



48V APPLICATIONS



One of the biggest current trends in car design is the shift to hybrid and fully electric vehicles. This trend requires a fundamental change in the architecture of vehicles' electrical systems, with the introduction of 48V DC systems to work in combination with the 12V DC systems used for a long time in standard combustion vehicles. The 48V systems have impacted the new market components release.

Key Products

- KEMET T598 Series - Organic Capacitor (KO-CAP®) - Polymer 75V Rated Voltage
- YAGEO AF Series - Automotive Grade Sulfur Resistant Chip Resistor
- YAGEO PA Series - Metal Current Sensor, Low TCR Chip Resistor
- YAGEO AT Series - Automotive Grade Thin Film Chip Resistor
- YAGEO TVS (Transient voltage suppressors)
- YAGEO AC Series - Automotive Grade MLCC



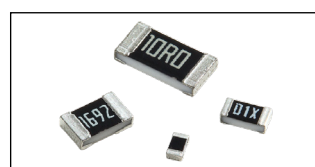
T598 Series



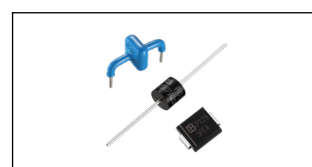
AF Series



PA Series



AT Series



TVS



AC Series



48V APPLICATIONS

YAGEO
Group

KEMET T598 Series - Organic Capacitor (KO-CAP®) - Polymer 75V Rated Voltage

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Key Features

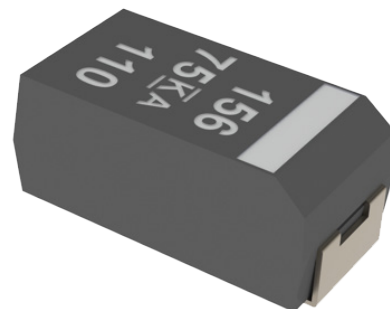
- AEC-Q200 Qualification
- Extended Qualification Testing at 125°C up to 2000h
- 1st to market NPI with 75V rated capability

Key Applications

- Input DC/DC converters in 48V system
- LED/ lighting systems

Key Benefits

- Extended Life Time under typical applications
- High Volumetric Efficiency
- No piezo effect or Capacitance Loss with bias
- Reliable Transient Capability





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YAGEO AF Series - Automotive Grade Sulfur Resistant Chip Resistor

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Key Features

- Superior resistance against sulfur-containing environment
- AEC-Q200 qualified
- Anti-FOS: ASTM-B-809-95, 105°C, 750 hours
- Operating temperature: -55°C to + 155°C

Key Applications

- Industrial equipment
- Power
- Networking
- Automotive electronics
- High-end computer & multimedia electronics in high sulfur environment

Key Benefits

- Case size: 0201 - 2512
- Power rating: 1/20 W - 1 W
- Tolerance: ±0.5%, ±1%, ±5%
- TCR: ±100, ±200, ±350 ppm/°C
- Resistance: 1 Ω to 22 MΩ





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YAGEO PA Series - Metal Current Sensor, Low TCR Chip Resistor

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Key Features

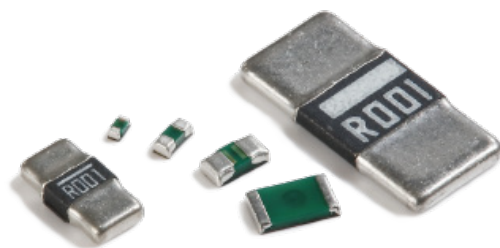
- AEC-Q200 qualified
- Excellent current sensing performance
- Low power consumption
- Low thermal EMF ($\leq 0.3 \mu\text{V}/^\circ\text{C}$)
- Operation temperature from -55°C to $+170^\circ\text{C}$

Key Benefits

- Case size: 0201 to 2512
- High power rating: 1 W - 3 W
- Low TCR: as low as $\pm 50 \text{ ppm}/^\circ\text{C}$
- Resistance: 0.5 m Ω to 100 m Ω

Key Applications

- Consumer goods
- Computer
- Telecom / Datacom
- Industrial / Power Supply
- Automotive





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YAGEO AT Series - Automotive Grade Thin Film Chip Resistor

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Key Features

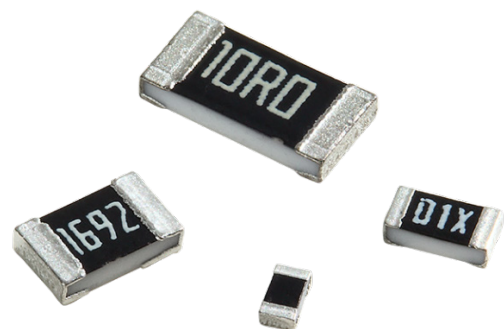
- AEC-Q200 qualified, Production Part Approval Process (PPAP) available
- Superior resistance against sulfur-containing environments (according to ASTM B809-95)
- High precision and stability
- Low TCR, low electrical noise

Key Applications

- Automotive electronics
- Industrial and medical equipment
- Test and measuring equipment
- Telecommunication
- Power system

Key Benefits

- Temperature Cycling: $\pm 0.1\%$
- Anti-FOS: $\pm 4\%$ (105°C, 750 hours)
- Life/Endurance: $\pm 0.1\%$ (70°C), $\pm 0.3\%$ (125°C)
- Biased Humidity (85°C/85% RH): $\pm 0.1\%$





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YAGEO TVS (Transient voltage suppressors)

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Key Features

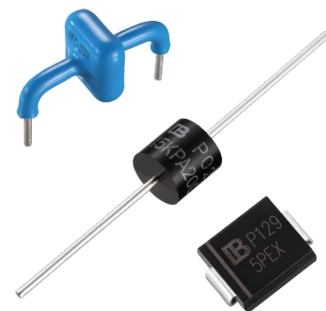
- Fast response speed
- Low dynamic resistance and excellent clamping capability
- High reliability
- Full series automotive grade

Key Applications

- DC Power supply, Automotive, Telecom

Key Benefits

- Material: Silicon-based
- Production process: semiconductor process
- Response speed: ps level
- Voltage accuracy: $\pm 5\%$
- Voltage range: 5V~600V
- Surge capacity: \leq several hundred amperes (10/1000 μ s)





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YAGEO AC Series - Automotive Grade MLCC

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Key Features

- AEC-Q200 qualified and PPAP ready
- IATF 16949 certified
- Board flex ≥ 2 mm
- 100% AOI
- High reliability

Key Benefits

- TC: X7R, NPO and X8R (-55°C~150°C)
- Capacitance range: 0.47 pF - 10 μ F
- $\pm 5\%$ / $\pm 10\%$ tolerance
- Case size: 0201 ~ 1812
- Voltage range: 6.3 V - 1 kV

Key Applications

- All general-purpose applications
- Entertainment
- Comfort and security
- Information

