

Version:
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(TCPWCH)
Common Mode Choke
Coils for Automotive

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▶ Product Introduction

Token (TCPWCH-4532AU) complete portfolio of common mode chokes for automotive bus systems.

Features :

- For Automotive wire wound common mode choke coil Effective for EMI suppression of common mode noise emission.
- Compatible with Automotive required operating temperature -40°C to $+125^{\circ}\text{C}$.
- Compatible with RoHS Directive and AEC-Q200.

Applications :

- Preventive measure against high speed signal radiation emission such as CAN-Bus.
- Modem, Fax, ISDNs... etc.

SMD common mode choke coils (TCPWCH-4532AU) series is primarily designed for automotive networking applications, such as automotive ethernet, FlexRay, and CAN-Bus. Of course, ethernet is already the firmly established networking protocol for computers, peripherals, communication devices, and multimedia.

The attenuation of the noise is higher, the performance of the common-mode choke is better. Token taking advantage of the latest winding technology, (TCPWCH-4532AU) consists ferrite core and a pair lines enabling the most effective in noise suppression designs. Feature high common-mode impedance at noise band and low differential-mode impedance at signal band. Low differential-mode impedance with high coupling factor, there is almost no distortion on high speed signal.

This automotive common mode chokes construction provides for a more lean and cost saving approach then comparable larger, heavier, wire-wound toroidal inductors. Wide inductance selection, and low-resistance coils can be customized designs and tighter tolerances are available on request.

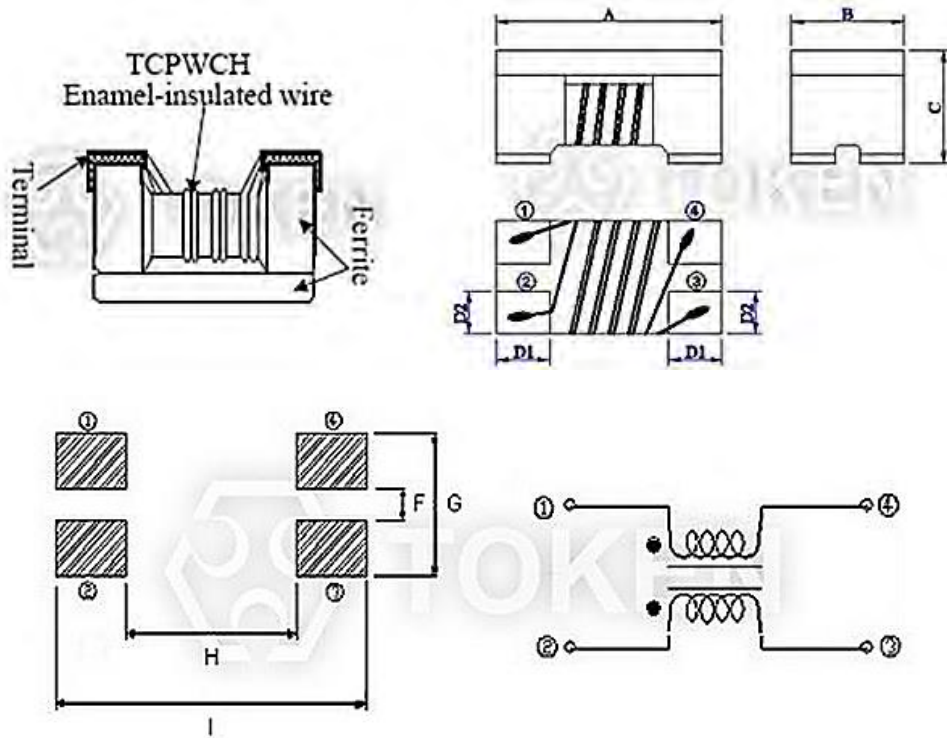
(TCPWCH-4532AU) conforms to the RoHS compliant and Lead-free. Token will also produce devices outside these specifications to meet customer requirements, with comprehensive design application engineering support for customers worldwide. Please contact our sales or link to Token official website "[SMD Balun Transformers](http://www.token.com.tw)" for more information.



► Config. & Dim.

Configurations & Dimensions (TCPWCH-4532AU) UNIT: mm (inch)

| CODE | A | B | C | D1 TYP | D2 TYP | F TYP | G TYP | H TYP | I TYP |
|-----------------------|---------------------------|--------------------------|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| TCPWCH-4532 (1812) | 4.50±0.2 (0.177±0.008) | 3.2±0.2 (0.126±0.008) | 2.8±0.2 (0.110±0.008) | 1.00 (0.039) | 1.00 (0.039) | 0.40 (0.016) | 3.60 (0.141) | 2.10 (0.082) | 4.90 (0.192) |

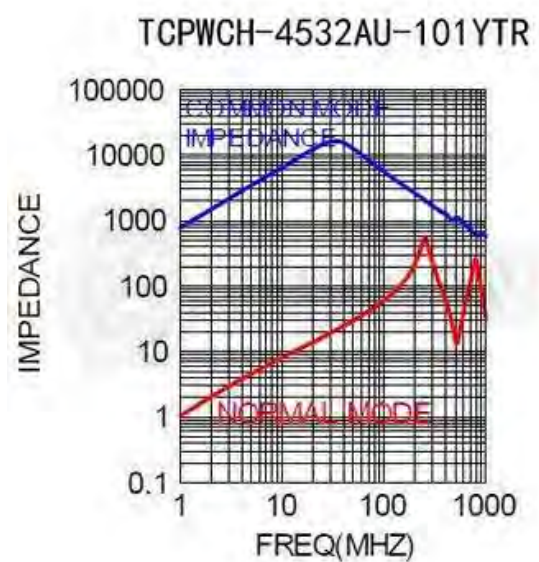
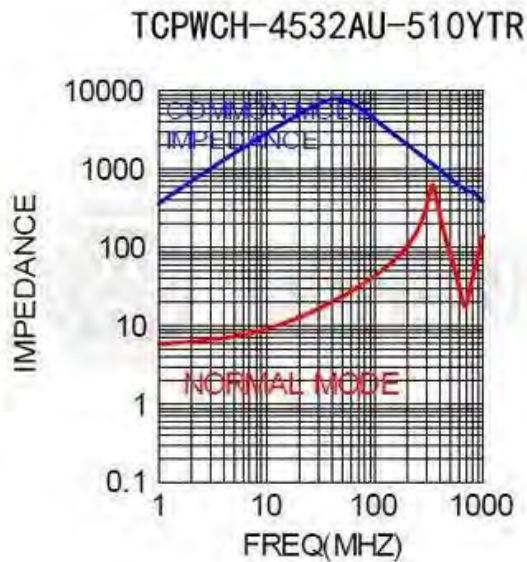
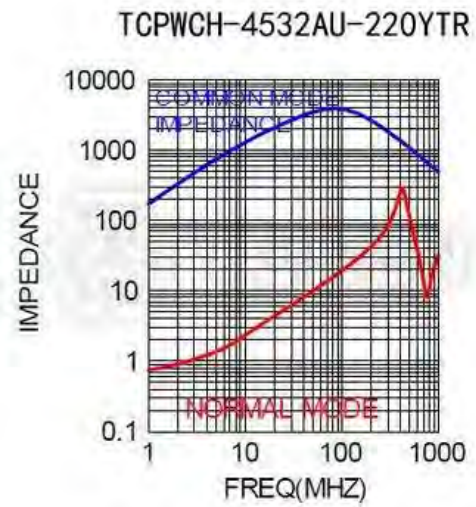
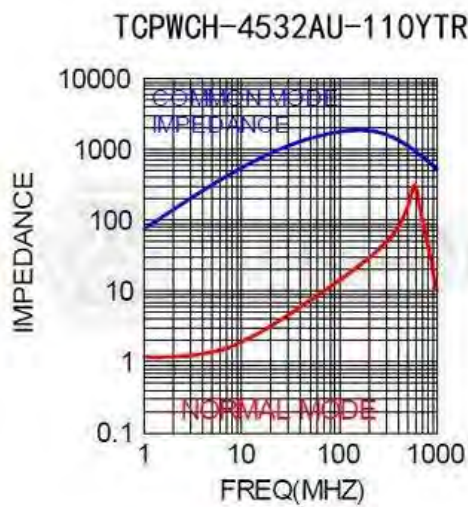


Common Mode Choke Coils for Automotive (TCPWCH-4532AU) Structure diagram UNIT: mm (inch)

► 4532AU Specifications

Electrical Characteristics (TCPWCH-4532AU)

| Part Number | Inductance (μH) 100KHz/100mV | Impedance (Ω) @ 10MHz | DC Resistance (Ω) Max. | Rated Current (mA) Max. | Rated Voltage (V) DC | Insulation Resistance (MΩ) Min. |
|----------------------|---------------------------------|--------------------------|------------------------|-------------------------|----------------------|---------------------------------|
| TCPWCH-4532AU-110YTR | 11(+50/30%) | 600 | 0.6 | 250 | 50 | 10 |
| TCPWCH-4532AU-220YTR | 22(+50/30%) | 1200 | 1.0 | 200 | 50 | 10 |
| TCPWCH-4532AU-510YTR | 51(+50/30%) | 2800 | 1.0 | 200 | 50 | 10 |
| TCPWCH-4532AU-101YTR | 100(+50/30%) | 5800 | 2.0 | 150 | 50 | 10 |



▶ **Order Codes**

Order Codes (TCPWC)

| | | | | | | | | | | | | | |
|-------------|----------------|-----------|------------|-------------|---------|---------|------------|-----------------|---------------|----|----------|----|-------------|
| TCPWC | H | - | 4532 | | | AU | - | 110 | Y | TR | | | |
| Part Number | Shielding Type | | Dimensions | | | Purpose | | Inductance (μH) | Tolerance (%) | | Package | | |
| TCPWCH | H | Shielding | 4532 | 4.5×3.2×2.8 | EIA1812 | AU | Automotive | 110 | 11 | Y | +50/-30% | P | Bulk |
| | | | | | | | | 220 | 22 | | | TR | Taping Reel |
| | | | | | | | | 510 | 51 | | | | |
| | | | | | | | | 101 | 100 | | | | |

▶ **General Information**

Applications of Baluns

In a **RF balun transformer**, one pair of terminals is balanced, that is, the currents are equal in magnitude and opposite in phase. The other pair of terminals is unbalanced; one side is connected to electrical ground and the other carries the signal. Balun transformers can be used between various parts of a wireless or cable communications system. Some common applications denotes as following:

- Television receiver (Balanced) - coaxial cable network or Coaxial antenna system (Unbalanced)
- FM broadcast receiver (Balanced) - Coaxial antenna system (Unbalanced)
- Dipole antenna (Balanced) - Coaxial transmission line (Unbalanced)
- Parallel-wire transmission line (Balanced) - Coaxial transmitter output, or Coaxial receiver input (Unbalanced)

Token's baluns provide impedance transformation in addition to conversion between balanced and unbalanced signal modes. Most television and FM broadcast receivers are designed for 300-ohm balanced systems, while coaxial cables have characteristic impedances of 50 or 75 ohms. Impedance-transformer baluns with larger ratios are available and used to match high-impedance balanced antennas to low-impedance unbalanced wireless receivers, transmitters, or transceivers.