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(TCPWCS) Low Profile Common Mode Chokes

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Product Introduction

Use of Token (TCPWCS) SMD common mode chokes in point-to-point high speed data links.

Applications :

- Preventive measure against high speed signal radiation emissions such as USB 2.0, IEEE1394 or LAN interface.
- Best for NB, DSC, mobile device design.

Features :

- Special very Low profile and small size design.
- Wound chip construction with standard 0805 or 0603 size, with best EMI suppression effect at higher frequency 500MHz~up.
- And least impact to signal wave form.

Token (TCPWCS) series common mode chokes offer just 1.6 x 0.8 mm (0603) and 2.0 x 1.2 mm (0805), with a maximum height of 0.8mm and 0.9 mm, making them the lowest-profile common mode chokes available.

They provide high differential mode cutoff frequency and common mode noise attenuation across a wide frequency range, suiting them as ideal for noise suppression in super-high-speed signal lines such as USB 3.x, HDMI 2.0, DisplayPort and DVI. The chokes are also suited for high-speed differential signal lines such as USB, IEEE1394, and LVDS, and are compatible with USB Type-C specification.

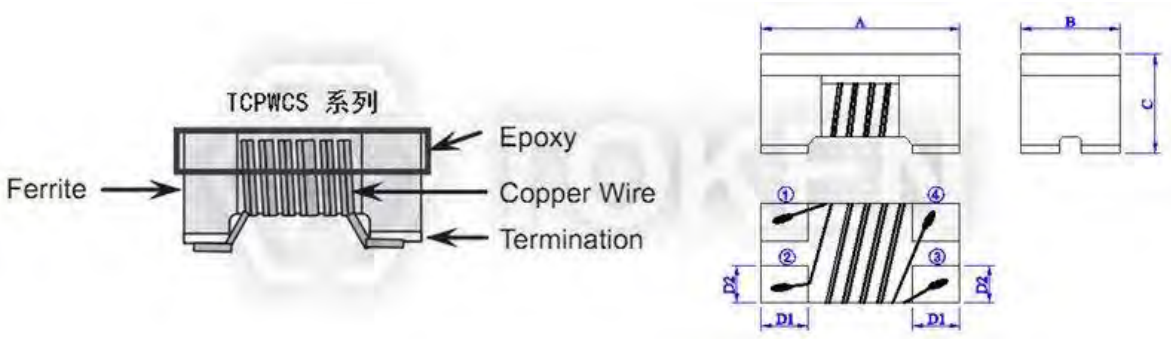
The (TCPWCS) series comes with very low DCR (0.25 to 0.80 Ohms) and current ratings up to 500 mA. Wide range impedance values are available to meet specific design requirements. All (TCPWCS) common mode chokes are halogen free and feature RoHS-compliant.

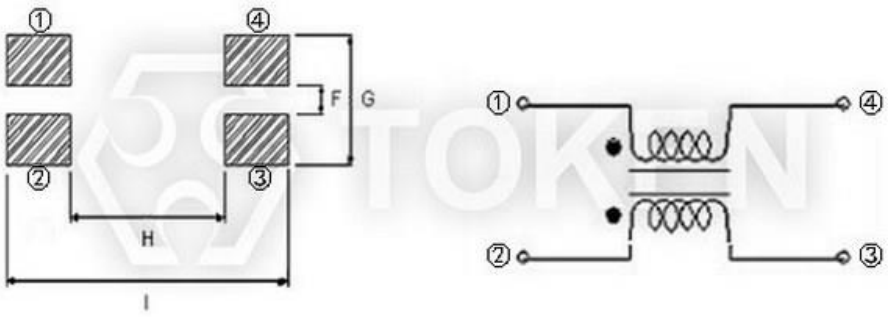
Token offers a wide variety of options to meet your needs. From common mode constructions that meet highest self-resonant frequencies to constructions for low profile and minimum board space coverage, Token are able to customize your request. Please contact our sales or link to Token official website "SMD Balun Transformers" for more information.

Config. & Dim.

Configurations & Dimensions (TCPWCS) Unit: mm (Inch)

SIZE CODE	A	B	C	D1 TYP	D2 TYP	F TYP	G TYP	H TYP	I TYP
TCPWCS-160808 (0603)	1.60±0.20 (0.063±0.008)	0.80±0.30 (0.031±0.012)	0.80±0.20 (0.031±0.008)	0.30 (0.012)	0.30 (0.012)	0.30 (0.012)	1.00 (0.039)	0.70 (0.028)	2.10 (0.083)
TCPWCS-201209 (0805)	2.00±0.20 (0.079±0.008)	1.20±0.30 (0.047±0.012)	0.90±0.20 (0.035±0.008)	0.45 (0.018)	0.40 (0.016)	0.40 (0.016)	1.20 (0.047)	0.80 (0.031)	2.60 (0.102)





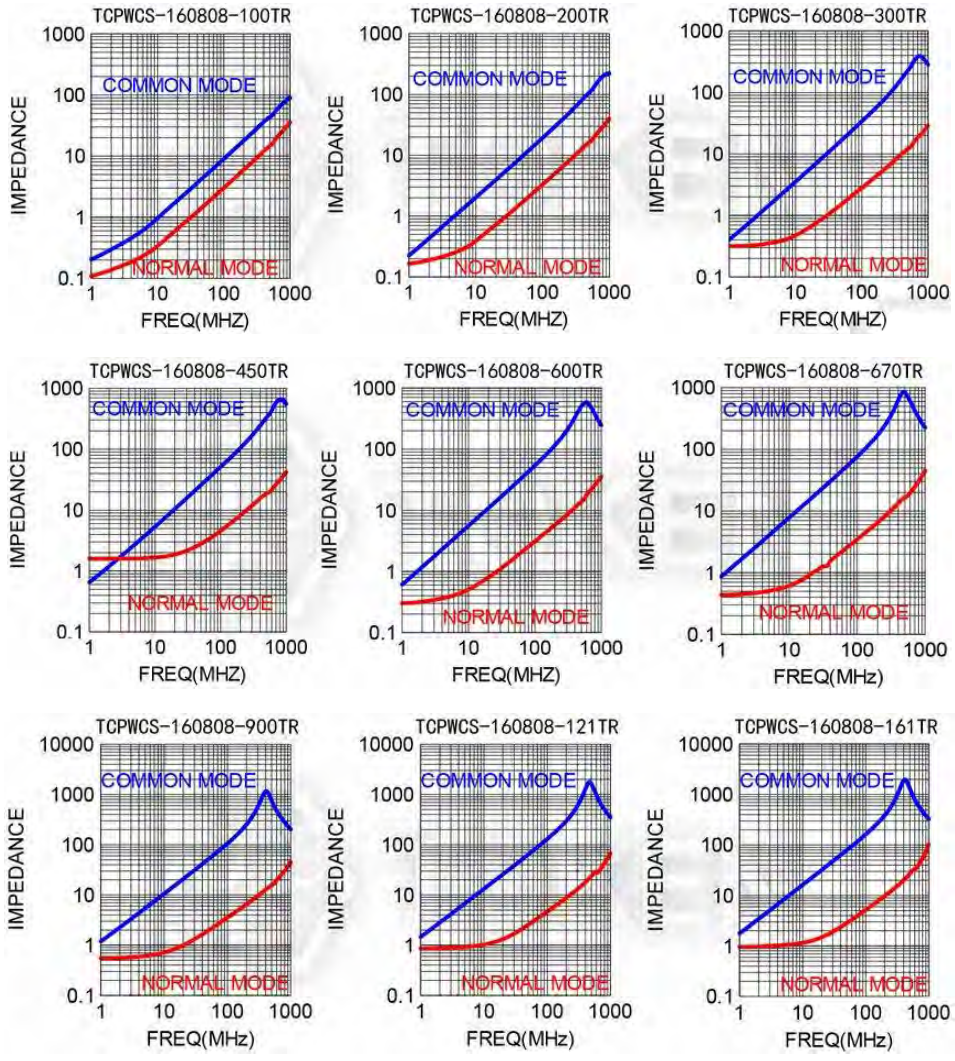
Common mode filter (TCPWCS) Configurations diagram

TCPWCS-160808

Electrical Characteristics (TCPWCS-160808)

Part Number	Impedance (Ω) 100MHz	Tolerance ±%	Test Frequency (MHz) Max.	DC Resistance (Ω) Max.	Rated Current (mA) Max.
TCPWCS-160808-100TR	10	25%	100	0.30	500
TCPWCS-160808-200TR	20	25%	100	0.40	400
TCPWCS-160808-300TR	30	25%	100	0.45	350
TCPWCS-160808-450TR	45	25%	100	0.50	300
TCPWCS-160808-600TR	60	25%	100	0.50	300
TCPWCS-160808-670TR	67	25%	100	0.50	300
TCPWCS-160808-900TR	90	25%	100	0.55	250
TCPWCS-160808-121TR	120	25%	100	0.80	200
TCPWCS-160808-161TR	160	25%	100	0.80	200

Impedance VS Frequency Graph (TCPWCS-160808)

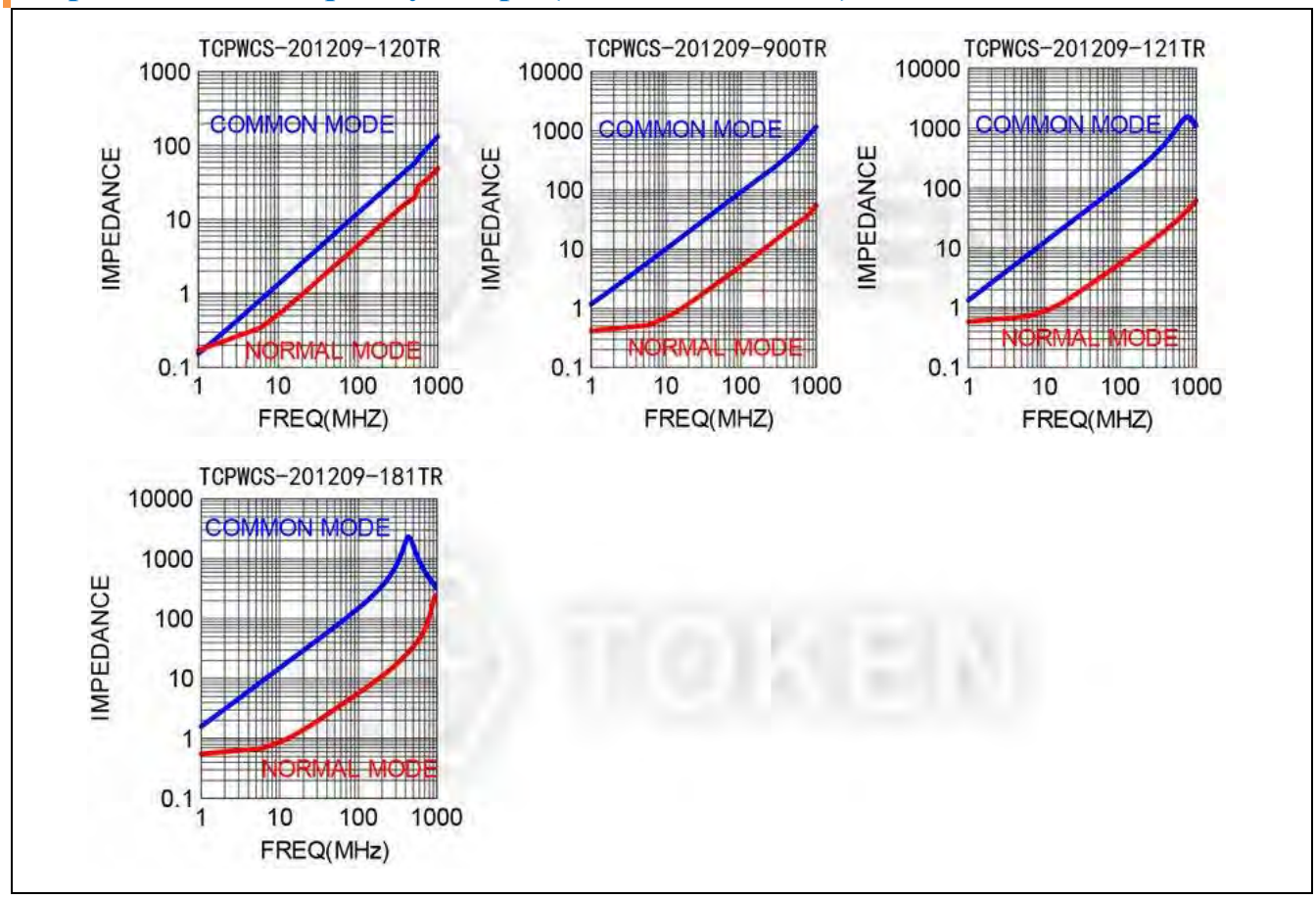


TCPWCS-201209

Electrical Characteristics (TCPWCS-201209)

Part Number	Impedance (Ω) 100MHz	Tolerance ±%	Test Frequency (MHz) Max.	DC Resistance (Ω) Max.	Rated Current (mA) Max.
TCPWCS-201209-120TR	12	25%	100	0.25	500
TCPWCS-201209-900TR	90	25%	100	0.35	400
TCPWCS-201209-121TR	120	25%	100	0.40	500
TCPWCS-201209-181TR	180	25%	100	0.50	250

Impedance VS Frequency Graph (TCPWCS-201209)



Order Codes

Order Codes (TCPWCS)

TCPWC	S	-	160808	900	TR

Part Number	Epoxy	
TCPWC	S	Epoxy

Dimensions		
160808	1.60×0.80×0.80	EIA 0603
201209	2.00×1.20×0.90	EIA 0805

Impedance (Ω)	
100	10Ω
450	45Ω
900	90Ω
121	120Ω
181	180Ω

Package	
P	Bulk
TR	Taping Reel

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.