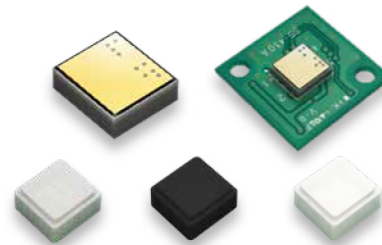


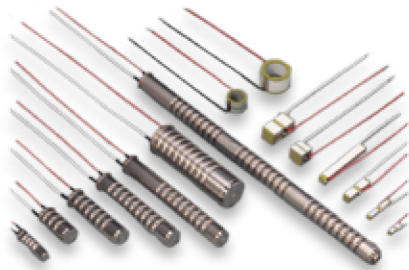
S&A of MSA



Current sensor



Human sensor



Actuator



Vibration sensor

- **High sensitivity, fluxgate-based current sensor**
- **High performance multilayer piezoelectric actuators**
- **Ultra compact and low profile pyroelectric infrared sensors (5.0 x 4.8 x 1.7 mm)**
- **High sensitivity, built-in amplifier vibration sensor**



Automotive



Power



Industrial

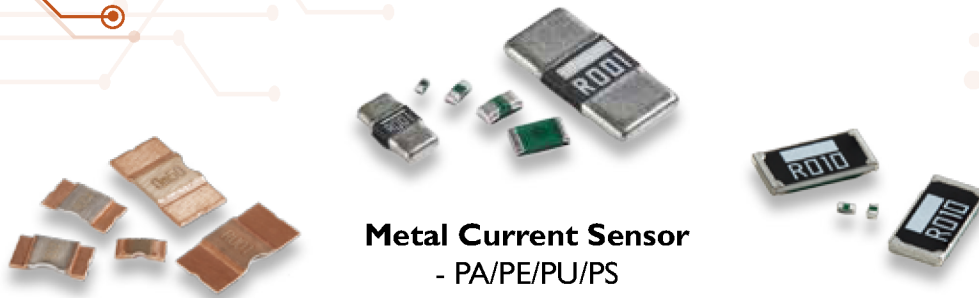


IOT



Consumer
Electronics

Chip Resistors



Metal Current Sensor
- PA/PE/PU/PS



Thin Film Precision Resistor
- RP/AT/RT/VT/NT

Thick Film High Reliability
- AC/AF/SR/RV/AH
- RC Small Size (01005/0075/0050)

- **World's 1st with 30%+ of global capacity**
- **1st to launch metal current sensor 01005**
- **Obtains UL 2799A, the Highest Platinum Rating for Zero Waste to Landfill**
- **Sulfur Resistant & High Stability**
- **Sustainability Product, Lead Free Option**
- **AEC-Q200 qualified (For Automotive Grade)**



Automotive



Industrial



Alternative
Energy



Consumer
Electronics

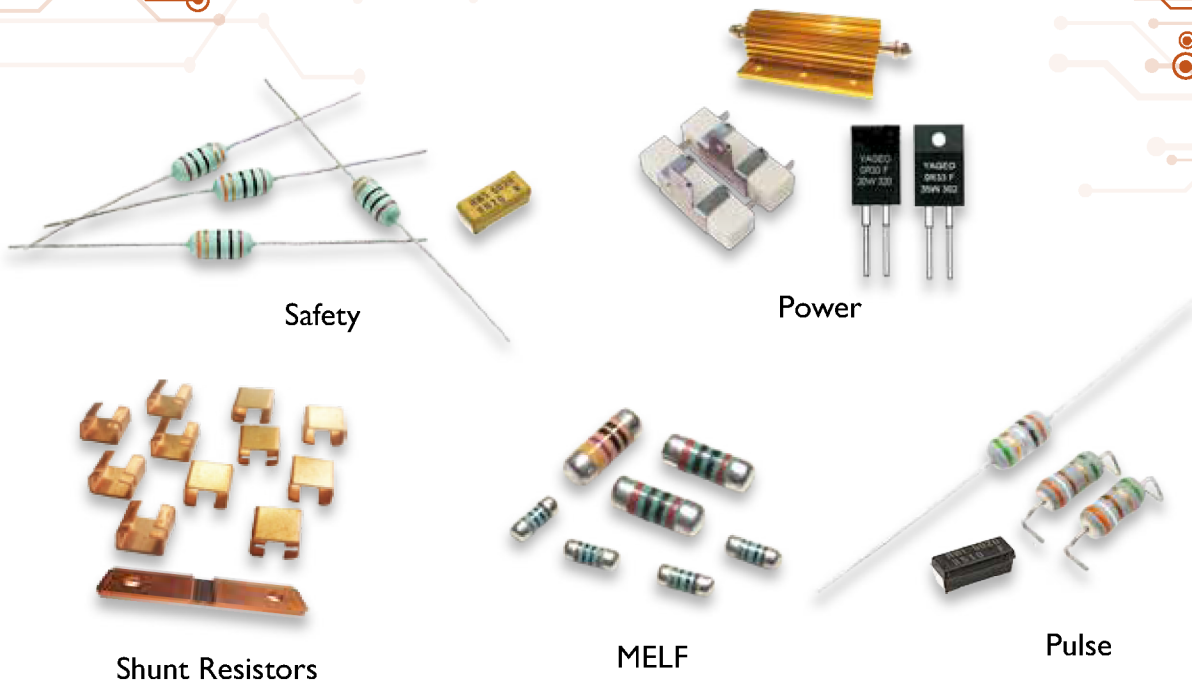
Circuit Protection Components



- Our wide product portfolio fulfills most customer needs, making us a top choice for your primary sourcing.
- Market leading at overcurrent and overvoltage protection feature.
- Fully vertically integrated semiconductor manufacturing process.



Through Hole Resistors



- **One of the major market providers**
- **3 factories in Asia and Europe**
- **90 years of manufacturing experience in Through-hole resistors**
- **AEC-Q200 qualified (For Automotive Grade)**
- **IATF16949 certified**
- **UL, VDE certified**



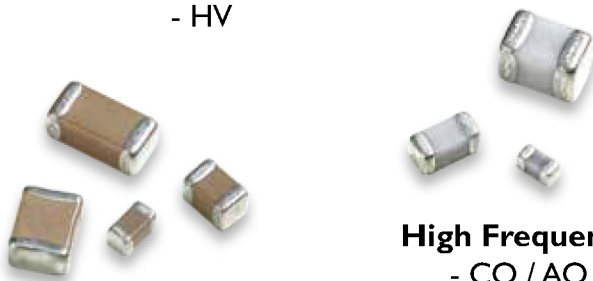
MLCC Multilayer Ceramic Capacitors



High Voltage
- HV



Soft Termination
- CS / AS



High Frequency
- CQ / AQ



Automotive Grade
- AC

- **High Capacitance & High Voltage**
- HCV X7R
- **High Capacitance**
- HC

- **Various case sizes from 01005 to 2220 (inch)**
- **High capacitances for Class I and Class II**
- **Complete high frequency product range up to 150°C**
- **AEC-Q200 qualified for Automotive Grade**
- **Rated voltage up to 3KV**



Automotive



Industrial



Communication

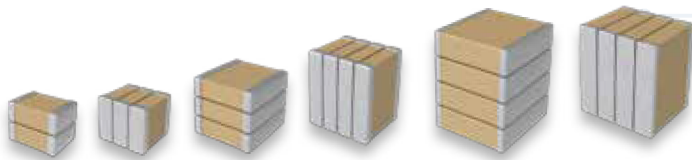


Consumer
Electronics

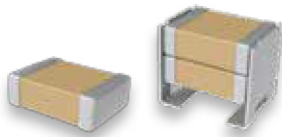
Ceramic Capacitors



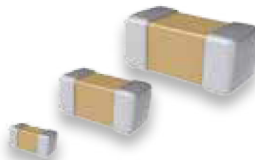
KC-LINK™
For Fast Switching
Semiconductors



KONNEKT™
High-Efficiency and High-Density
Power Applications



Flex Mitigation
Flex Term, VW80808, Open
Mode, Floating Electrode, KPS



HiQ-CBR RF
Automotive Grade



Safety Certified and AC Rated
SMD and Leaded

- **Class I dielectrics C0G(NP0) and U2J**
- **High Voltage MLCC's rated ≥ 500 volts**
- **Commitment to large case size MLCC's from 0805 – 3640 (EIA)**



Automotive



High Voltage

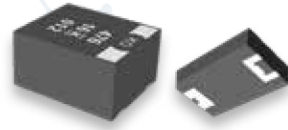


High
Reliability

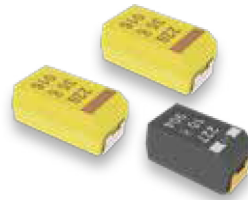


Power

Polymer / Tantalum / SuperCapacitors



High Energy Low profile
Polymer Tantalum



MnO2 Tantalum Capacitor



Auto Grade Polymer Tantalum



SuperCapacitors



Commercial Grade Polymer

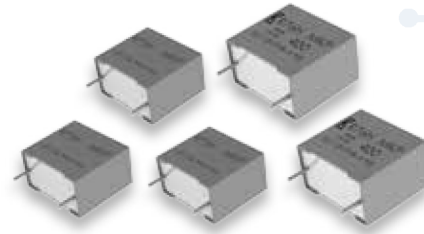
- **Wide portfolio**
- **Leading Edge Technology**
- **Auto Grade 1st to market**
- **Customizing solution**
- **Fully covered market segments (Consumer to Space)**
- **Localized service and support**
- **Enaged with Top players in each segment**



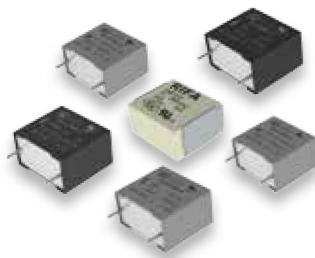
Film Capacitors



AC Filter



Pulse



EMI Suppression

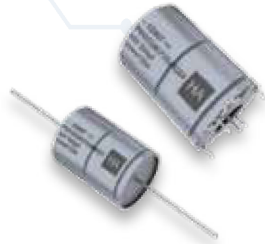


DC Link

- **Self Healing Capability**
- **Miniaturization**
- **World 1st 135°C polypropylene film capacitor**
- **Withstanding Harsh Environmental Conditions**
- **Low ESL for high frequency**
- **High reliability with extended life**
- **AEC-Q200 compliant**



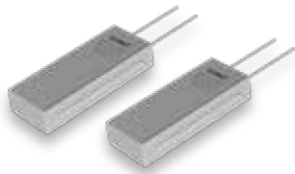
Aluminum Electrolytic Capacitors



Hybrid Axial capacitor



Axial SMD electrolytic capacitor



Rectangular electrolytic capacitor



Snap In capacitor



Hybrid & Solid capacitor

- **Hybrid design, extremely high ripple current and low thermal resistance performance**
- **The first Axial & Radial Crown SMD on the market**
- **Friendly to base cooling design, flexible ways of installation**
- **Anti-vibration design, 20g**
- **Shortest LT with competitive price**



Automotive



Industrial



Alternative Energy

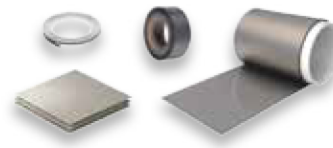


Power

Magnet of MSA



EMI Core / WPT Ferrite Tiles



Absorber (FLEX-SUPPRESSOR)



SMD Power Inductor



EMI Filter



Choke Coil

- **Original unique magnetic materials**
- **First class Automotive grade safety, reliability**
- **Ultra-high frequency effect Absorber (upto SHF band)**
- **High rated voltage Choke Coil (up to 1,000V AC/DC)**
- **50G vibration resistance Power Inductor**
- **Ultra compact and high-performance EMI Filter**



Automotive



Industrial



Alternative
Energy



Medical



IOT



Consumer
Electronics

Standard Power



RF Signal Inductor



Wirewound Power Inductor



EMI filter



Molded Power Inductor

- **No Physical air gap and zero core gap loss (Molded)**
- **High and Soft Saturation Current, High Power Density**
- **High insulation resistance, High breakdown voltage**
- **Higher Operating Temp and no Thermal Aging**
- **Cut off freq up to 6GHz (EMI filter)**
- **High impedance@Low freq - High freq (EMI filter)**



Automotive
EV/HV & ADAS



Industrial



Consumer
Electronics



Data
Center



Telecom



Portable
device

Specialized Power



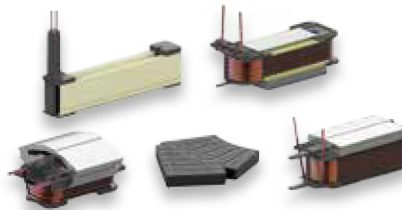
PFC - choke 3 phase



current transformer



CCT - combined current transformer



Motor coil



Rogowski coil



LLC transformer 3 phase



Flexible Rogowski coil



Solenoid

- PFC choke and LLC transformer for on board chargers up to 22kW
- CT, CCT and Rogowski coils for various measuring and billing applications such as smart grid and smart metering
- Motor coils for Hybrid cars, electric supercharger, linear motors for industrial and medical applications
- Solenoids for various automotive and industrial applications



Automotive



Industrial



Power

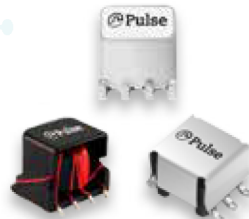


Medical

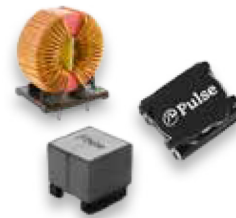
Specialized Power



Power Inductors



Isolation Transformers



Common Chokes



Custom Power Magnetics



Power transformers



Current Sense Magnetics

- **Specialized and Custom Power Magnetics**
- **High Power Density and variable Mechanical Mounting**
- **Power bead inductors with High performance for Vcore power application**
- **IATF Catalogue products**



Automotive



Industrial



IOT



Communication



Computing

Wired Communications



Discrete Communications
Magnetics LAN



Automotive Communication
Magnetics (BMS & IVN)



Integrated Connector
Modules (ICMs)



Connectors & Cages



Discrete Communications
Magnetics WAN

- **Research, design and manufacture magnetic products and connectors used in through-wire communication systems to filter, transmit and isolate communication signals**
- **World's #1 in LAN Discrete Magnetic products**
- **Technology and Market leader in Integrated Connector Module Magnetic products (ICMs)**
- **Technology and Market leader in Automotive Magnetic products**



Automotive



Industrial



IOT



Communication



Computing

Wireless Components



3D Antennas
LDS/LAP/FluidANT



Embedded Antennas
Ceramic/Helical/
FPC/Stamped



Vehicular
Antennas



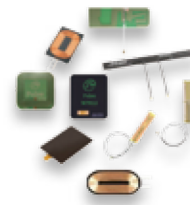
External/ In-Building
Antennas



LTCC based BPF, LPF, Balun,
Diplexer, Triplexer, Balanced
BPF, and Coupler



Outdoor
Antennas



Internal Antennas
FPC/PCB/NFC/
WPC/LCP Antennas



Cable & Mounting
Solutions

- **Wide range of antenna options including flexible printed circuit board (FPC), PCB, direct mount, magnetic mount**
- **Frequency Bands from 13.56MHz to 8500MHz**
- **WiFi, Bluetooth, BLE, UWB, Zigbee, MiMo, GNSS, LEO, LTE, 5G FRI**
- **IoT, SmartGrid, Meters, Remote Monitoring, Sensor Networks**
- **Customized solutions**



Automotive
EV/HV & ADAS

IoT

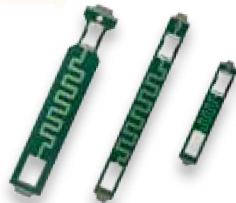
Industrial

Telecom

Communication

Pt RTD Sensors

YAGEO
NEXENSOS



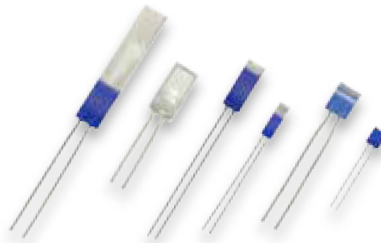
PCB



Sensor assemblies



SMD
(solderable/ sinterable)



Sensor Elements with Wires



Ceramic housed &
SOT housed sensor

- **Pt Temperature sensor pioneer since 1906, Decades of experience and expert knowledge**
- **Global leader for platinum thin film technology**
- **High long term stability**
- **Interchangeability**
- **Broad temperature operating range**
- **Fast response time**
- **Automotive qualified products available**
- **Sensors engineered to custom applications**

