



TOKIN

NEW PRODUCTS

English

Vol.
08



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Contents

| | | |
|-------------------------|---|----|
| Capacitors | Polymer Tantalum Chip Capacitor NeoCapacitor™ | 3 |
| | 125°C Rated Polymer Tantalum Chip Capacitor NeoCapacitor™ PS/H Series | 4 |
| | Face Down Package Polymer Chip Capacitor NeoCapacitor F/PS Series | 5 |
| | Axial Lead Type Aluminum Electrolytic Capacitor | 6 |
| | SuperCapacitor | 7 |
| | SuperCapacitor FMQ Series | 8 |
| | Micro Energy Harvesting | 9 |
| Power Inductors | Metal Composite Inductors for Automotive application | 10 |
| Reactors | Metal Composite Reactors | 11 |
| Flex Suppressor® | UL94 V-0 Flame Retardant type Flex Suppressor® | 12 |
| | High Magnetic Permeability type Flex Suppressor® | 13 |
| | GHz Band High Performance type Flex Suppressor® | 14 |
| EMI Cores | Nanocrystal EMI Core ESD-R-H-NC Series | 15 |
| Choke Coils | Three-phase SCF Series | 17 |
| | SSHB10HS Series | 18 |
| | SSHB21HS Series | 19 |
| | SSHB series Shapes and Dimensions | 20 |
| | SSRH24NV Series | 21 |
| | SSRH24NVS Series | 22 |
| | SSRH30NH Series | 23 |
| | SSRH7H-M Series | 24 |
| | SSRH7HS-M Series | 25 |
| Sensor Actuator | Current Sensor(Clamp CT : C/CT-1216) | 26 |
| | Thermal Sensor(TRS®Series&OHD™ Series) | 27 |
| | Pyroelectric Infrared Sensor (PL Series) | 28 |
| | Vibration Sensor | 29 |
| | Piezo Receiver / Speaker | 30 |
| | Multilayer Piezoelectric Actuators | 31 |
| | Piezoelectric Ceramics | 32 |



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Polymer Tantalum Chip Capacitor *NeoCapacitor*TM



Features

- Low ESR / High permissible ripple current
- Industry leading lineup using cutting-edge powder technology
- No reduction in capacitance due to DC bias
- High level of safety

Applications

- Notebook PC
- Tablet PC
- Smart Phone
- TV
- Security Camera
- HDD / SSD
- Digital Camera
- Server
- Base Station

Product Lineup

| Voltage Capacitance | 2.5V | 4V | 6.3V | 10V | 16V | 20V | 25V | 35V |
|------------------------|------------|---------------|-------------------|-------------------|---------|-----|---------|-----|
| 3.3μF | | | | A | A | | | |
| 4.7μF | | | | A | B2 | | | |
| 6.8μF | | | A | A, B2 | B2 | | B3, B2 | B3★ |
| 10μF | | A | P2, A | P2, A, B2 | B2 | | B15 | |
| 15μF | | | A, B2 | A, B2 | B2 | | B3★, B2 | |
| 22μF | | B2 | A, B3, B2 | P2, A3, A, B3, B2 | | B2 | B2★ | |
| 33μF | | A | A, B3, B2 | A3, A, B3, B2 | B3★, B2 | B2 | V, D | |
| 47μF | | A, B3 | P2, A3, A, B3, B2 | A3, A, B3, B2 | V, D | V15 | | |
| 68μF | | A | B3, B2 | V, D | V, D | | | |
| 100μF | A, B3 | A3, A, B3, B2 | A3, A, B3, B2 | B2 | V | | | |
| 150μF | | B2 | B3★, B15, B2 | V, D | D | | | |
| 220μF | A, B3★, B2 | B2 | B2 | V, D | | | | |
| 330μF | B2 | V, D | V, D | | | | | |
| 470μF | V | D | V, D | | | | | |
| 680μF | D | D | | | | | | |
| 1000μF | D | | | | | | | |

★ : New

| シリーズ名 | ケースコード | 寸法 [mm] |
|------------|--------|--------------------------|
| G/PS | P2 | 2.0±0.1×1.25±0.1×0.9±0.1 |
| F/PS | A3 | 3.2±0.2×1.6±0.2×0.9±0.1 |
| PS/L | A | 3.2±0.2×1.6±0.2×1.6±0.2 |
| PS/L, F/PS | B3 | 3.5±0.2×2.8±0.2×1.1±0.1 |
| PS/L | B15 | 3.5±0.2×2.8±0.2×1.4±0.1 |
| PS/L | B2 | 3.5±0.2×2.8±0.2×1.9±0.1 |
| PS/K | V15 | 7.3±0.3×4.3±0.3×1.4±0.1 |
| PS/K | V | 7.3±0.3×4.3±0.3×1.9±0.1 |
| PS/K | D | 7.3±0.3×4.3±0.3×2.8±0.3 |



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



125°C Rated Polymer Tantalum Chip Capacitor

NeoCapacitor™ PS/H Series



Highly reliable products optimized for industrial and communication devices which require reliability in high-temperature environments.

Features

- Operation temperature range : -55°C~+125°C
- Achieve low ESR/high ripple current tolerance using conductive polymers

Applications

- Server
- Base Station
- Communication Equipment
- LED Lighting
- Industrial Robot



Product Lineup

| Voltage/Capacitance | 2.5V | 6.3V | 10V | 16V | 25V | 35V |
|---------------------|------|------|-----|------|------|------|
| 3.3μF | | | | | | (B2) |
| 4.7μF | | | | | (B2) | |
| 22μF | | | | (B2) | | |
| 33μF | | | | (B2) | | |
| 47μF | | | B2 | | | |
| 100μF | | B2 | | | | |
| 150μF | | (B2) | | | | |
| 220μF | (B2) | (B2) | | | | |
| 330μF | (B2) | | | | | |

| Series | Case code | Dimension [mm] |
|--------|-----------|-------------------------|
| PS/H | B2 | 3.5±0.2×2.8±0.2×1.9±0.1 |

(): Under development

Frequency Characteristics

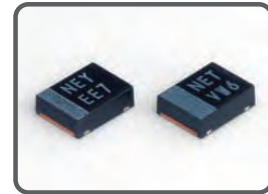
PSHB20J107M070 (B2/6.3V/100μF)



● All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
 ● Please request for a specification sheet for detailed product data prior to the purchase.
 ● Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



Face Down Package Polymer Chip Capacitor NeoCapacitor™ F/PS Series



A high reliability product suitable for lower profile and smaller motherboard footprint of notebook PCs pursuing high mobility.

Features

- Industry leading low profile and high capacity
- No reduction in capacitance due to DC bias
- No acoustic noise
- High level of safety

Applications

- Notebook PC
- Tablet PC
- HDD/SSD
- IoT Equipment

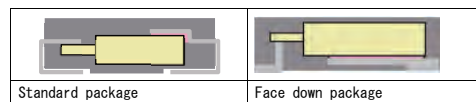
Product Lineup

| Voltage \ Capacitance | 2.5V | 6.3V | 10V | 16V | 25V | 35V |
|-----------------------|------|------|------|---------|------|-----|
| 6.8μF | | | | | | B3 |
| 10μF | | | | | (A2) | |
| 15μF | | | | | B3 | |
| 22μF | | | A3 | | | |
| 33μF | | | A3 | (A3) | | |
| 47μF | | A3 | A3 | (B3,A2) | | |
| 68μF | | | (B3) | | | |
| 100μF | | A3 | | | | |
| 150μF | | (A2) | | | | |
| 220μF | | (B3) | | | | |
| 330μF | (B3) | | | | | |

| Series | Case code | Dimension [mm] |
|--------|-----------|-------------------------|
| F/PS | A3 | 3.2±0.2×1.6±0.2×0.9±0.1 |
| F/PS | A2 | 3.2±0.2×1.6±0.2×1.1±0.1 |
| F/PS | B3 | 3.5±0.2×2.8±0.2×1.1±0.1 |

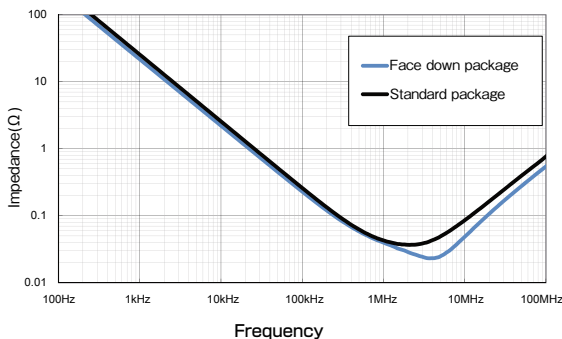
(): Under development

Construction



Frequency Characteristics

Standard package : PSLB31E685M (B3/25V/6.8μF)
Face down package : FPSB31V685M (B3/35V/6.8μF)



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



Axial Lead Type Aluminium Electrolytic Capacitor

Features

Optimal for applications which require high-reliability, long lifetime.

- High temperature(150°C, Rated voltage, 2,000hours, PEG226 Series)
- High vibration resistance(20G)
- High permissible ripple current(Max.28Arms)
- AEC Q200 Compliant, produced in a ISO/TS 16949 certified factory

Series development

| Series | PEG225 | PEG226 |
|--------------------------|--|---|
| Diameter Length | 16–20mm 26.5–42.5mm | 16–20mm 26.5–42.5mm |
| Features | +150°C Reduce voltage 2,000hours High CV High permissible ripple current (Max. 28Arms) High vibration resistance | +150°C Reduce voltage 2,000hours High permissible ripple current (Max. 28Arms) High vibration resistance |
| Capacitance range | 470–6300 μF | 250–4700 μF |
| Rated voltage | 25–63VDC | 25–63VDC |
| operating temperature | –40~+125°C (+125~+150°C: Reduce voltage) | –40~+150°C |

Applications

Automotive

- Cooling fan
- Water cooling pump
- Power steering
- Electric motorcycle/Electric scooter/EV
- Alternator
- Braking system
- Injection
- Valve control
- Idling stop
- Supercharger
- Active suspension



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

SuperCapacitor

The SuperCapacitor is a capacitor that employs the electric double layer principle to achieve an extremely large capacitance. It is ideal for backups requiring long life and high reliability.

Principle of Electrical Double Layer



$$C = \epsilon \epsilon_0 (4\pi\delta)^{-1} dS$$

ϵ : Dielectric constant of electrolyte
 δ : Distance from the electrode surface to the center of ion, which corresponds to a thickness of the electric double layer
 S : Surface area of the electrode interface

Features

- There is no limit for charge/discharge cycles. In principle, it has an unlimited cycle life.
- Since no chemical charge is involved, unlike a battery, quick charging and discharging is possible. Full charge is possible within a few seconds.
- General failure mode of SuperCapacitor is open circuit.
- Lineup matching various mounting form is available. Surface mounting and automatic mounting (self-alone mold type) can be applied.
- We guarantee a wide operating temperature range. High reliability type : -40 to 85°C
- RoHS Compliant

Applications and Markets

Since the TOKIN SuperCapacitor displays high structural reliability in humid environments and failure mode occurs in open circuits, they are widely used for data and clock backup, and other applications requiring high reliability, such as in infrastructure, traffic, automobiles, etc.

Lineup

| • μ A order applications | | | |
|---------------------------------------|-----------------------------|-----------------------------------|--|
| FR 5.5V | FGR 5.5V | High temperature guarantee (85°C) | FM FMR type 5.5V |
| FG 3.5 V to 5.5V | FGH 3.5 V to 5.5V | | Automatic assembly type 3.6V-High reliability |
| | | Low profile | FMR 0V type 3.6V-85°C |
| | | | FCS 3.5 V to 5.5V |
| • mA order applications | | | |
| FT 5.5V | FS 5.5 V to 12V | | FMS 5.5V |
| Compact High temperature type 85°C | | | SMD type Adoption of high reliability molding |



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



SuperCapacitor FMQ Series (Resin molded, Low ESR Type)

Features

- ☆Low ESR
 - Most suitable for peak assisting, and backup for clock
- ☆High reliability
 - Reliability is maintained even in high temperature and high humidity environment
 - : 85°C-85%RH-5.5V, 500h guaranteed
 - World's first capacitor usable at high temperature environment of +105°C
 - : 105°C-5.5V, 500h (actual value)



Dimensions



Specifications

| Rated voltage [Vdc] | ESR [Ω] | Nominal capacitance (Discharge system) [F] | Current at 30min. [mA] |
|---------------------|------------------|--|------------------------|
| 5.5 | 1.0 | 1.0+80/-20% | 1.5 |

※Category temperature: -40 ~ +105°C



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Micro Energy Harvesting - MEH

Merit of MEH: Maintenance free/self-supporting power supply

Merit 1 · Compact and High Convenience

- Module is compact, palm-sized.
- Each unit is replaceable to cartridge type.



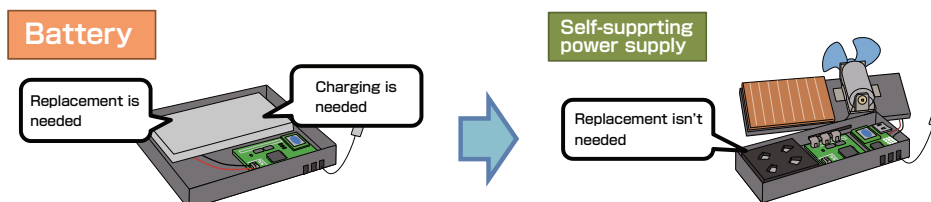
Merit 2 · Possible Expansion of the Storage Capacity

- MEH module with built-in SuperCapacitor can be easily consolidated, it is possible to expand the capacity of the storage according to the application.



Merit 3 · Unnecessary Battery Replacement

- Build maintenance free power supply by using several energy harvesting sources and SuperCapacitor that is without deterioration in charge/discharge cycle.



Metal Composite Inductors for Automotive application



Features

- Operating temperature range: **-40°C to +150°C** (Include self temperature rise)
- AEC-Q200
- High reliability products (Automotive Market)
- Shielded construction, Large current, Low DCR
- Pb-free, RoHS Compliant

Applications

- Inductor for ECU (Automotive) (EPS, LED Head Light, SRS)

Product line up

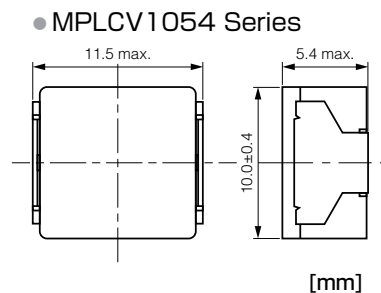
| Series | Inductance (μ H) At 100kHz, 1mA | I _{rms} *1 (A) | I _{sat} *2 (A) |
|---------------|--|------------------------------|------------------------------|
| MPLCV0645L100 | 10±20% | 4.0 | 6.5 |
| MPLCV0654L4R7 | 4.7±20% | 6.3 | 10.5 |
| MPLCV0654L330 | 33±20% | 2.6 | 4.0 |
| MPLCV0654L470 | 47±20% | 2.1 | 3.0 |
| MPLCV1054L100 | 10±20% | 7.1 | 12.0 |
| MPLCV1054L220 | 22±20% | 5.5 | 7.0 |

*1 40°C rise at rated current. *2 Inductance drop 30%.

● Operating temperature range : -40°C to +150°C (Include self temperature rise), AEC-Q200

Dimensions

- MPLCV0645 Series
- MPLCV0654 Series



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Custom Product

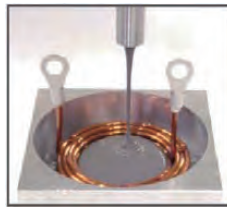
Metal Composite Reactors

Features

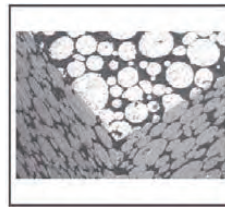
- Integrally molded reactor by inject molding of our original technology
- Superior design flexibility by inject molding method
- Leakage flux is small due to have a distributed gap
- Excellent heat dissipation efficiency by integral molding
- Able to support a high-frequency (50kHz or less)

Applications

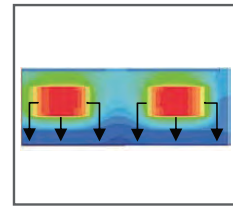
- Inverter for HEV/PHEV
- Power conditioner



【Injection process】



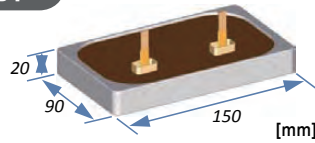
【Cross-section of core】



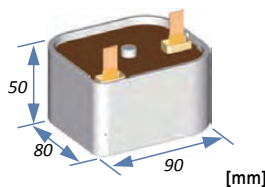
【Thermal analysis】
 Example; heat radiation to the bottom

Specification example

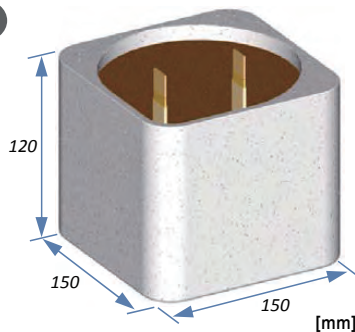
Low height type



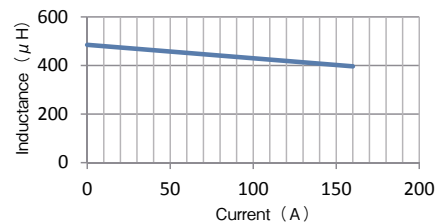
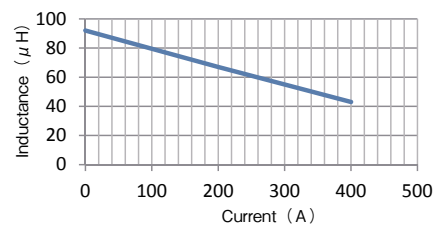
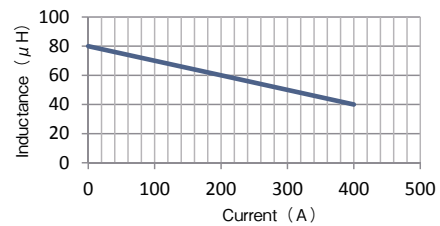
Standard type



Large size



Characteristics (typ.)



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



UL94 V-0 Flame Retardant type Flex Suppressor®



Features

- Lowered impact to the environment, Halogen free
- UL94 V-0
- EFA : μ 60 permeability, Roll acceptable, **Red phosphorus free**
- FF1 : μ 100 permeability, **Supports Roll up to 0.3mm, AEC-Q200**
- EFF4: μ 140 permeability, **AEC-Q200**

Applications

- Noise radiation suppression, Internal interference suppression
- Anti-ESD measure for electric devices.

Specifications

| Features | Red phosphorus free type | NEW Roll type | NEW High μ type |
|---|---|------------------|------------------------|
| Type | EFA | FF1 | EFF4 |
| Effective frequency | Up to 10GHz | | |
| Operating temperature (°C) | -40 to +105 | | |
| Thickness (mm) | 0.05/0.1/0.2/0.3 | | 0.1/0.2/0.3/0.5 |
| Standard dimensions (mm) | 240×240 / Roll acceptable | | 240×240 |
| Specific gravity | 3.1 (typ.) | | 3.7 (typ.) |
| Approved standard | UL94 V-0 (UL File No.E176124) | | |
| Environment | RoHS compliant, Halogen free / PVC free / Lead free | | |
| | Red phosphorus free | - | |
| Relative magnetic permeability(at 3MHz) | 60(typ.) | 100(typ.) | 140(typ.) |

Permeability characteristics



*Above data are not guaranteed values.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



High Magnetic Permeability type Flex Suppressor®



Features

- Lowered impact to the environment, Halogen free
- Red phosphorus free
- UL94 HB
- FX5 : μ 150 permeability, Roll acceptable
- EFX6 : μ 160 permeability

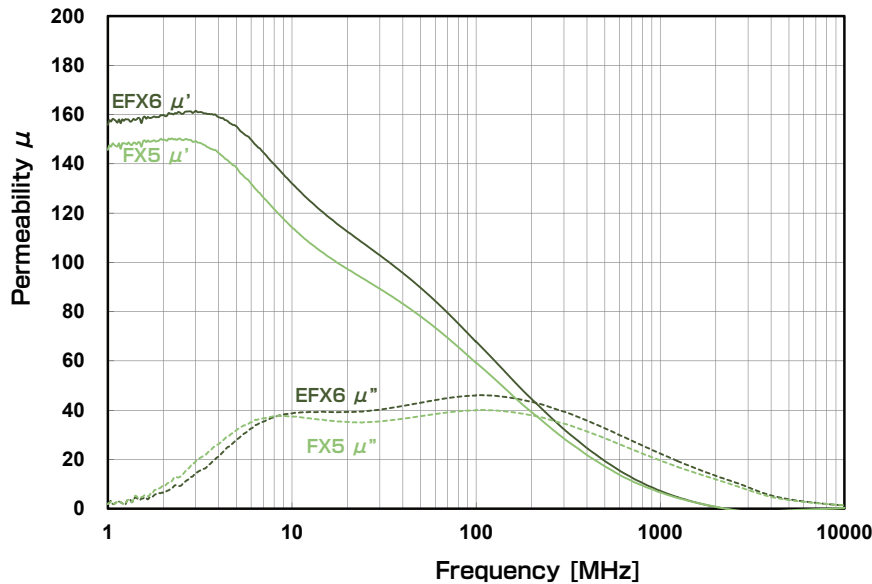
Applications

- Noise radiation suppression, Internal interference suppression
- Anti-ESD measure for electric devices.

Specifications

| Features | Ultra thin, Roll type NEW | High μ type NEW |
|---|--|--|
| Type | FX5 | EFX6 |
| Effective frequency | Up to 10GHz | |
| Operating temperature (C) | -40 to +105 | |
| Thickness (mm) | 0.025/0.05/0.075 | 0.1/0.2/0.3 |
| Standard dimensions (mm) | 240x240 / Roll acceptable | 240x240 |
| Specific gravity | 3.3(typ.) | 3.8(typ.) |
| Approved standard | UL94 HB (UL File No.E176124) | |
| Environment | RoHS compliant, Halogen free / PVC free / Lead free Red phosphorus free | |
| Relative magnetic permeability(at 3MHz) | 150(typ.) | 160(typ.) |

Permeability characteristics



*Above data are not guaranteed values.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



GHz band High Performance type Flex Suppressor[®]



Features

- Lowered impact to the environment, Halogen free
- Red phosphorus free
- UL94 HB
- FG1 : Roll acceptable
- EFG2 : Excellent suppression of high frequency noise

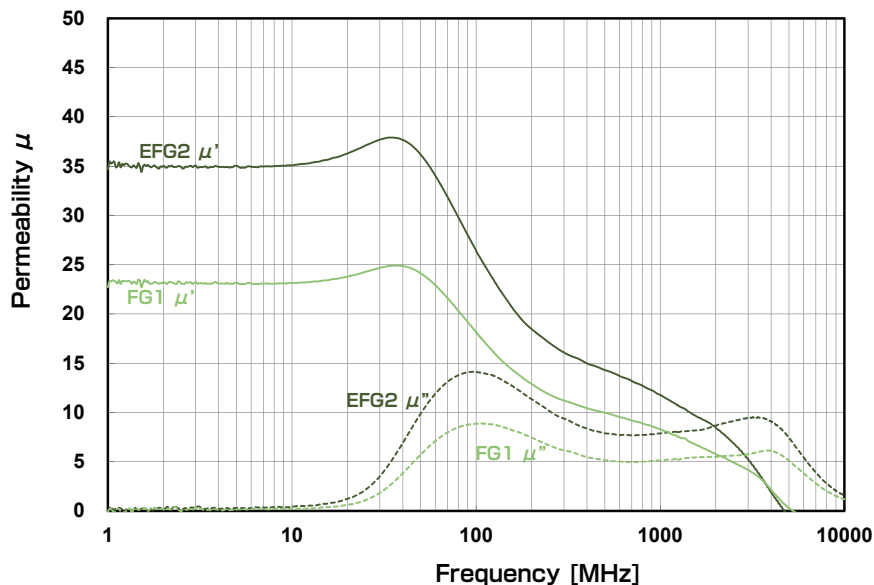
Applications

- Measures for the desense LTE, Wi-Fi, GPS, etc.

Specifications

| Features | Ultra thin, Roll type | High performance type |
|--|---|-----------------------|
| | FG1 | EFG2 |
| Effective frequency | 1GHz to 10GHz | |
| Operating temperature (°C) | -40 to +105 | |
| Thickness (mm) | 0.025/0.05/0.075 | 0.1/0.2/0.3 |
| Standard dimensions (mm) | 240x240 / Roll acceptable | 240x240 |
| Specific gravity | 3.1 (typ.) | 3.9 (typ.) |
| Approved standard | UL94 HB (UL File No.E176124) | |
| Environment | RoHS compliant, Halogen free / PVC free / Lead free | |
| | Red phosphorus free | |
| Relative magnetic permeability (at 3MHz) | 25 (typ.) | 35 (typ.) |

Permeability characteristics



*Above data are not guaranteed values.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.



Nanocrystal EMI Core ESD-R-H-NC Series



Features

- Suppresses radiation and conduction noise in wide frequency range
- Ring type: Correspondence from small diameter to large diameter
- Operating temperature range: $-40^{\circ}\text{C}\sim+120^{\circ}\text{C}$
- Frame retardant: UL94 V-0

Applications

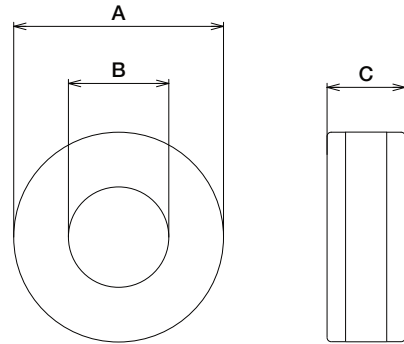
- General purpose inverters
- Air conditioners
- Multifunction printers for business use
- Industrial equipments

Dimensions

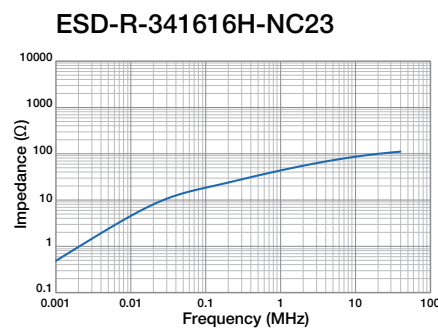
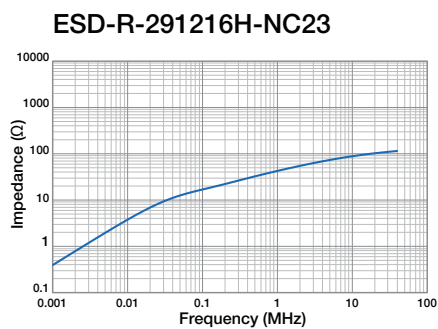
※Custom design available

| Model | Dimensions (mm) | | |
|----------------------|-----------------|-------|------|
| | A | B | C |
| ESD-R-291216H-NC23 | 29.0 | 12.7 | 16.0 |
| ESD-R-341616H-NC23 | 34.0 | 16.5 | 16.0 |
| ESD-R-421617H-NC23 | 42.0 | 16.7 | 17.0 |
| ESD-R-512936H-NC23 | 51.0 | 29.5 | 36.0 |
| ESD-R-512419H-NC23 | 51.0 | 24.4 | 19.0 |
| ESD-R-613325H-NC23 | 61.0 | 33.2 | 25.0 |
| ESD-R-854626H-NC23 | 85.0 | 46.0 | 26.0 |
| ESD-R-1105826H-NC23 | 110.0 | 58.5 | 26.0 |
| ESD-R-1469637H-NC23 | 146.0 | 96.0 | 37.0 |
| ESD-R-20515636H-NC23 | 205.0 | 156.0 | 36.0 |

※ This series still in the development stage. Changes may be make at the start of mass production.
 ※ The series with a base is also under development. Please contact TOKIN for details.



Impedance Characteristics (Typ. value)



※This product is under development and design might be changed.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

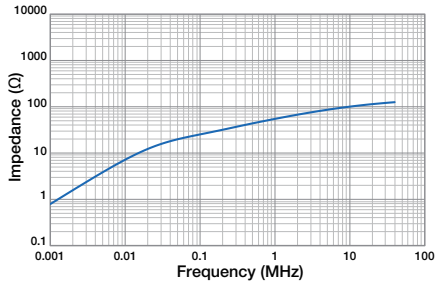
ESD-R-421617H-NC23



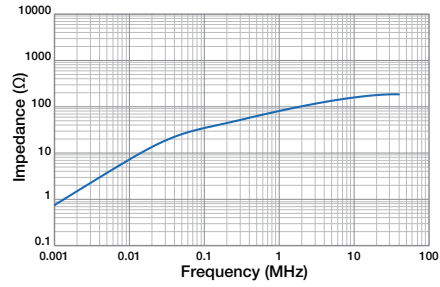
ESD-R-512936H-NC23



ESD-R-512419H-NC23



ESD-R-613325H-NC23



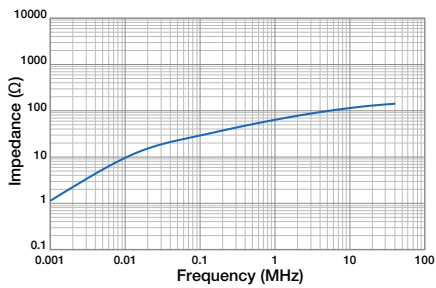
ESD-R-854626H-NC23



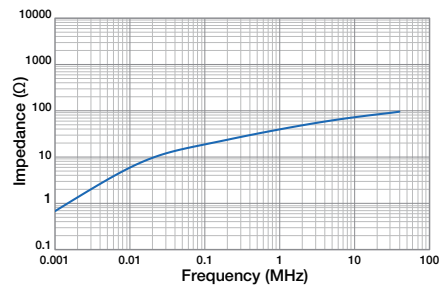
ESD-R-1105826H-NC23



ESD-R-1469637H-NC23



ESD-R-20515636H-NC23



※This product is under development and design might be changed.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Custom
Product

Three-phase SCF Series

Features

- High current series (up to 60A)
- Rated voltage 500V correspondence
- Operating temperature ~120°C, UL94 V-0
- Metal-based magnetic materials are employed

Applications

- Air conditioner
- Power conditioner
- Industrial equipment with inverter

Specification

| Part number | Core size | Rated current (A) | Inductance (mH) Min. | DC resistance (mΩ/line) Max. | Input and output terminal |
|-----------------------------|-----------|-------------------|----------------------|------------------------------|--|
| SCF38B - 250 - S2R3A004J/JH | FR38 | 25 | 0.4 | 1.8 | on-board mount |
| SCF47B - 300 - S1R7C010J/JH | FR47 | 30 | 1.0 | 2.5 | on-board mount |
| SCF56B - 400 - S2R3A035J/JH | FR56 | 40 | 3.5 | 4.5 | on-board mount |
| 3 Phase 4 line SCF Series | FR38~68 | 15/20/30/60 | 0.4~4.0 | 0.3~6.0 | on-board mount terminal connecting board assembly type |

Dimensions

3 Phase SCF (vertical)



3 Phase SCF (horizontal)



3 Phase 4 line SCF (on-board mount)



3 Phase 4 line SCF (terminal connecting)



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEW SSHB10HS Series



Features

- Hybrid coil capable of simultaneously suppressing common and normal noises with one coil
- Unique core molding technology and materials development realizes quiet operation and excellent superimposition characteristics at high temperature
- Class B (130°C) support

Applications

- LED lighting
- AV equipment
- OA equipment
- Power supply

Specification

※Custom design available

| Part number | Rated current (A) | Inductance [common] (mH)Min. | Inductance [normal] (μH)Typ. | Wire size (mmφ) | DC resistance(Ω/line) Typ. |
|----------------|-------------------|------------------------------|------------------------------|-----------------|----------------------------|
| SSHB10HS-04265 | 0.4 | 26.5 | 949 | 0.20 | 2.269 |
| SSHB10HS-05177 | 0.5 | 17.7 | 635 | 0.23 | 1.436 |
| SSHB10HS-06140 | 0.6 | 14.0 | 502 | 0.25 | 1.087 |
| SSHB10HS-07099 | 0.7 | 9.9 | 353 | 0.28 | 1.736 |
| SSHB10HS-08068 | 0.8 | 6.8 | 243 | 0.30 | 0.519 |
| SSHB10HS-10051 | 1.0 | 5.1 | 185 | 0.32 | 0.404 |
| SSHB10HS-11043 | 1.1 | 4.3 | 154 | 0.35 | 0.313 |
| SSHB10HS-13030 | 1.3 | 3.0 | 108 | 0.37 | 0.232 |
| SSHB10HS-17019 | 1.7 | 1.9 | 71 | 0.40 | 0.157 |
| SSHB10HS-22011 | 2.2 | 1.1 | 41 | 0.45 | 0.094 |
| SSHB10HS-30006 | 3.0 | 0.6 | 23 | 0.50 | 0.059 |

Impedance Characteristics

Common mode



Normal mode



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEW SSHB21HS Series



Features

- Hybrid coil capable of simultaneously suppressing common and normal noises with one coil
- Unique core molding technology and materials development realizes quiet operation and excellent superimposition characteristics at high temperature
- Class B (130°C) support

Applications

- LED lighting
- AV equipment
- OA equipment
- Power supply

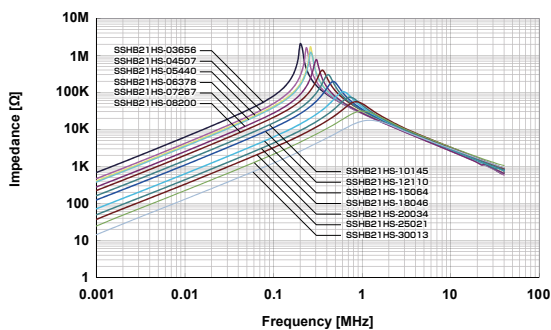
Specification

※Custom design available

| Part number | Rated current (A) | Inductance [common] (mH)Min. | Inductance [normal] (μH)Typ. | Wire size (mm φ) | DC resistance(Ω/line) Typ. |
|----------------|-------------------|------------------------------|------------------------------|------------------|----------------------------|
| SSHB21HS-03656 | 0.3 | 65.6 | 1819 | 0.20 | 2.609 |
| SSHB21HS-04507 | 0.4 | 50.7 | 1407 | 0.23 | 1.820 |
| SSHB21HS-05440 | 0.5 | 44.0 | 1221 | 0.23 | 1.695 |
| SSHB21HS-06378 | 0.6 | 37.8 | 1048 | 0.25 | 1.328 |
| SSHB21HS-07267 | 0.7 | 26.7 | 742 | 0.28 | 0.902 |
| SSHB21HS-08200 | 0.8 | 20.0 | 559 | 0.30 | 0.672 |
| SSHB21HS-10145 | 1.0 | 14.5 | 402 | 0.32 | 0.501 |
| SSHB21HS-12110 | 1.2 | 11.0 | 305 | 0.35 | 0.364 |
| SSHB21HS-15064 | 1.5 | 6.4 | 178 | 0.37 | 0.241 |
| SSHB21HS-18046 | 1.8 | 4.6 | 128 | 0.40 | 0.178 |
| SSHB21HS-20034 | 2.0 | 3.4 | 95 | 0.45 | 0.130 |
| SSHB21HS-25021 | 2.5 | 2.1 | 59 | 0.50 | 0.079 |
| SSHB21HS-30013 | 3.0 | 1.3 | 38 | 0.55 | 0.051 |

Impedance Characteristics

Common mode



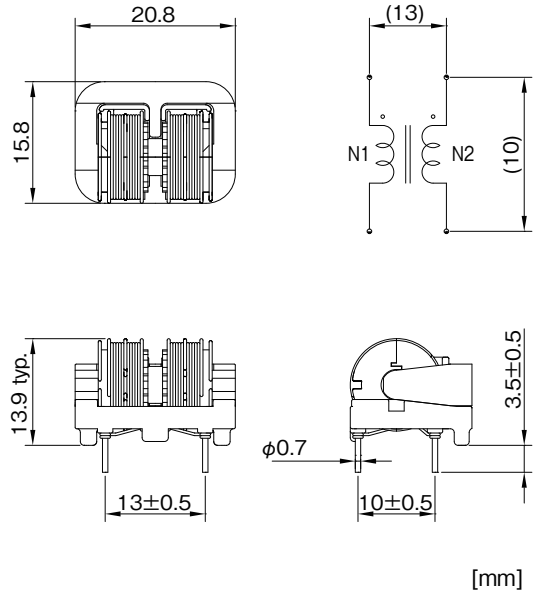
Normal mode



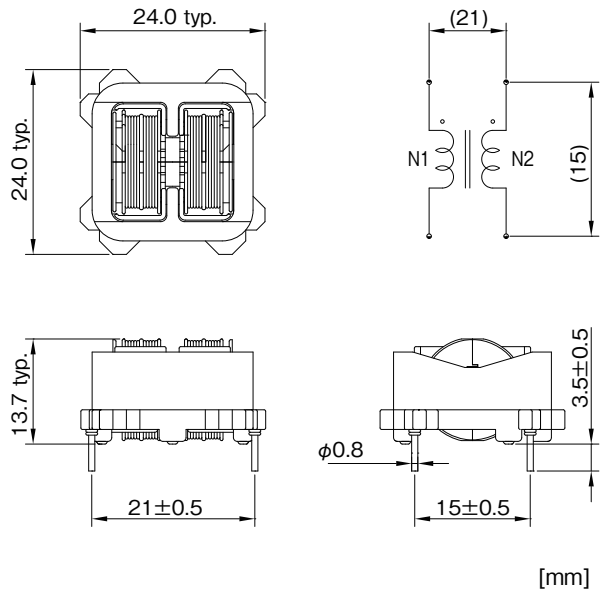
- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEW SSHB Series Shapes and Dimensions

SSHB10HS



SSHB21HS



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEW SSRH24NV Series



Features

Using high magnetic permeability material S18H optimized core and structure

- Downsized(30% less volume than SS28V Series)
- Expanded current range
(SS28V Series: up to 2.5A → New product: up to 5A)
- Realized high performance, low Rdc(Compared to SS28V Series, Inductance: 2 times or more, Rdc: 3% or greater reduction)
- Non-split bobbin design for ultra-high impedance characteristics

Applications

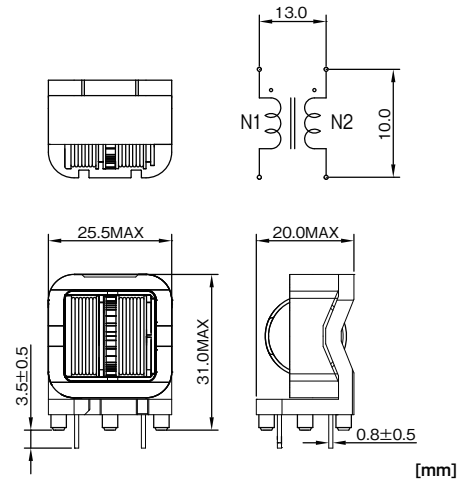
- AV equipment
- OA equipment
- Digital appliance
- Power supply

Specification

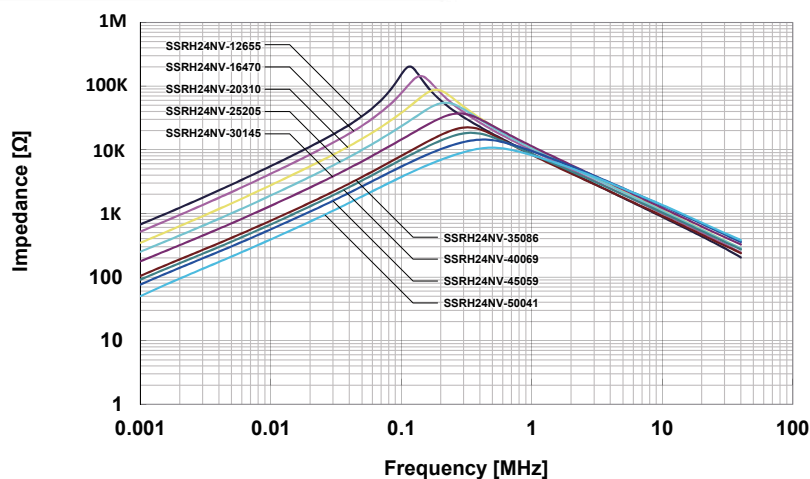
※Custom design available

| Part number | Rated current (A) | Inductance (mH) Min. | DC resistance (Ω/line) Max. | Temperature rise (K) Max. |
|----------------|-------------------|----------------------|-----------------------------|---------------------------|
| SSRH24NV-12655 | 1.2 | 65.5 | 0.475 | 65 |
| SSRH24NV-16470 | 1.6 | 47 | 0.327 | 65 |
| SSRH24NV-20310 | 2.0 | 31 | 0.214 | 65 |
| SSRH24NV-25205 | 2.5 | 20.5 | 0.145 | 65 |
| SSRH24NV-30145 | 3.0 | 14.5 | 0.102 | 65 |
| SSRH24NV-35086 | 3.5 | 8.6 | 0.078 | 65 |
| SSRH24NV-40069 | 4.0 | 6.9 | 0.057 | 65 |
| SSRH24NV-45059 | 4.5 | 5.9 | 0.048 | 65 |
| SSRH24NV-50041 | 5.0 | 4.1 | 0.035 | 65 |

Dimensions



Impedance Characteristics



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEW SSRH24NVS Series



Features

- Using high magnetic permeability material S18H optimized core and structure
- Downsized (30% less volume than SS28V Series)
 - Expanded current range
(SS28V Series: up to 2.5A → New product: up to 5A)
 - Realized high performance, low Rdc (Compared to SS28V Series, Inductance: 1.6 times or more, Rdc: 20% or greater reduction)
 - Split bobbin design for wideband impedance characteristics

Applications

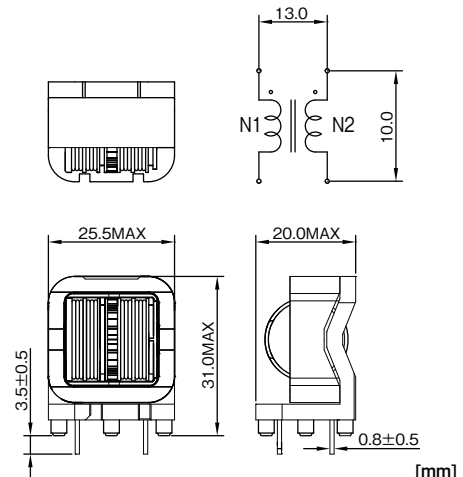
- AV equipment
- OA equipment
- Digital appliance
- Power supply

Specification

※ Custom design available

| Part number | Rated current (A) | Inductance (mH) Min. | DC resistance (Ω/line) Max. | Temperature rise (K) Max. |
|-----------------|-------------------|----------------------|-----------------------------|---------------------------|
| SSRH24NVS-12500 | 1.2 | 50 | 0.430 | 65 |
| SSRH24NVS-16320 | 1.6 | 32 | 0.265 | 65 |
| SSRH24NVS-20215 | 2.0 | 21.5 | 0.177 | 65 |
| SSRH24NVS-25130 | 2.5 | 13 | 0.111 | 65 |
| SSRH24NVS-30092 | 3.0 | 9.2 | 0.079 | 65 |
| SSRH24NVS-35080 | 3.5 | 8 | 0.074 | 65 |
| SSRH24NVS-40059 | 4.0 | 5.9 | 0.055 | 65 |
| SSRH24NVS-45041 | 4.5 | 4.1 | 0.041 | 65 |
| SSRH24NVS-50026 | 5.0 | 2.6 | 0.027 | 65 |

Dimensions



Impedance Characteristics



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Under development

SSRH30NH Series



Features

- Using high magnetic permeability material S18H optimized core and structure
High inductance characteristics as toroid core (equivalent to SC type)
- High current series (up to $\phi 1.3$, up to 10A)

Applications

- AV equipment
- OA equipment
- Digital appliance
- Power supply

Specification

※ Custom design available

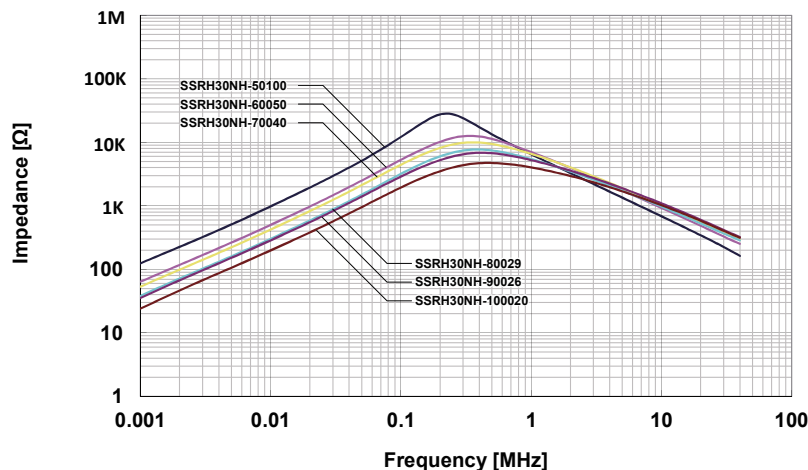
| Part number | Rated current (A) | Inductance (mH) Min. | DC resistance (Ω /line) Max. | Wire size (mm ϕ) |
|-----------------|-------------------|----------------------|--------------------------------------|------------------------|
| SSRH30NH-50100 | 5 | 10 | 0.053 | 0.85 |
| SSRH30NH-60050 | 6 | 5.0 | 0.028 | 0.95 |
| SSRH30NH-70040 | 7 | 4.0 | 0.023 | 1.0 |
| SSRH30NH-80029 | 8 | 2.9 | 0.0165 | 1.1 |
| SSRH30NH-90026 | 9 | 2.6 | 0.0135 | 1.2 |
| SSRH30NH-100020 | 10 | 2.0 | 0.010 | 1.3 |

Dimensions



[mm]

Impedance Characteristics



※ This product is under development and design might be changed.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEW SSRH7H-M Series



Features

- Smallest-in-industry gear common choke for low current applications
- High performance and reduced size through use of high magnetic permeability material S18H and optimization of the core shape and product structure (Compared to SU10VFC Series, Inductance: 1.6 times or more, Volume: 35% less)
- Non-split bobbin design for ultra-high impedance characteristics

Applications

- AV equipment
- OA equipment
- Digital appliance
- Compact power supply

Specification

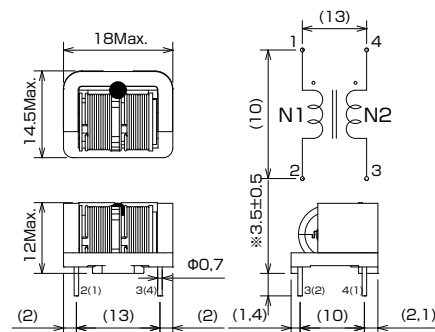
※ Custom design available

| Model | Rated current (A) | Inductance (mH) Min. | DC resistance (Ω/line) Max. | Wire size (mm φ) | Temperature rise Max. |
|----------------|-------------------|----------------------|-----------------------------|------------------|-----------------------|
| SSRH7H-M031157 | 0.3 | 115.7 | 3.57 | 0.16 | 55 |
| SSRH7H-M04596 | 0.4 | 59.6 | 2.02 | 0.18 | 55 |
| SSRH7H-M05408 | 0.5 | 40.8 | 1.36 | 0.20 | 55 |
| SSRH7H-M06237 | 0.6 | 23.7 | 0.78 | 0.23 | 55 |
| SSRH7H-M07196 | 0.7 | 19.6 | 0.71 | 0.23 | 55 |
| SSRH7H-M08169 | 0.8 | 16.9 | 0.56 | 0.25 | 55 |
| SSRH7H-M10108 | 1.0 | 10.8 | 0.36 | 0.28 | 55 |
| SSRH7H-M11081 | 1.1 | 8.1 | 0.27 | 0.30 | 55 |
| SSRH7H-M13064 | 1.3 | 6.4 | 0.21 | 0.32 | 55 |
| SSRH7H-M15043 | 1.5 | 4.3 | 0.14 | 0.35 | 55 |
| SSRH7H-M17029 | 1.7 | 2.9 | 0.12 | 0.35 | 55 |
| SSRH7H-M20016 | 2.0 | 1.6 | 0.09 | 0.35 | 55 |

Impedance Characteristics

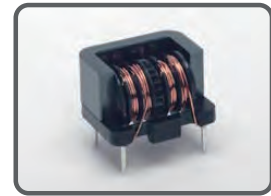


Dimensions



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

NEW SSRH7HS-M Series



Features

- Smallest-in-industry gear common choke for low current applications
- High performance and reduced size through use of high magnetic permeability material S18H and optimization of the core shape and product structure (Compared to SU10VFC Series, Inductance: 1.3 times or more, Volume: 35% less)
- Split bobbin design for wideband impedance characteristics

Applications

- AV equipment
- OA equipment
- Digital appliance
- Compact power supply

Specification

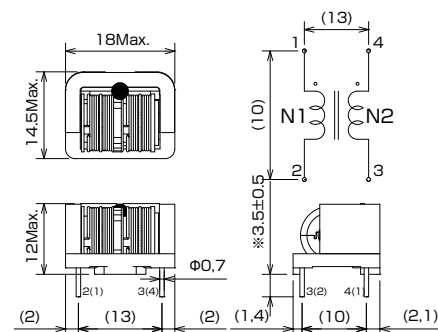
※ Custom design available

| Model | Rated current (A) | Inductance (mH) Min. | DC resistance (Ω/line) Max. | Wire size (mm φ) | Temperature rise Max. |
|----------------|-------------------|----------------------|-----------------------------|------------------|-----------------------|
| SSRH7HS-M03925 | 0.3 | 92.5 | 3.18 | 0.16 | 50 |
| SSRH7HS-M04467 | 0.4 | 46.7 | 1.79 | 0.18 | 50 |
| SSRH7HS-M05324 | 0.5 | 32.4 | 1.21 | 0.20 | 50 |
| SSRH7HS-M06185 | 0.6 | 18.5 | 0.69 | 0.23 | 50 |
| SSRH7HS-M07154 | 0.7 | 15.4 | 0.63 | 0.23 | 50 |
| SSRH7HS-M08134 | 0.8 | 13.4 | 0.50 | 0.25 | 50 |
| SSRH7HS-M10084 | 1.0 | 8.4 | 0.32 | 0.28 | 50 |
| SSRH7HS-M11064 | 1.1 | 6.4 | 0.24 | 0.30 | 50 |
| SSRH7HS-M13046 | 1.3 | 4.6 | 0.18 | 0.32 | 50 |
| SSRH7HS-M15036 | 1.5 | 3.6 | 0.13 | 0.35 | 50 |
| SSRH7HS-M17023 | 1.7 | 2.3 | 0.1 | 0.35 | 50 |
| SSRH7HS-M20013 | 2.0 | 1.3 | 0.08 | 0.35 | 50 |

Impedance Characteristics



Dimensions



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Current Sensor (Clamp CT: C/CT-1216)



Sensors based on proprietary materials that contribute to energy saving.

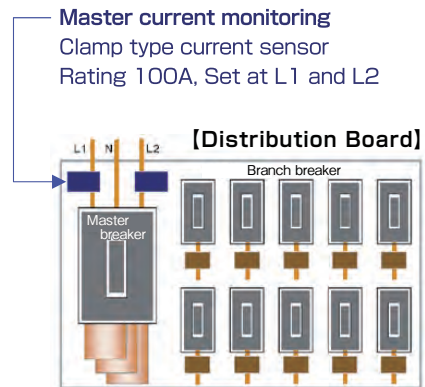
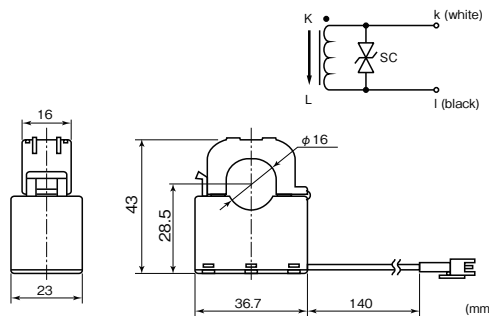
Features

- New design structure . Improved ratio error characteristics(50% reduction from existing model)
- Flat temperature characteristics by original core material
- Compact & Slim design
- Noncombustible

Applications

- xEMS Measurements (Power monitoring)
- Power conditioners, Inverter units
- Distribution boards
- Power monitoring system

Dimensions



Specifications

| Items | Unit | STD | Condition |
|-------------------------|------|----------|-----------------------------------|
| Rated primary current | Arms | 120 | 50Hz/60Hz |
| Applied current | Arms | 0.1~120 | 50Hz/60Hz |
| Output voltage | mV | 1000±20 | I _o =50A RL=60Ω f=50Hz |
| Ratio of current trans. | - | 3000 : 1 | - |
| Output protection | Vp | 7.5 | - |
| Ratio error | % | ±1.0 | |
| Phase angle | ° | ≤1 | |
| Insulation resistance | MΩ | ≥100 | DC500V |
| Operating temperature | °C | -20~+60 | 80%RH or less No condensation |
| Storage temperature | °C | -20~+75 | 80%RH or less No condensation |



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Thermal Sensor (TRS[®] Series & OHD[™] Series)

Temperature sensing switches composed of a magnet, reed switch and original temperature-sensing soft ferromagnetic substance called Thermorite[™]. It has simple circuit design, high reliability and excellent temperature accuracy.

Features

- High reliability (Long product lifetime)
- Excellent temperature accuracy ($\pm 2.5^{\circ}\text{C}$, $\pm 5.0^{\circ}\text{C}$)
- Wide range of operating temperature available
- Excellent environmental resistance
- Approved several safety standard

Applications

- Thermal reed switch (TRS[®])
 - Temperature detection of electric appliances
 - Overheat monitoring, temperature control of heater unit
- Thermal guard (OHD[™])
 - OA equipment and other electric appliances
 - Atmospheric temperature detection of room heater, hot water heater and other general equipment

Appearance

TRS[®] Series



OHD[™] Series



Sensing temperature range

| | -50°C | 0°C | 50°C | 100°C | 150°C | 200°C | |
|-------------------------|-------|-------|--|--|-------|-------|--|
| TRS [®] Series | | -10°C | Sensing accuracy $\pm 2.5^{\circ}\text{C} / \pm 5.0^{\circ}\text{C}$ | | 130°C | | ※ Sensing temperature range is different in product series |
| OHD [™] Series | | | 30°C | Sensing accuracy $\pm 5.0^{\circ}\text{C}$ | | 130°C | ※ Break type ※ Make type (OHD5R has only break type) |



● All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
 ● Please request for a specification sheet for detailed product data prior to the purchase.
 ● Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Pyroelectric Infrared Sensor (PL Series)

Unobtrusive sensors that contribute to set designs

Pyroelectric Infrared Sensor using Pyroelectric effect of ceramic can detect even slight infrared energy from human body. By leveraging our proprietary technologies, we also propose new solutions such as detection through resin or glass and lens-less solutions, in addition to supporting lensed solutions.

Features(Bulk sensor)

- Lens-less also possible
- Capable of detecting through resin or glass (no hole required)
- SMD type (Reflow soldering)
- Wide field of view (± 60 deg)
- Low current consumption driving (a few μ A)
- Excellent high frequency electric wave resistance
- Compact & Low profile (5.0x4.8x1.7mm)

Applications

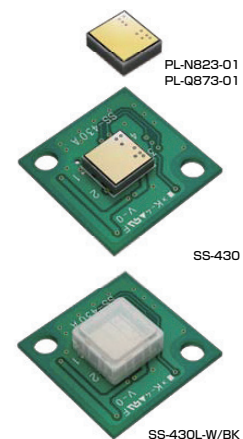
- Human sensor
- Housing equipment (Lighting, Toilet)
- Home appliance
- Kitchen appliance
- Contactless switch

Greater convenience
 Saving energy
 Improved design



Lineup

| | Detection distance(general guide) | | |
|-------------------------|--|--|---|
| | Glass/Permeable resin ~20cm | ~2m | ~5m |
| Bulk | Sensor : PL-N823-01 Lens : Not needed | | Under development Sensor : PL-Q873-01 Lens : PL-001L-W/BK |
| Standard module | — | Under development SS-430 | Under development SS-430L-W/BK |
| High-sensitivity module | Under development SS-431 | — | — |
| Notes | [Cover material choices] • Glass t3.2mm • ABS t2.0mm etc. | [Limited cover material] • High-density polyethylene (HDPE) | [Cover material not needed] • Lens eliminates need for cover • HDPE, if cover is to be used for design purposes |



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Vibration Sensor



Measure minute vibration in wide bandwidth and monitoring inside condition of equipment.

Feature

- High sensitivity (20mV/m/s²)
- Wide bandwidth sensing (10Hz~15kHz) with reasonable price
- Original product design brings high conversion efficiency

Application example <Pump vibration>



Measure two different operating sound of pumps



(VS-BVSeries)

Specifications

| | | |
|--------------------------|--------------------------|---------------------|
| Dimension without cable | [mm] | 11.5x8.5x2.9 (typ.) |
| Weight without cable | [g] | 0.9(typ.) |
| Drive voltage | [Vcc] | 3.3V/0.3mA |
| Sensitivity | [mV/(m/s ²)] | 20 (typ.) |
| Offset voltage | [V] | 1/2xVcc |
| Frequency range | [Hz] | 10~15000[3dB] |
| Min. detect acceleration | [m/s ²] | 0.003 |
| Max. detect acceleration | [m/s ²] | 50 |

※ Acceleration 1m/s² = 0.1G = 100Gal



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Piezo Receiver / Speaker



<New Type>Generates both Sound and Vibration from chassis at the same time

Features

- Sound comes from panel surface
- Easy to hear in noisy surrounding
- No sound hole
- Easy for waterproof and dust -proofing design
- Design flexibility

Application example



Operation principle

Piezo bimorph

Piezo acoustic module



Conventional (Electromagnetic) Receiver

- Narrow hearing area
- Sound hole is necessary



Specifications

| | Item | Specification | Note |
|---|----------------|---------------|------------------------------|
| 1 | Input Voltage | 20Vp-p | _____ |
| 2 | Capacitance | 960nF | at 1kHz-1Vrms |
| 3 | Dimension | 26Lx4Wx1.7T | (mm) |
| 4 | Weight | 0.8g | Including standard FPC |
| 5 | Sound Pressure | 106±3dB(1kHz) | Original measuring condition |

Dimension



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Multilayer Piezoelectric Actuators

Contributing to the realization of devices with higher speed, higher accuracy, higher power generation, reduced size, and lower power consumption.

Applications

- Valve control (MFC/proportional control valve)
- Probe control
- High speed focusing, 3D image acquisition
- Optical fiber/laser optical axis adjustment
- Interferometer mirror adjustment
- Correction of mirror angle displacement
- Pixel shifting for the image sensor
- Precise stage positioning
- Nanoimprint positioning
- Clamping (wire bonder)
- Dispensing equipment (ink jet/dispenser)
- Excitation/damping equipment
- Various tests (pressure, fatigue, wear, etc.)
- Various machining (precise centering, precise feeding)

Bring Fine, Quick and Power by Piezo technology



Resin coated type

We are enhancing our lineup from large displacement products to large power generating products.

| | Displacement (µm) at 150Vdc | Generated force (N) | Operating temperature |
|-----------|-----------------------------|---------------------|-----------------------|
| AE Series | 4.6~42.0 | 200~20,000 | -25°C~+85°C |

- Ring shape, ultra compact actuator and other custom design are available. Please contact us for further details.



Metal case type

High reliability by metal encapsulate

| | Displacement (µm) at 150Vdc | Generated force (N) | Operating temperature |
|------------|-----------------------------|---------------------|-----------------------|
| ASB Series | 17~84 | 200~3,000 | -25°C~+85°C |
| ASL Series | 19~77 | 800 | -40°C~+150°C |
| AHB Series | 55~240 | 800~3,600 | -25°C~+85°C |

- Two flange types available for installation
- * For detail specification, please refer to the catalogue of multilayer piezoelectric actuator



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Piezoelectric Ceramics

Contributing to the electronics industry through in-house developed high performance piezoelectric ceramics and application technologies.

Standard Ceramic Material

(Main material characteristics)

| Characteristics | N6 | N61 | N85 | N10 | N17 | N21 |
|-----------------------------------|----|-----|-----|-----|-----|-----|
| Dielectric constant | L | L | M | H | H | M |
| Electromechanical coupling factor | M | M | H | H | H | H |
| Piezoelectric d constant | L | L | L | H | H | M |
| Piezoelectric g constant | M | M | M | L | L | H |
| Mechanical Quality Factor | M | M | H | L | L | L |
| Curie Temperature | H | H | M | L | M | H |



- Characteristic Value: H = High, M = Medium, L = Low
- Other materials are available. Please contact us for details.

Applications

| Piezoelectric Ceramic Function | Application Field |
|--------------------------------|---|
| Acoustic & Ultrasonic | Sonar, Fish Finder, Medical Application, Flow Meter, Actuator for Camera, Measurement equipment |
| Piezoelectric Effect | Shock, Vibration, Pressure, Motion and Acceleration Sensors, Energy Harvest |
| Pyroelectric Effect | Motion Sensor (Human Detection) |
| Inverse Piezoelectric Effect | Pump, Valve, Haptic device, Knitting machine, Positioner, DSC Dust reduction |

Product Lineup

- Custom Piezoelectric Elements
- Langevin Bolt-on Transducers
- Ultrasonic Cleaning Elements
- Piezoelectric Bimorphs
- Molded Waterproof Transducers
- High Frequency Transducers
- Aerial Microphone Transducers
- Sonar Transducers



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Precautions



- The names of the products and the specifications in this catalog are subject to change without notice for the sake of improvement. The manufacturer also reserves the right to discontinue any of these products. At the time of delivery, please ask for specification sheets to check the contents before use.
- Descriptions in this catalog regarding product characteristics and quality are based solely on discrete components. When using these components, be sure to check the specifications with the component in question mounted on the products.
- The manufacturer's warranty will not cover any disadvantage or damage caused by improper use of the products, deviating from the characteristics, specifications, or conditions for use described in this catalog.
- Please be advised that the manufacturer accepts no responsibility for any infringement on third party patents or industrial copyrights by users of the manufacturer's products. The manufacturer is responsible only when such infractions are attributable to the structural design of the product and its manufacturing process.
- No part of this document may be reproduced without written permission from the manufacturer.
- Export Control
 - For customers outside Japan
TOKIN products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.
 - For customers in Japan
For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.
- This catalog is current as of November 2017.



- All specifications in this catalog and production status of products are subject to change without notice. Prior to the purchase, please contact TOKIN for updated product data.
- Please request for a specification sheet for detailed product data prior to the purchase.
- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

KEMET:

[SSHB21HS-03656](#) [SSHB21HS-04507](#) [SSHB21HS-05440](#) [SSHB21HS-06378](#) [SSHB21HS-07267](#) [SSHB21HS-08200](#) [SSRH7H-M20016](#) [SSRH7HS-M03925](#) [SSRH7HS-M04467](#) [SSRH7HS-M05324](#) [SSRH7HS-M06185](#) [SSRH7HS-M07154](#) [SSRH7H-M08169](#) [SSRH7H-M10108](#) [SSRH7H-M11081](#) [SSRH7H-M13064](#) [SSRH7H-M15043](#) [SSRH7H-M17029](#) [SSRH7HS-M20013](#) [SSRH7H-M031157](#) [SSRH7H-M04596](#) [SSRH7H-M05408](#) [SSRH7H-M06237](#) [SSRH7H-M07196](#) [SSRH7HS-M08134](#) [SSRH7HS-M10084](#) [SSRH7HS-M11064](#) [SSRH7HS-M13046](#) [SSRH7HS-M15036](#) [SSRH7HS-M17023](#) [SSHB10HS-10051](#) [SSHB10HS-11043](#) [SSHB10HS-13030](#) [SSHB10HS-17019](#) [SSHB10HS-22011](#) [SSHB10HS-30006](#) [SSHB21HS-30013](#) [SSHB10HS-04265](#) [SSHB10HS-05177](#) [SSHB10HS-06140](#) [SSHB10HS-07099](#) [SSHB10HS-08068](#) [SSHB21HS-10145](#) [SSHB21HS-12110](#) [SSHB21HS-15064](#) [SSHB21HS-18046](#) [SSHB21HS-20034](#) [SSHB21HS-25021](#) [SSRH24NV-12655](#) [SSRH24NV-16470](#) [SSRH24NV-20310](#) [SSRH24NV-25205](#) [SSRH24NV-30145](#) [SSRH24NV-35086](#) [SSRH24NHS-25130](#) [SSRH24NHS-30092](#) [SSRH24NHS-35080](#) [SSRH24NHS-40059](#) [SSRH24NHS-45041](#) [SSRH24NHS-50026](#) [SSRH24NVS-50026](#) [SSRH24NH-45059](#) [SSRH24NH-50041](#) [SSRH24NHS-12500](#) [SSRH24NHS-16320](#) [SSRH24NHS-20215](#) [SSRH24NH-40069](#) [SSRH24NVS-25130](#) [SSRH24NVS-30092](#) [SSRH24NVS-35080](#) [SSRH24NVS-40059](#) [SSRH24NVS-45041](#) [SSRH24NH-12655](#) [SSRH24NH-16470](#) [SSRH24NH-20310](#) [SSRH24NH-25205](#) [SSRH24NH-30145](#) [SSRH24NH-35086](#) [SSRH24NV-40069](#) [SSRH24NV-45059](#) [SSRH24NV-50041](#) [SSRH24NVS-12500](#) [SSRH24NVS-16320](#) [SSRH24NVS-20215](#)

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru