| Loose, short leads | 4 ^{+1.5} | AA |
| Loose, long leads | 17 ^{+1/-2} | Z3 |

Note: Ammo-pack is the preferred packaging for taped version.

GENERAL TECHNICAL DATA

- Dielectric:** polypropylene film.
- Plates:** aluminium layer deposited by evaporation under vacuum.
- Winding:** non-inductive type.
- Leads:** tinned wire, low thermal conductivity.
- Protection:** plastic case, thermosetting resin filled.
Box material is solvent resistant and flame retardant according to UL94.
- Marking:** manufacturer's logo, series (R79), capacitance, tolerance, D.C. rated voltage.
- Climatic category:** 55/105/56 IEC 60068-1
- Operating temperature range:** -55 to +105°C
- Related documents:** IEC 60384-16

Winding scheme



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| Rated Cap. | 160Vdc/70Vac Std dimensions | | | | Max dv/dt (V/μs) | Max K ₀ (V ² /μs) | Part Number |
|------------|--------------------------------|------|-----|-----|---------------------|--|---------------|
| | B | H | L | p | | | |
| 0.039 μF | 3.5 | 7.5 | 7.2 | 5.0 | 100 | 32 E3 | R79GC2390-4-- |
| 0.047 μF | 4.5 | 9.5 | 7.2 | 5.0 | 100 | 32 E3 | R79GC2470-4-- |
| 0.056 μF | 4.5 | 9.5 | 7.2 | 5.0 | 100 | 32 E3 | R79GC2560-4-- |
| 0.068 μF | 4.5 | 9.5 | 7.2 | 5.0 | 100 | 32 E3 | R79GC2680-4-- |
| 0.082 μF | 5.0 | 10.0 | 7.2 | 5.0 | 100 | 32 E3 | R79GC2820-4-- |
| 0.10 μF | 5.0 | 10.0 | 7.2 | 5.0 | 100 | 32 E3 | R79GC3100-4-- |
| 0.12 μF | 6.0 | 11.0 | 7.2 | 5.0 | 100 | 32 E3 | R79GC3120-4-- |
| 0.15 μF | 6.0 | 11.0 | 7.2 | 5.0 | 100 | 32 E3 | R79GC3150-4-- |
| 0.18 μF | 7.2 | 13.0 | 7.2 | 5.0 | 100 | 32 E3 | R79GC3180-4-- |
| 0.22 μF | 7.2 | 13.0 | 7.2 | 5.0 | 100 | 32 E3 | R79GC3220-4-- |

Mechanical version and packaging (Table1) _____
Internal use _____
Tolerance: J (±5%); K (±10%) _____

| Rated Cap. | 400Vdc/200Vac Std dimensions | | | | Max dv/dt (V/μs) | Max K ₀ (V ² /μs) | Part Number |
|------------|---------------------------------|------|-----|-----|---------------------|--|---------------|
| | B | H | L | p | | | |
| 3900 pF | 3.5 | 7.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC1390-4-- |
| 4700 pF | 3.5 | 7.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC1470-4-- |
| 5600 pF | 3.5 | 7.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC1560-4-- |
| 6800 pF | 3.5 | 7.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC1680-4-- |
| 8200 pF | 3.5 | 7.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC1820-4-- |
| 0.010 μF | 3.5 | 7.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2100-4-- |
| 0.012 μF | 4.5 | 9.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2120-4-- |
| 0.015 μF | 4.5 | 9.5 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2150-4-- |
| 0.018 μF | 5.0 | 10.0 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2180-4-- |
| 0.022 μF | 5.0 | 10.0 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2220-4-- |
| 0.027 μF | 6.0 | 11.0 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2270-4-- |
| 0.033 μF | 6.0 | 11.0 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2330-4-- |
| 0.039 μF | 7.2 | 13.0 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2390-4-- |
| 0.047 μF | 7.2 | 13.0 | 7.2 | 5.0 | 400 | 320 E3 | R79MC2470-4-- |

| Rated Cap. | 250Vdc/160Vac Std dimensions | | | | Max dv/dt (V/μs) | Max K ₀ (V ² /μs) | Part Number |
|------------|---------------------------------|------|-----|-----|---------------------|--|---------------|
| | B | H | L | p | | | |
| 0.012 μF | 3.5 | 7.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2120-4-- |
| 0.015 μF | 3.5 | 7.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2150-4-- |
| 0.018 μF | 3.5 | 7.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2180-4-- |
| 0.022 μF | 3.5 | 7.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2220-4-- |
| 0.027 μF | 3.5 | 7.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2270-4-- |
| 0.033 μF | 3.5 | 7.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2330-4-- |
| 0.039 μF | 4.5 | 9.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2390-4-- |
| 0.047 μF | 4.5 | 9.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2470-4-- |
| 0.056 μF | 4.5 | 9.5 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2560-4-- |
| 0.068 μF | 5.0 | 10.0 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2680-4-- |
| 0.082 μF | 6.0 | 11.0 | 7.2 | 5.0 | 250 | 125 E3 | R79IC2820-4-- |
| 0.10 μF | 6.0 | 11.0 | 7.2 | 5.0 | 250 | 125 E3 | R79IC3100-4-- |
| 0.12 μF | 7.2 | 13.0 | 7.2 | 5.0 | 250 | 125 E3 | R79IC3120-4-- |
| 0.15 μF | 7.2 | 13.0 | 7.2 | 5.0 | 250 | 125 E3 | R79IC3150-4-- |

Mechanical version and packaging (Table1) _____
Internal use _____
Tolerance: H (±2.5%); J (±5%); K (±10%) _____

| Rated Cap. | 630Vdc/220Vac* Std dimensions | | | | Max dv/dt (V/μs) | Max K ₀ (V ² /μs) | Part Number |
|------------|----------------------------------|------|-----|-----|---------------------|--|---------------|
| | B | H | L | p | | | |
| 1000 pF | 3.5 | 7.5 | 7.2 | 5.0 | 500 | 630 E3 | R79PC1100-4-- |
| 1200 pF | 3.5 | 7.5 | 7.2 | 5.0 | 500 | 630 E3 | R79PC1120-4-- |
| 1500 pF | 3.5 | 7.5 | 7.2 | 5.0 | 500 | 630 E3 | R79PC1150-4-- |
| 1800 pF | 3.5 | 7.5 | 7.2 | 5.0 | 500 | 630 E3 | R79PC1180-4-- |
| 2200 pF | 3.5 | 7.5 | 7.2 | 5.0 | 500 | 630 E3 | R79PC1220-4-- |
| 2700 pF | 3.5 | 7.5 | 7.2 | 5.0 | 500 | 630 E3 | R79PC1270-4-- |
| 3300 pF | 3.5 | 7.5 | 7.2 | 5.0 | 500 | 630 E3 | R79PC1330-4-- |
| 3900 pF | 4.5 | 9.5 | 7.2 | 5.0 | 600 | 630 E3 | R79PC1390-4-- |
| 4700 pF | 4.5 | 9.5 | 7.2 | 5.0 | 600 | 630 E3 | R79PC1470-4-- |
| 5600 pF | 4.5 | 9.5 | 7.2 | 5.0 | 600 | 630 E3 | R79PC1560-4-- |
| 6800 pF | 5.0 | 10.0 | 7.2 | 5.0 | 600 | 630 E3 | R79PC1680-4-- |
| 8200 pF | 5.0 | 10.0 | 7.2 | 5.0 | 600 | 630 E3 | R79PC1820-4-- |
| 0.010 μF | 6.0 | 11.0 | 7.2 | 5.0 | 600 | 630 E3 | R79PC2100-4-- |
| 0.012 μF | 6.0 | 11.0 | 7.2 | 5.0 | 600 | 630 E3 | R79PC2120-4-- |
| 0.015 μF | 7.2 | 13.0 | 7.2 | 5.0 | 600 | 630 E3 | R79PC2150-4-- |
| 0.018 μF | 7.2 | 13.0 | 7.2 | 5.0 | 600 | 630 E3 | R79PC2180-4-- |

Mechanical version and packaging (Table1) _____
Internal use _____
Tolerance: H (±2.5%); J (±5%); K (±10%) _____

All dimensions are in mm.

Note: If the working voltage (V) is lower than the rated voltage (V_R), the capacitor may work at higher dv/dt. In this case the maximum value allowed is obtained multiplying the above value (see table dv/dt) with the ratio V_R/V.

The pulse characteristic K₀ depends on the voltage wave-form and in any case it cannot overcome the value given in the above table. The dv/dt test is carried out at 2 times the above values.

*Not suitable for across-the-line applications. Please refer to Interference Suppression Capacitors (page 145).

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ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 160Vdc - 250 Vdc 400 Vdc - 630 Vdc

Rated temperature (T_R): +85°C

Temperature derated voltage:

for temperatures between +85°C and +105°C a decreasing factor of 1.25% per degree C on the rated voltage V_R (d.c. and a.c.) has to be applied.

Capacitance range: 1000pF to 0.22 μ F

Capacitance values:

E12 series (IEC 60063 Norm).

Capacitance tolerances (measured at 1 kHz):

$\pm 2.5\%$ (H); $\pm 5\%$ (J); $\pm 10\%$ (K).

Total self-inductance (L): ≈ 6 nH

(lead length ≈ 2 mm).

Temperature coefficient (ppm/°C):

-200 (typical value).

Dissipation factor (DF):

$\text{tg} \delta 10^{-4}$ at +25°C $\pm 5^\circ\text{C}$

| kHz | MKP C $\leq 0.1 \mu\text{F}$ | MKP C $> 0.1 \mu\text{F}$ |
|-----|-----------------------------------|-----------------------------------|
| | $\text{tg} \delta \times 10^{-4}$ | $\text{tg} \delta \times 10^{-4}$ |
| 1 | ≤ 6 | ≤ 6 |
| 10 | ≤ 10 | ≤ 10 |
| 100 | ≤ 30 | |

Dielectric absorption (DA): 0.05%

Insulation resistance:

Test conditions

Temperature: +25°C $\pm 5^\circ\text{C}$

Voltage charge time: 1 min

Voltage charge: 100Vdc

Performance

$\geq 1 \times 10^5 \text{ M}\Omega$ (Typ.value: $5 \times 10^5 \text{ M}\Omega$)

Test voltage between terminations:

$1.6 \times V_R$ applied for 2 s at +25°C $\pm 5^\circ\text{C}$.

TEST METHOD AND PERFORMANCE

Damp heat, steady state:

Test conditions

Temperature: +40°C $\pm 2^\circ\text{C}$

Relative humidity (RH): 93% $\pm 2\%$

Test duration: 56 days

Performance

Capacitance change $|\Delta C/C|$: $\leq 3\%$

DF change ($\Delta \text{tg} \delta$): $\leq 10 \times 10^{-4}$ at 1kHz

Insulation resistance: $\geq 50\%$ of initial limit.

Endurance:

Test conditions

Temperature: +85°C $\pm 2^\circ\text{C}$

Test duration: 1000 h

Voltage applied: $1.25 \times V_R$

Performance

Capacitance change $|\Delta C/C|$: $\leq 3\%$

DF change ($\Delta \text{tg} \delta$): $\leq 10 \times 10^{-4}$ at 10kHz

Insulation resistance: $\geq 50\%$ of initial limit.

Resistance to soldering heat:

Test conditions

Solder bath temperature: +260°C $\pm 5^\circ\text{C}$

Dipping time (with heat screen): 10 s ± 1 s

Performance

Capacitance change $|\Delta C/C|$: $\leq 2\%$

DF change ($\Delta \text{tg} \delta$): $\leq 10 \times 10^{-4}$ at 10kHz

Insulation resistance: \geq initial limit.

Long term stability (after two years):

Storage: standard environmental conditions (see page 12).

Performance

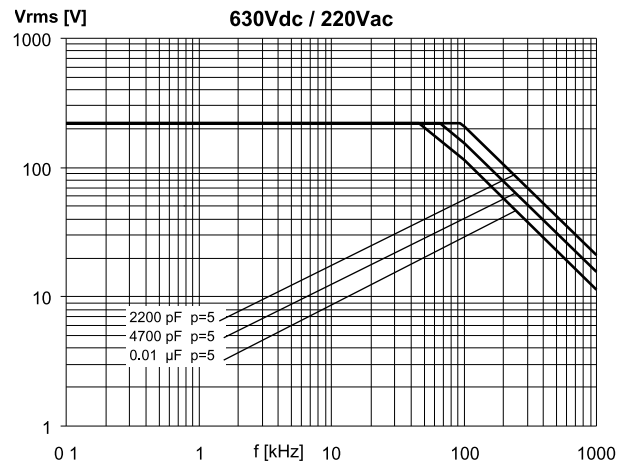
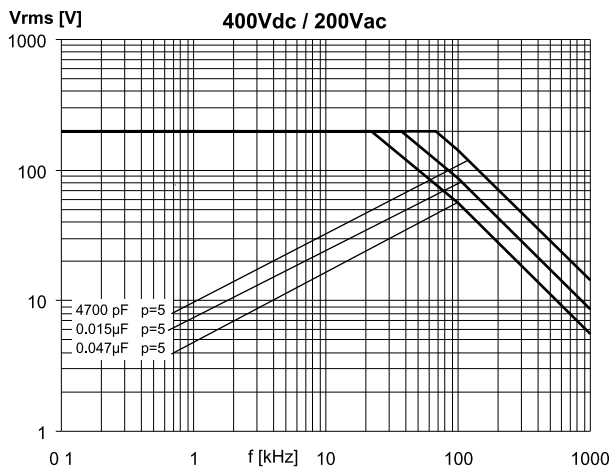
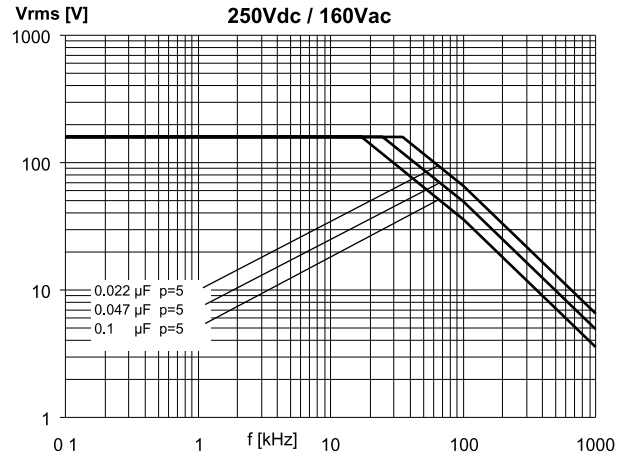
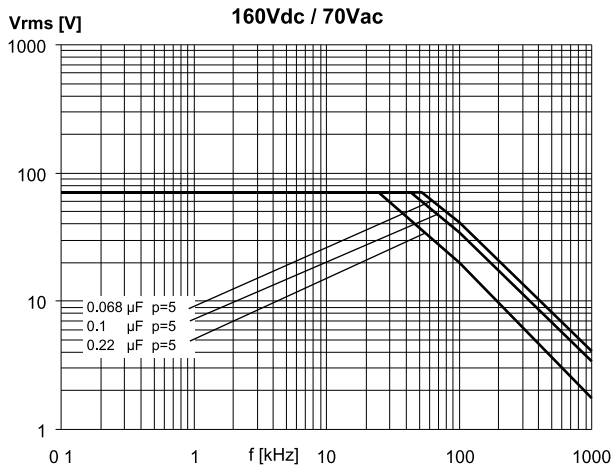
Capacitance change $|\Delta C/C|$: $\leq 0.5\%$

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MAX. VOLTAGE (Vr.m.s.) VERSUS FREQUENCY (sinusoidal wave-form / Th ≤ 40°C)



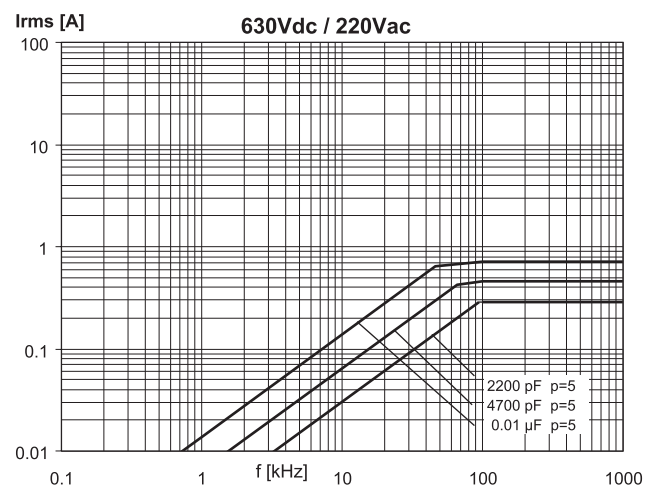
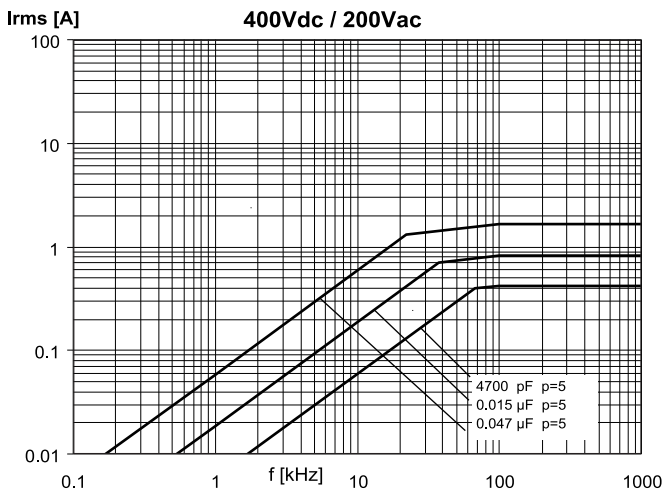
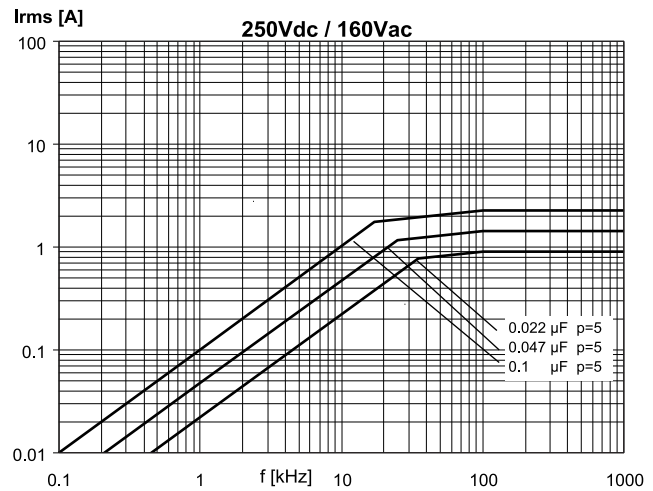
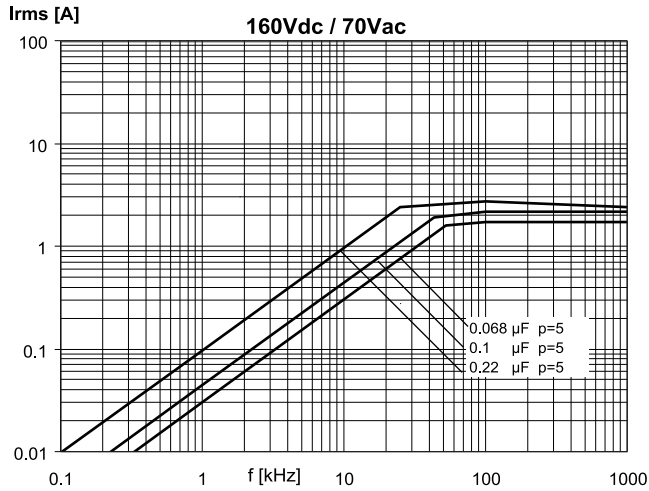
Note: p (pitch) in mm.

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MAX. CURRENT ($I_{r.m.s.}$) VERSUS FREQUENCY (sinusoidal wave-form / $T_h \leq 40^\circ\text{C}$)



Note: p (pitch) in mm.

Statements of suitability for certain applications are based on our knowledge of typical operating conditions for such applications, but are not intended to constitute – and we specifically disclaim – any warranty concerning suitability for a specific customer application or use. This Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by us with reference to the use of our products is given gratis, and we assume no obligation or liability for the advice given or results obtained.



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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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