

# YAGEO



## AUTOMOTIVE & TRANSPORTATION

The ever increasing presence of electronics in the automotive environment requires a wide diversity of passive components possessing advanced product characteristics and superior reliability.

Car buyers are giving a higher priority to new and more sophisticated consumer and safety solutions, and these require in-vehicle systems of expanding complexity and performance. Examples include radar and camera-based driving aid systems, as well as improved graphical output in infotainment, dashboards and heads-up displays.

Yageo offers a broad portfolio of products designed for automotive applications, and address the latest trends in chassis and safety, driver assistance systems, body and convenience, infotainment, connectivity, security and reliability.

[www.yageo.com](http://www.yageo.com)



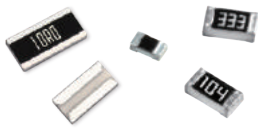
# Automotive & Transportation



## Chip Resistors

### AC Series

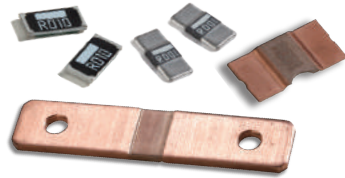
Automotive grade thick film (0201 to 2512)



- AEC-Q200 qualified
- Wide terminal available in 0612, 1020, 1225

### PE/PA/PU Series

Metal current sensors (0201 to 2512, 3921, 5931, 8518)



- AEC-Q200 qualified
- Humidity resistance & anti-FOS
- Highest rated power 36 W (600A)
- Jumper available

### AT Series

Automotive grade thin film high precision high stability (0402 to 1206)



- AEC-Q200 qualified
- Low current noise
- Humidity resistance & anti-FOS

### SR Series

High power surge resistance (0402 to 2512)



- AEC-Q200 qualified
- High rated power available
- Excellent anti-surge and pulse proof capability

## MLCC

### AC Series

Automotive grade



- Automotive grade
- AEC-Q200 qualified and PPAP ready
- ISO/IATF 16949 certified

### AS Series

Automotive grade soft termination



- AEC-Q200 qualified and PPAP ready
- Flexible termination system
- Increased mechanical performance

### AC-Array Series

Automotive grade 4-C array

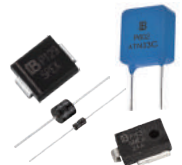


- Board space saving
- Time saving during mounting process
- Reduction in number of solder joints
- Easier PCB design

## Circuit Protection

### TVS Series

Transient Voltage Suppressors



- Safety certification by UL
- Low dynamic internal resistance, excellent clamping capability
- Fast response speed
- High voltage tolerance

## Through Hole Resistors

### ZCM Series

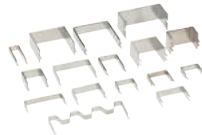
Metal film, miniature



- MELF type
- 85°C/85H, AEC-Q200 qualified
- Ultra low TCR (15ppm) & narrow tolerance (0.1%)
- Best in class pulse load capability
- Excellent stability in different environmental conditions

### LPS Series

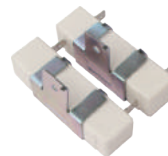
Low ohmic power resistors, current sensor



- Min. resistance 5mR
- AEC-Q200 qualified
- Very low inductance
- Open frame design
- Solderable terminals

### SQG Series

Power resistor, cement



- High power rating
- Excellent pulse load capability.
- Flameproof ceramic case
- AMP contacts

### AHB series

Wirewound resistors, high power, aluminum housed, heat sink type



- Reduced size
- Heat sink mounted
- High power rating (up to 500W)
- Wirewound (max. resistance up to 82Kohm)
- Corrosion-resistant aluminum case
- Excellent surge performance

## Wireless

### GNSS Antenna

Ceramic patch antenna



- Various size choices
- SMD/PIN type antenna
- GPS/GLONASS/Beidou supported
- Temperature: -40°C to 105°C
- RoHS compliant & halogen free

### GNSS Antenna

GPS Internal and external antenna



- Easy installation
- Flexible cable length and connector type
- High gain and high attenuation
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Bluetooth, Wifi connectivity
- Operating temperature: -40°C to 105°C
- RoHS compliant & halogen free

### NFC/NTAG Module

NFC/NTAG module



- Small size for easy installation
- NFC module for read / write and peer to peer function
- NTAG for pairing application
- RoHS compliant & halogen free



Inductors



Resistors



Capacitors



Wireless



Protection Components

# YAGEO



## HOME APPLIANCE

There is a trend of connecting home appliances together, and combining their controls and key functions. By networking all the devices at home, consumers can receive status updates from every home appliance. For example, self-regulating lighting, temperature control and air conditioning, this not only reduces energy consumption but also increases the quality of life.

Additionally, some manufacturers are beginning to place hardware that enables internet connectivity in home appliances to allow for remote control, automation, communication with other devices, new functionality and greater reliability.

The electronics content in home appliances continues to increase, not only to enable more new features and convenience of use, but significantly to save energy. This requires highly reliable electronic components that feature extremely high precision.



# Home Appliance



## Chip Resistors

### RC Series

General purpose thick film  
(0075 to 2512)



- AEC-Q200 qualified
- Extra small size (0075/ 01005) available

### SR Series

High power surge resistance  
(0402 to 2512)



- AEC-Q200 qualified
- High rated power available
- Excellent anti-surge and pulse proof capability

### RT Series

Thin film high precision high stability  
(0201 to 2512)



- AEC-Q200 qualified
- Low current noise
- Tight TCR (down to  $\pm 5\text{ppm}/^\circ\text{C}$ )
- Narrow tolerance (down to  $\pm 0.01\%$ )

### PA/PE Series

Metal current sensors  
(01005 to 2512)



- AEC-Q200 qualified
- Humidity resistance & anti-FOS
- Highest rated power 3W
- Jumper available
- Wide terminal available in PE0508, 0612, 0815

## MLCC

### CC-HC Series

High capacitance



- Very low ESR and ESL
- Low self heating
- High reliability with no polarity
- RoHS compliant & halogen free

### CC-HCV Series

High CV



- High capacitance and high voltage
- Higher energy density
- High reliability with no polarity
- RoHS compliant & halogen free

### CC-HV Series

High voltage



- Operates at high voltage
- Wide case size available
- High reliability with no polarity
- RoHS compliant & halogen free

### CC-Class I and Class II ( $\geq 0201$ )

General purpose



- Low ESR
- Suitable for all general purpose
- High reliability with no polarity
- RoHS compliant & halogen free

## Through Hole Resistors

### HHV Series

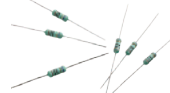
Metal glazed film resistors,  
high-voltage & high ohmic



- UL1676 and VDE 0860 certified
- High working voltage up to 7KV
- Max. over load voltage up to 14KV
- Max. resistance up to 68Mohm
- Flameproof silicone-coated

### PNP Series

Wirewound resistors, high power,  
flameproof, ultra miniature



- High reliability
- High power, ultra-miniature
- Flameproof silicone coated
- Excellent surge performance
- Fully lead-free compliance with no RoHS exemptions (7C-1)

### OTP Series

Over temperature protection  
fusible resistors



- UL certified
- Over temperature protection under overcurrent conditions
- Semi- short circuit quick fusing
- Wide resistance range
- Excellent antisurge and pulse load withstanding capability

### SLR Series

Cement resistors, low ohmic,  
metal plate type



- High power rating
- Low resistance (down to 10mR)
- Double power available
- Flameproof cement case
- Excellent surge performance
- Vertical terminal

## Wireless

### Sub-GHz/ Short-range Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Bluetooth, Wifi connectivity
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Bluetooth, Wifi connectivity
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

PCB antenna



- Easy installation
- Flexible cable length and connector type
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### NFC/NTAG Module

NFC/NTAG module

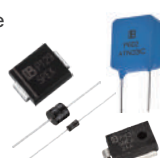


- Small Size for easy installation
- NFC module for read / write and peer to peer function
- NTAG for pairing application

## Circuit Protection

### TVS Series

Transient Voltage  
Suppressors



- Safety certification by UL
- Low dynamic internal resistance, excellent clamping capability
- Fast response speed
- High voltage tolerance

### MOV Series

Metal Oxide Varistors



- Fast response speed
- Safety certification by UL/ TUV/ VDE/ CSA/ CQC
- Good surge energy absorption capability
- $V_{BR}$  (Breakdown voltage) is by-directional and symmetric

### GDT Series

Gas Discharge Tubes



- Low junction capacitance
- Safety certification by UL/ VDE
- Insulation resistance:  $> 1\text{G}\Omega$ , low degradation speed, high reliability
- DC spark-over voltage: 75V ~ 6000V; Impulse spark-over voltage: 600 ~ 7800V

### NTC Series

Negative Temperature Coefficient  
Thermistor



- Excellent thermal cycle endurance
- Low cost, high stability



Inductors



Resistors



Capacitors

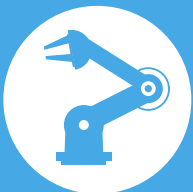
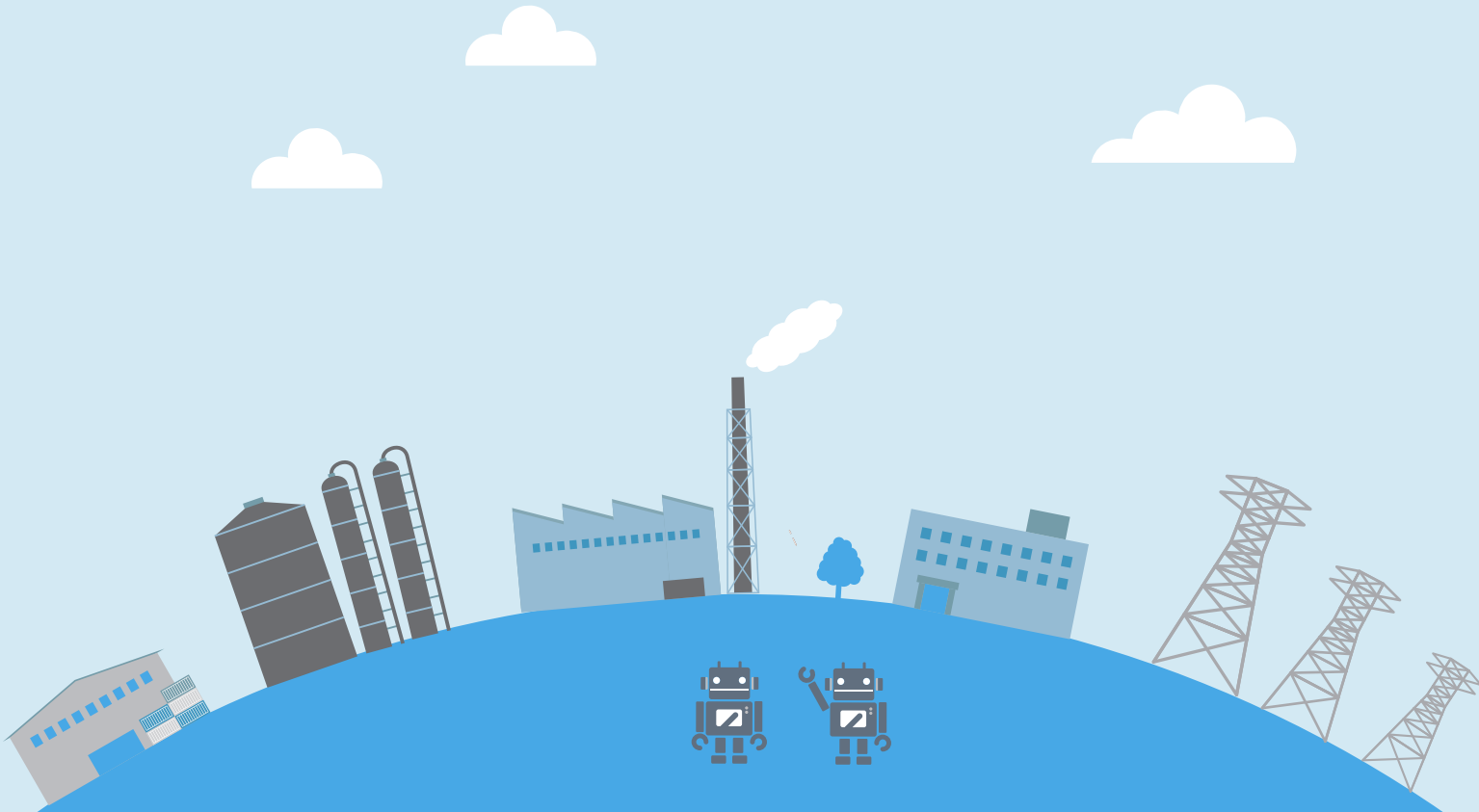


Wireless



Circuit Protection

# YAGEO



## INDUSTRIAL

The basic principle of Industry 4.0 is that by connecting machines, work pieces and systems, businesses are creating intelligent networks along the entire value chain that can control each other autonomously.

There are four design principles in Industry 4.0 – interoperability, information transparency, technical assistance and decentralized decisions. These principles present a set of recommendations to the companies in identifying and implementing Industry 4.0 scenarios.

Electronic components play a vital role in the electric circuitry of industrial applications, Yageo's products meet the following requirements: technically advanced, robust and highly reliable, long term performance characteristics and stability.



# Industrial



## Chip Resistors

### AC Series

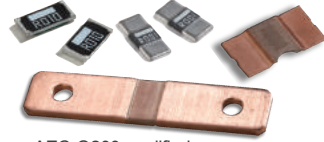
Automotive grade thick film (0201 to 2512)



- AEC-Q200 qualified
- Wide terminal available in 0612, 1020, 1225

### PE/PA/PU Series

Metal current sensors (0201 to 2512, 3921, 5931, 8518)



- AEC-Q200 qualified
- Humidity resistance & anti-FOS
- Highest rated power 36 W (600A)
- Jumper available

### RT/AT Series

Thin film high precision high stability (0201 to 2512)



- AEC-Q200 qualified
- Low current noise
- Tight TCR (down to  $\pm 5\text{ppm}/^\circ\text{C}$ )
- Narrow tolerance (down to  $\pm 0.01\%$ )

### AA Series

Sulfur resistance (0201 to 2512)



- AEC-Q200 qualified
- Humidity resistance
- Anti-FOS ( $\pm 4\%$  ASTM,  $105^\circ\text{C} / 750\text{hrs}$ )

## MLCC

### AC Series

Automotive grade



- Automotive grade
- AEC-Q200 qualified and PPAP ready
- ISO/IATF 16949 certified

### CC-HCV Series

High CV



- High capacitance and high voltage
- Higher energy density
- High reliability with no polarity
- RoHS compliant & halogen free

### CC-HV Series

High voltage



- Operates at high voltage
- Wide case size available
- High reliability with no polarity
- RoHS compliant & halogen free

### CS Series

Soft Termination



- Flexible termination system
- Improved resistance to thermal stresses
- Increased mechanical performance
- RoHS-complaint & halogen-free

## Through Hole Resistors

### AHB Series

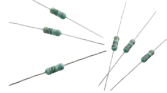
Wirewound resistors, high power, aluminum housed, heat sink type



- Reduced size
- Heat sink mounted
- High power rating (up to 500W)
- Wirewound (max. resistance up to 82Kohm)
- Corrosion-resistant aluminum case
- Excellent surge performance

### PNP Series

Wirewound resistors, high power, flameproof, ultra miniature



- High reliability
- High power, ultra-miniature
- Flameproof silicone coated
- Excellent surge performance
- Fully lead-free compliance with no RoHS exemptions (7C-1)

### CRP Series

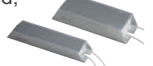
Precision wirewound resistors, pulse version



- Flame retardant coating
- High pulse load up to 6KV
- Narrow tolerance  $\pm 0.5\%$
- Z bending form for SMD
- RoHS compliant

### ATH Series

Wirewound resistors, high power, aluminum housed, trapezium type



- Excellent surge performance
- High power rating (up to 1800W)
- Wirewound (max. resistance up to 35Kohm)
- Corrosion-resistant aluminum case for severe environments
- Fully lead-free compliance with no RoHS exemptions (7C-1)

## Wireless

### Sub-GHz/Short-range Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Lora, Sigfox supported
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Bluetooth, Wifi connectivity
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

PCB antenna



- Easy installation
- Flexible cable length and connector type
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### X2Y

X2Y

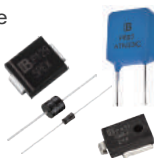


- Excellent performance in EMI suppression or decoupling
- Ultra-low equivalent series inductance (ESL)
- Provides differential & common mode filtering with single devices
- RoHS compliant & halogen free

## Circuit Protection

### TVS Series

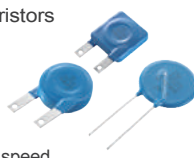
Transient Voltage Suppressors



- Safety certification by UL
- Low dynamic internal resistance, excellent clamping capability
- Fast response speed
- High voltage tolerance

### MOV Series

Metal Oxide Varistors



- Fast response speed
- Safety certification by UL/ TUV/ VDE/ CSA/ CQC
- Good surge energy absorption capability
- $V_{BR}$  (Breakdown voltage) is bi-directional and symmetric

### GDT Series

Gas Discharge Tubes



- Low junction capacitance
- Safety certification by UL/ VDE
- Insulation resistance:  $> 1\text{G}\Omega$ , low degradation speed, high reliability
- DC spark-over voltage:  $75\text{V} \sim 6000\text{V}$ ;
- Impulse spark-over voltage:  $600 \sim 7800\text{V}$

### NTC Series

Negative Temperature Coefficient Thermistor



- Excellent thermal cycle endurance
- Low cost, high stability



Inductors



Resistors



Capacitors



Wireless



Circuit Protection

# YAGEO



# IOT

# INTERNET OF THINGS

IoT (“Internet of Things”) has now been a buzz word for several years. It refers to the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, and connectivity which enables these things to connect, collect and exchange data.

A growing portion of IoT devices are created for consumer & commercial use, such as: smart home, wearable devices, medical & healthcare and appliances with remote monitoring capabilities. It is also for industrial applications like: transportation and manufacturing.

IoT creates opportunities for more direct integration of the physical world into computer-based systems, resulting in efficiency improvements, economic benefits, and reduced human exertions. Yageo provides various products to meet this “smart” trend.

[www.yageo.com](http://www.yageo.com)



# Internet of Things



## Chip Resistors

### RT Series

Thin film high precision high stability (0201 to 2512)



- AEC-Q200 qualified
- Low current noise
- Tight TCR (down to  $\pm 5\text{ppm}/^\circ\text{C}$ )
- Narrow tolerance (down to  $\pm 0.01\%$ )

### PA/PE Series

Metal current sensors (01005 to 2512)



- AEC-Q200 qualified
- Humidity resistance & anti-FOS
- Highest rated power 3W
- Jumper available
- Wide terminal available in PE0508, 0612, 0815

### SR Series

High power surge resistance (0402 to 2512)



- AEC-Q200 qualified
- High rated power available
- Excellent anti-surge and pulse proof capability

### RC Series

General purpose thick film (0075 to 2512)



- AEC-Q200 qualified
- Extra small size (0075/ 01005) available

## MLCC

### CC-HC Series

High capacitance



- Very low ESR and ESL
- Low self heating
- High reliability with no polarity
- RoHS compliant & halogen free

### CQ Series

High frequency



- HiQ and low ESR in VHF, UHF and microwave frequency bands
- BME process with copper inner electrodes
- Tight tolerance (min.  $\pm 0.05\text{pF}$ )
- High reliability with no polarity

### CL Series

Low inductance



- Low ESL capacitor
- For high frequency decoupling applications

### CC-Class I and Class II ( $\geq 0201$ )

General purpose



- Low ESR
- Suitable for all general purpose
- High reliability with no polarity
- RoHS compliant & halogen free

## Through Hole Resistors

### FKN Series

Wirewound resistors, fusible, flameproof



- UL1412 certified
- Fusing time  $< 60$  seconds for 25/36 times of rated power
- Excellent surge performance

### CST Series

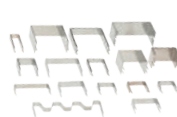
SMD EBW current sensor



- AEC-Q200 qualified
- Heavy copper connections
- High current capability
- Suitable for PCB/IMS substrate
- Low inductance

### LPS Series

Low ohmic power resistors, current sensor



- Min. resistance 5mR
- AEC-Q200 qualified
- Very low inductance
- Open frame design
- Solderable terminals

### MMF Series

Metal film resistors, MELF



- Miniaturization
- MELF type
- AEC-Q200 qualified
- Ultra low TCR (15ppm) & narrow tolerance (0.1%)
- Best in class pulse load capability
- Excellent stability in different environmental conditions

## Wireless

### Sub-GHz/Short-range Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Lora, Sigfox supported
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Bluetooth, Wifi connectivity
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

PCB antenna



- Easy installation
- Flexible cable length and connector type
- Operating temperature:  $-40^\circ\text{C}$  to  $85^\circ\text{C}$
- RoHS compliant & halogen free

### WWAN Antenna

Chip antenna

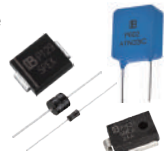


- SMD type antenna
- Compact size, small clearance
- 900/1800Mhz or Quad band
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

## Circuit Protection

### TVS Series

Transient Voltage Suppressors



- Safety certification by UL
- Low dynamic internal resistance, excellent clamping capability
- Fast response speed
- High voltage tolerance

### ESD Series

Electrostatic Discharge Protection Devices



- Low capacitance (under 1pF)
- High design flexibility, provide customized design for different capacitance, configuration, pulse load capability...etc.
- Low clamping voltage

### GDT Series

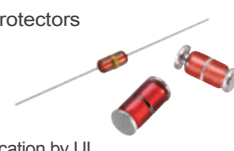
Gas Discharge Tubes



- Low junction capacitance
- Safety certification by UL/ VDE
- Insulation resistance:  $> 1\text{G}\Omega$ , low degradation speed, high reliability
- DC spark-over voltage: 75V ~ 6000V; Impulse spark-over voltage: 600 ~ 7800V

### SPG Series

SPark Gap Protectors



- Safety certification by UL
- Low junction capacitance
- Insulation resistance:  $> 100\text{M}\Omega$ , low aging speed, high reliability
- Non-polarized
- DC spark-over voltage: 140V ~ 5000V





Inductors



Resistors



Capacitors



Wireless



Circuit Protection

# YAGEO



# POWER

# & ENERGY

As people are more conscious about environmental conservation, and sustainability becomes an ethical norm, in a global growing trend, the demand for clean, renewable energy is on the rise.

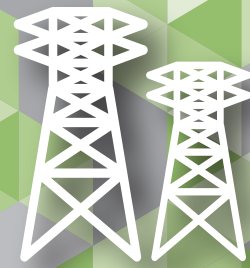
The fundamental challenge, especially for electricity supply, is applying them to meet demand given their variable and diffuse nature. To achieve this goal, technologies need to be employed which efficiently supply power to the consumers at a competitive price. The renewable resources like wind, solar and nuclear are the main contenders.

Yageo keeps pace with the growing demand, our highly reliable components can be applied in smart meters to be accurately and consistently ticking away the energy usage in homes, business and schools.

[www.yageo.com](http://www.yageo.com)



# Power & Energy



## Chip Resistors

### RT Series

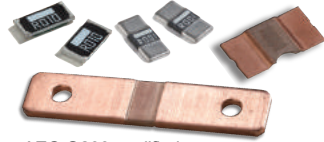
Thin film high precision high stability (0201 to 2512)



- AEC-Q200 qualified
- Low current noise
- Tight TCR (down to  $\pm 5\text{ppm}/^\circ\text{C}$ )
- Narrow tolerance (down to  $\pm 0.01\%$ )

### PE/PA/PU Series

Metal current sensors (0201 to 2512, 3921, 5931, 8518)



- AEC-Q200 qualified
- Humidity resistance & anti-FOS
- Highest rated power 36 W (600A)
- Jumper available

### RV Series

High voltage (0603 to 2512)



- AEC-Q200 qualified
- High maximum working voltage
- IEC62368-1 certified

### SR Series

High power surge resistance (0402 to 2512)



- AEC-Q200 qualified
- High rated power available
- Excellent anti-surge and pulse proof capability

## MLCC

### CC-HCV Series

High CV



- High capacitance and high voltage
- Higher energy density
- High reliability with no polarity
- RoHS compliant & halogen free

### CS Series

Soft Termination



- Flexible termination system
- Improved resistance to thermal stresses
- Increased mechanical performance
- RoHS compliant & halogen free

### CC-HV Series

High voltage



- Operates at high voltage
- Wide case size available
- High reliability with no polarity
- RoHS compliant & halogen free

### CA Series

4-C Array



- Board space saving
- Time saving during mounting process
- Reduction in number of solder joints
- Easier PCB design

## Through Hole Resistors

### HHV Series

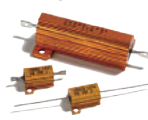
Metal glazed film resistors, high-voltage & high ohmic



- UL1676 and VDE 0860 certified
- High working voltage up to 7KV
- Max. over load voltage up to 14KV
- Max. resistance up to 68Mohm
- Flameproof silicone-coated

### AHP Series

Power wirewound resistors, aluminum housed, straight leadwire style



- Wirewound (max. resistance up to 33Kohm)
- Corrosion-resistant aluminum case
- Excellent surge performance

### ATC Series

Wirewound resistors, high power, aluminum housed, compact size



- Compact size
- Power up to 200W
- Corrosion-resistant aluminum case
- Excellent surge performance

### OTP Series

Over temperature protection fusible resistors



- UL certified
- Over temperature protection under overcurrent conditions
- Semi- short circuit quick fusing
- Wide resistance range
- Excellent antisurge and pulse load withstanding capability

## Wireless

### Sub-GHz/Short-range Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Lora, Sigfox supported
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Bluetooth, Wifi connectivity
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WLAN/BT/ISM Antenna

PCB antenna



- Easy installation
- Flexible cable length and connector type
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### X2Y

X2Y

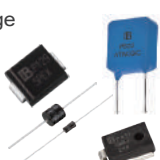


- Excellent performance in EMI suppression or decoupling
- Ultra-low equivalent series inductance (ESL)
- Provides differential & common mode filtering with single devices
- RoHS compliant & halogen free

## Circuit Protection

### TVS Series

Transient Voltage Suppressors



- Safety certification by UL
- Low dynamic internal resistance, excellent clamping capability
- Fast response speed
- High voltage tolerance

### MOV Series

Metal Oxide Varistors



- Fast response speed
- Safety certification by UL/ TUV/ VDE/ CSA/ CQC
- Good surge energy absorption capability
- $V_{BR}$  (Breakdown voltage) is by-directional and symmetric

### GDT Series

Gas Discharge Tubes



- Low junction capacitance
- Safety certification by UL/ VDE
- Insulation resistance:  $> 1\text{G}\Omega$ , low degradation speed, high reliability
- DC spark-over voltage: 75V ~ 6000V; Impulse spark-over voltage: 600 ~ 7800V

### PPTC Series

Polymeric Positive Temperature Coefficient Thermistor



- Resettable
- Safety certification by UL/ TUV
- Low response speed (few dozen ms to few seconds level), it is proportional to the current value
- PPTC has very low resistance under normal working status, no impact on the working circuit.



Inductors



Resistors



Capacitors



Wireless



Circuit Protection

# YAGEO



# TELECOMMUNICATIONS

Telecommunications is the collection of technologies, devices, facilities, networks, and applications that support communication at a distance. The range of telecommunications applications is broad and includes telephony and video conferencing, e-mail, broadcast and interactive television, instant messaging, a host of Internet-based communication, and data transmission.

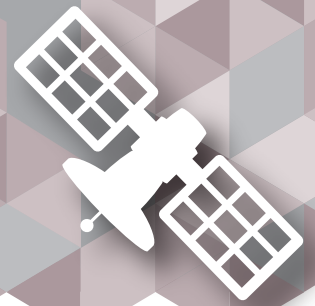
The fifth generation of wireless technology, the successor to 4G LTE, has been touted as a path to faster Internet connections. It promises lightning-fast speed, low latency, and the capacity to carry massive numbers of connections simultaneously. Not surprisingly, the forthcoming arrival of 5G is creating a buzz in both the industry and the wider world.

Emerging technologies and digital transformation initiatives open up the opportunities to Yageo to develop robust products and introduce innovative services.

[www.yageo.com](http://www.yageo.com)



# Telecommunications



## Chip Resistors

### AA Series

Sulfur resistance (0201 to 2512)



- AEC-Q200 qualified
- Humidity resistance
- Anti-FOS ( $\pm 4\%$  ASTM,  $105^\circ\text{C}/750\text{hrs}$ )

### PA/PE Series

Metal current sensors (01005 to 2512)



- AEC-Q200 qualified
- Humidity resistance & anti-FOS
- Highest rated power 3W
- Jumper available
- Wide terminal available in PE0508, 0612, 0815

### RT/AT Series

Thin film high precision high stability (0201 to 2512)



- AEC-Q200 qualified
- Low current noise
- Tight TCR (down to  $\pm 5\text{ppm}/^\circ\text{C}$ )
- Narrow tolerance (down to  $\pm 0.01\%$ )

### SR Series

High power surge resistance (0402 to 2512)



- AEC-Q200 qualified
- High rated power available
- Excellent anti-surge and pulse proof capability

## MLCC

### CC-HC Series

High capacitance



- Very low ESR and ESL
- Low self heating
- High reliability with no polarity
- RoHS compliant & halogen free

### CQ Series

High frequency



- HiQ and low ESR in VHF, UHF and microwave frequency bands
- BME process with copper inner electrodes
- Tight tolerance (min.  $\pm 0.05\text{pF}$ )
- High reliability with no polarity

### CL Series

Low inductance



- Low ESL capacitor
- For high frequency decoupling applications

### CC-HV Series

High voltage



- Operates at high voltage
- Wide case size available
- High reliability with no polarity
- RoHS compliant & halogen free

## Through Hole Resistors

### FKN Series

Wirewound resistors, fusible, flameproof



- UL1412 certified
- Fusing time  $< 60$  seconds for 25/36 times of rated power
- Excellent surge performance

### FAE Series

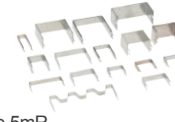
Wirewound resistors, fusible & anti-explosion



- UL1412 certified
- Safety, anti-explosion
- Fusible function, overload cut off
- Excellent surge performance

### LPS Series

Low ohmic power resistors, current sensor



- Min. resistance 5mR
- AEC-Q200 qualified
- Very low inductance
- Open frame design
- Solderable terminals

### RWI Series

Anti-pulse power wirewound resistor



- 3W compact size
- Suitable for automatic pick and place
- All welded connection
- Epoxy molded encapsulation
- Supreme inrush current capability
- Pulse capability customization available

## Wireless

### WLAN/BT/ISM Antenna

Chip antenna



- SMD type antenna
- Compact size, small clearance
- Bluetooth, Wifi connectivity
- Operating temperature:  $-40^\circ\text{C}$  to  $105^\circ\text{C}$
- RoHS compliant & halogen free

### WWAN Antenna

PCB antenna



- Easy installation
- Flexible cable length and connector type
- Operating temperature:  $-40^\circ\text{C}$  to  $85^\circ\text{C}$
- RoHS compliant & halogen free

### GPS Active Antenna

GPS Internal and external antenna



- Easy installation
- Flexible cable length and connector type
- High gain and high attenuation
- RoHS compliant & halogen free

### External Antenna

External Antenna

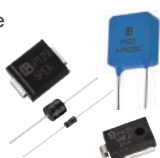


- High gain, low profile
- Support 2.4/5 GHz WiFi, Pentabands, LTE bands
- Outline tooling available, with SMA or cable/ipex

## Circuit Protection

### TVS Series

Transient Voltage Suppressors



- Safety certification by UL
- Low dynamic internal resistance, excellent clamping voltage
- Fast response speed
- High voltage tolerance

### TSS Series

Thyristor Surge Suppressors



- Safety certification by UL
- Low junction capacitance
- Fast response speed
- Low leak current, only mA to 100uA level

### GDT Series

Gas Discharge Tubes



- Low junction capacitance
- Safety certification by UL/ VDE
- Insulation resistance:  $> 1\text{G}\Omega$ , low degradation speed, high reliability
- DC spark-over voltage:  $75\text{V} \sim 6000\text{V}$ ; Impulse spark-over voltage:  $600 \sim 7800\text{V}$

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