

# EMI Line Filters

## EMI Line Filters for filtering common mode power line noise (TCUU)

### ► Preview

In recent times there has been a growing need for energy storage inductors for noise filtering in both mains line filters and DC chokes used in switched-mode power supplies. In mains line filter applications the filtering falls into two categories: common-mode noise and differential-mode noise.

The line filter arrangement consists of two sections bobbin between the mains supply and the equipment. Note that the common-mode filter is wound on a single core and the differential mode filter consists of two individual wound cores. The common-mode noise is in relation to ground and is common to both lines. Differential mode noise is the noise between the two lines. Both types of noise are usually present to varying degrees.

Token line filters TC UU series common mode choke coils are used in a wide range of prevention of radio frequency interference (RFI) and electromagnetic interference (EMI) from power supply lines and for prevention of malfunctioning of products such as measuring equipment and system equipment. Features wide range of selection, high impedance at applicable frequency, and high self-resonant frequency.

The TC UU series is designed to reduce stray capacity between windings by using a single-layer coil and two sections bobbin construction on high permeability ferrite core, which offer excellent high frequency characteristics. This series provides excellent noise suppression for high frequency ranges including the FM band. This filter can also be used as a signal line with excellent withstanding voltage, since the windings are divided into two sections.

Token is equipped to design and produce custom components to meet many design and reliability demands. Custom parts are available on request. Token will also produce devices outside these specifications to meet specific customer requirements, please contact our sales for more information.

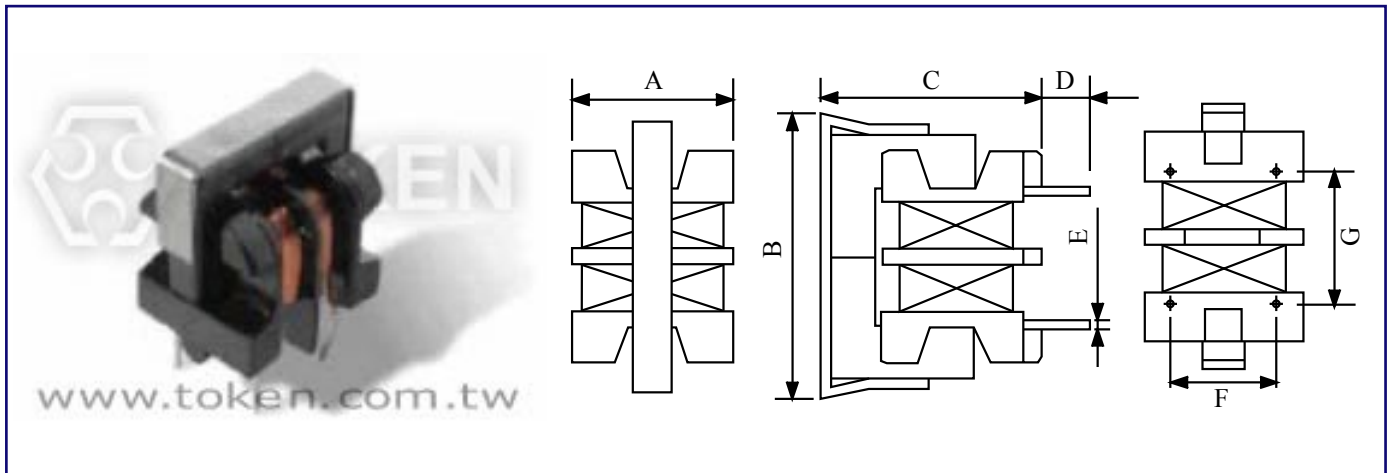
### Features :

- Easily inserted into PCB.
- Small size and inexpensive type.
- Highly reliable, compact & lightweight.
- Magnetic shielded construction available.
- Characteristics in Low Frequency Band.
- AC common mode choke coil which has excellent attenuation.

### Applications :

- Multi-Function Telephones.
- Common Mode Chokes for Effective AC line Noise Prevention.
- AC Adapters, Faxes Small Size Fluorescent Lights, VCRS, Color TVS.

## ▶ Magnetic Shielded Construction (TCUU98V) Configurations & Dimensions



Type	A (max)	B (max)	C (max)	D	E	F	G
TCUU98V	11.0	16.5	16.5	3.5	Φ0.6	7.0	8.0

**Note:** Design as Customer's Requested Specifications.

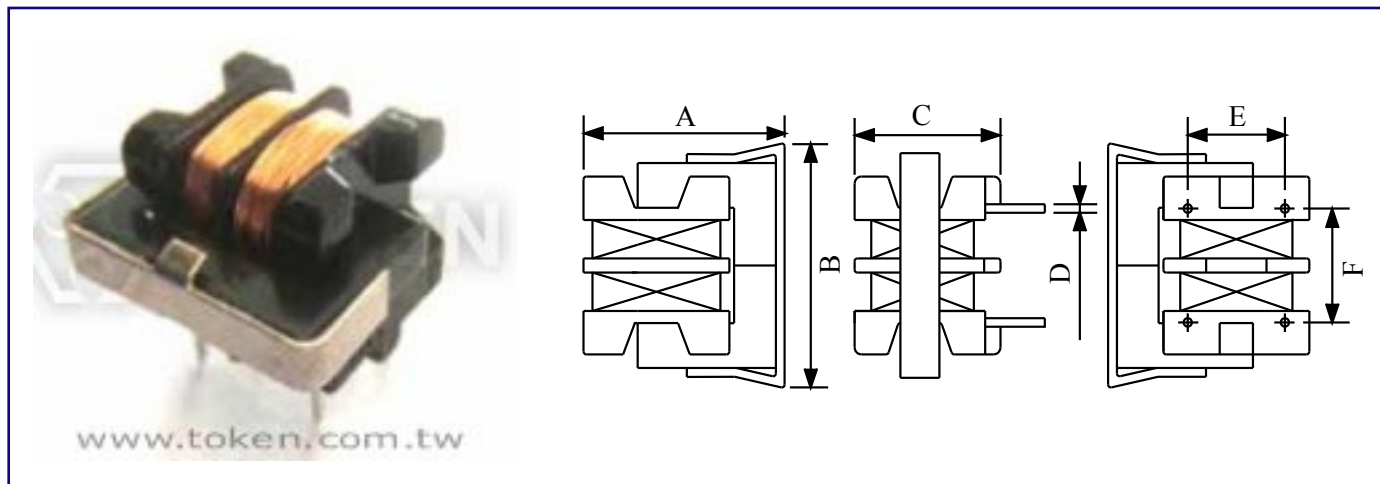
## ▶ Common Mode Chokes (TCUU98V) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCUU98H-471	0.47	25	0.15	1.00
TCUU98H-681	0.68	25	0.25	0.85
TCUU98H-102	1.0	50	0.35	0.70
TCUU98H-222	2.2	50	0.7	0.50
TCUU98H-392	3.9	100	1.20	0.38
TCUU98H-472	4.7	100	1.60	0.34
TCUU98H-682	6.8	150	2.50	0.25
TCUU98H-103	10.0	200	4.00	0.20

**Note:** Test Freq.: 1.0kHz.

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ (TCUU98H) Configurations & Dimensions



Type	A (max)	B (max)	C (max)	D	E	F
TCUU98H	15.5	16.5	12.5	Φ0.6	7.0	8.0

**Note:** Design as Customer's Requested Specifications.

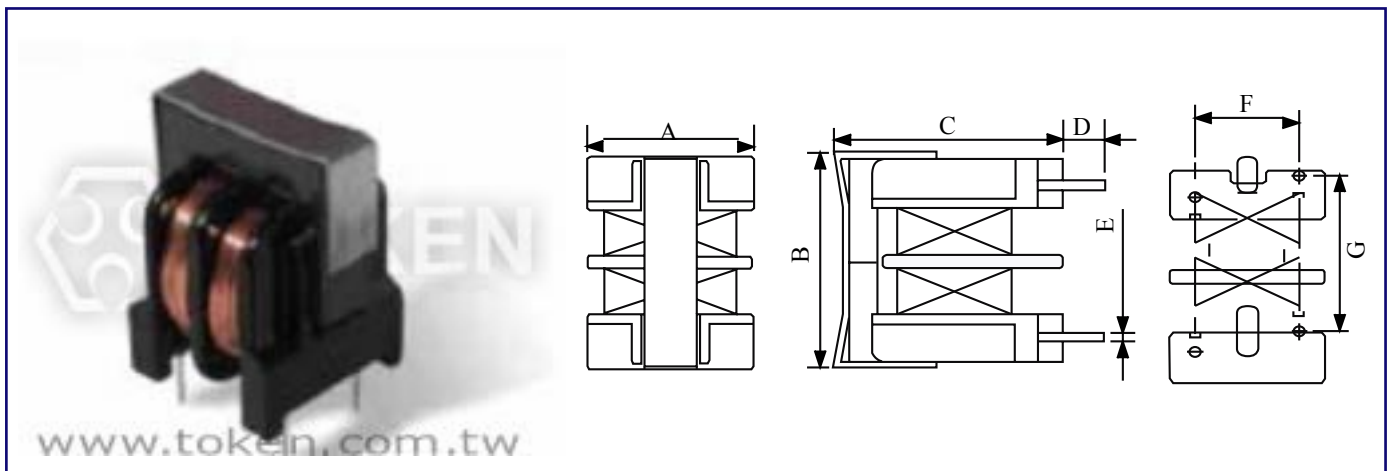
## ▶ Common Mode Chokes (TCUU98H) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCUU98H-471	0.47	25	0.15	1.00
TCUU98H-681	0.68	25	0.25	0.85
TCUU98H-102	1.0	50	0.35	0.70
TCUU98H-222	2.2	50	0.7	0.50
TCUU98H-392	3.9	100	1.20	0.38
TCUU98H-472	4.7	100	1.60	0.34
TCUU98H-682	6.8	150	2.50	0.25
TCUU98H-103	10.0	200	4.00	0.20

Note: Test Freq.: 1.0kHz.

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ (TCUU10) Configurations & Dimensions



Type	A (max)	B (max)	C (max)	D	E	F	G
TCUU10	17.0	18.5	23.0	4.0	Φ0.7	10.0	13.0

**Note:** Design as Customer's Requested Specifications.

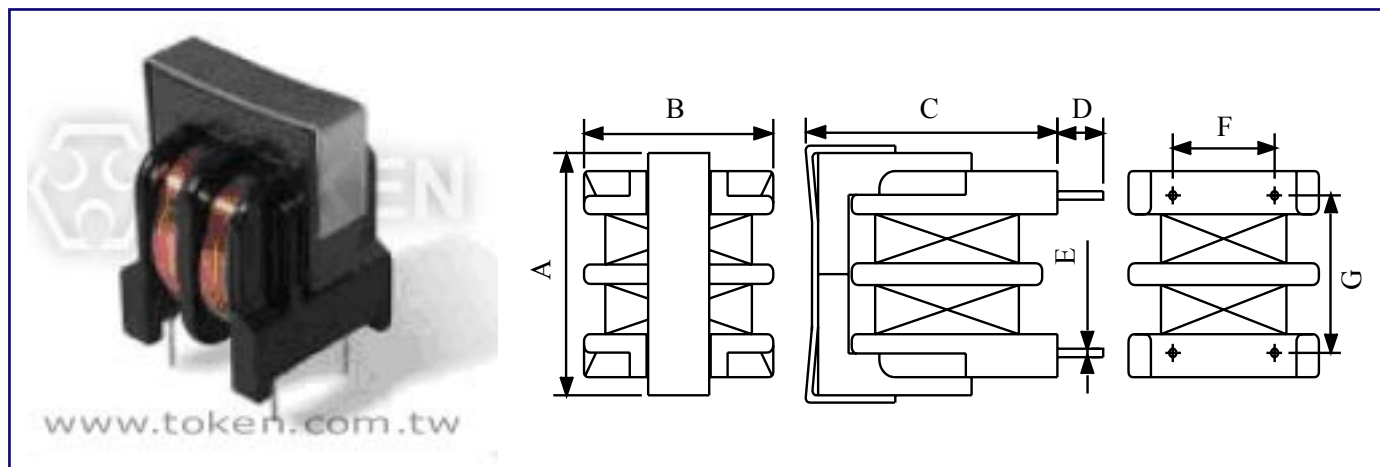
## ▶ Common Mode Chokes (TCUU10) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCUU10-332	3.3	100	0.71	0.65
TCUU10-682	6.8	200	1.26	0.435
TCUU10-123	12.0	360	2.20	0.34
TCUU10-223	22.0	440	3.64	0.25
TCUU10-333	33.0	660	5.74	0.20
TCUU10-513	51.0	1000	9.12	0.15

**Note:** Test Freq.: 1.0kHz.

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ AC Common Mode Choke Coils (TCUU16) Configurations & Dimensions



Type	A (max)	B (max)	C (max)	D	E	F	G
TCUU16	22.0	20.0	28.5	4.5	Φ0.7	10.0	13.0

**Note:** Design as Customer's Requested Specifications.

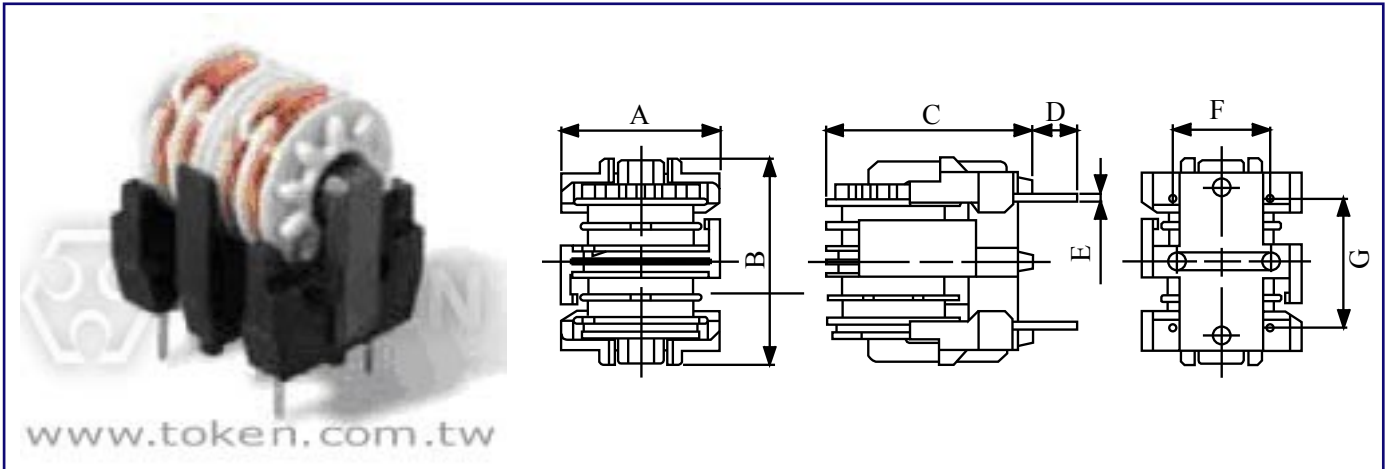
## ▶ Common Mode Chokes (TCUU16) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCUU16-152	1.5	40	0.125	1.90
TCUU16-402	4.0	60	0.27	1.20
TCUU16-802	8.0	80	0.46	0.90
TCUU16-203	20.0	150	1.60	0.50
TCUU16-303	30.0	200	2.50	0.40

**Note:** Test Freq.: 1.0kHz.

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ AC Common Mode Choke Coils (TCUT20) Configurations & Dimensions



Type	A (max)	B (max)	C (max)	D	E	F	G
TCUT20	17.2	22.0	22.5	4.5	Φ0.8	10.0	13.0

**Note:** Design as Customer's Requested Specifications.

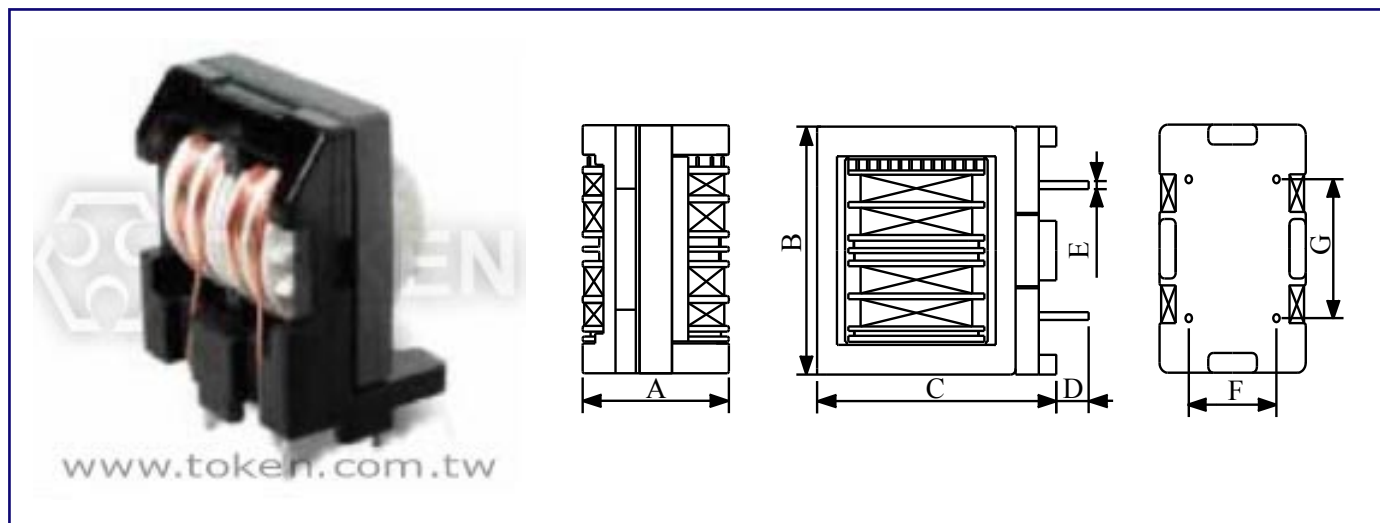
## ▶ Common Mode Chokes (TCUT20) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCUT20-222	2.2	150	0.24	1.30
TCUT20-392	3.9	150	0.41	1.00
TCUT20-103	10.0	550	1.00	0.60
TCUT20-183	18.0	600	1.63	0.50
TCUT20-223	22.0	800	2.04	0.40
TCUT20-333	33.0	800	3.42	0.30

**Note:** Test Freq.: 1.0kHz.

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ Magnetic Shielded Core (TCET24B) Configurations & Dimensions



Type	A (max)	B(max)	C(max)	D	E	F	G
TCET24B	18.5	25.5	31.0	4.0	Φ0.8	10.0	13.0

**Note:** Design as Customer's Requested Specifications.

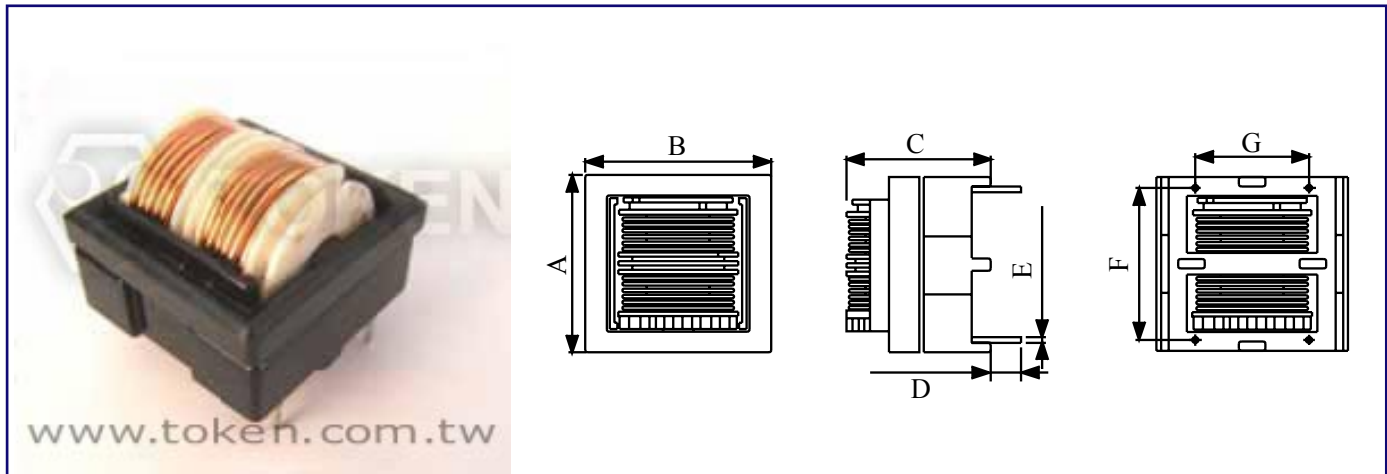
## ▶ Common Mode Chokes (TCET24B) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCET24B-252	2.5	100	0.13	2.00
TCET24B-352	3.5	150	0.18	1.70
TCET24B-452	4.5	200	0.21	1.50
TCET24B-103	10.0	300	0.47	1.00
TCET24B-153	15.0	400	0.73	0.80
TCET24B-203	20.0	600	0.87	0.70
TCET24B-353	35.0	800	1.58	0.60

**Note:** Test Freq.: 1.0kHz.

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ Magnetic Shielded Core (TCET24H) Configurations & Dimensions



Type	A (max)	B(max)	C(max)	D	E	F	G
TCET24H	18.5	25.5	31.0	4.0	Φ0.8	10.0	13.0

**Note:** Design as Customer's Requested Specifications.

## ▶ Common Mode Chokes (TCET24H) at 25°C Electrical Characteristics

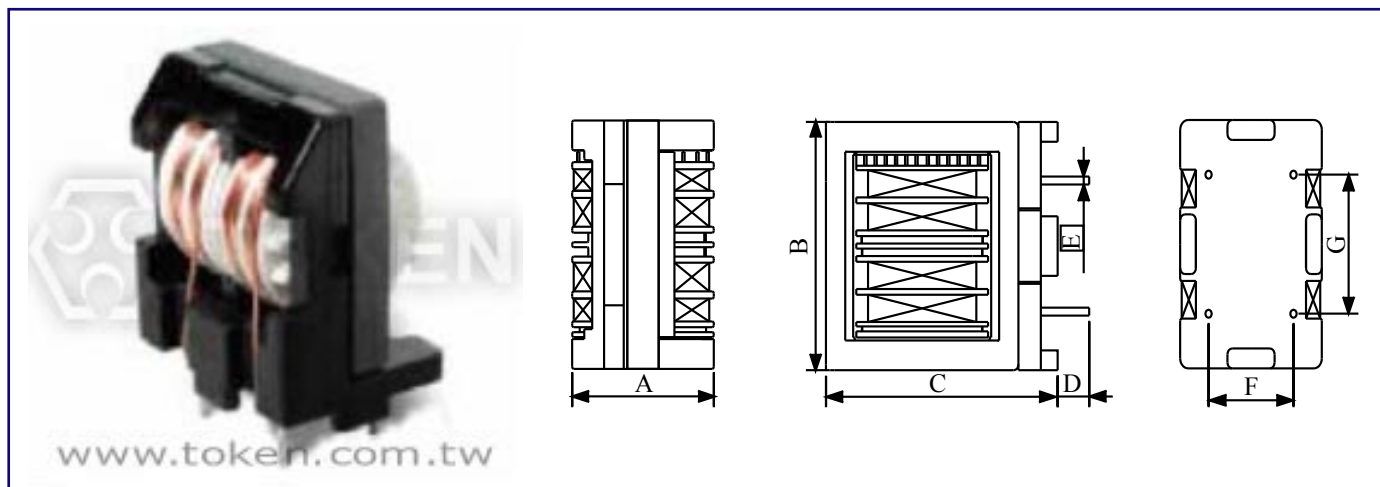
Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCET24H-252	2.5	100	0.13	2.00
TCET24H-352	3.5	150	0.18	1.70
TCET24H-452	4.5	200	0.21	1.50
TCET24H-103	10.0	300	0.47	1.00
TCET24H-153	15.0	400	0.73	0.80
TCET24H-203	20.0	600	0.87	0.70
TCET24H-353	35.0	800	1.58	0.60

**Note:** Test Freq.: 1.0kHz

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )



## Magnetic Shielded Core (TCET28B) Configurations & Dimensions



Type	A (max)	B(max)	C(max)	D	E	F	G
TCET28B	22.0	31.0	35.5	4.0	Φ0.8	10.0	13.0

**Note:** Design as Customer's Requested Specifications.

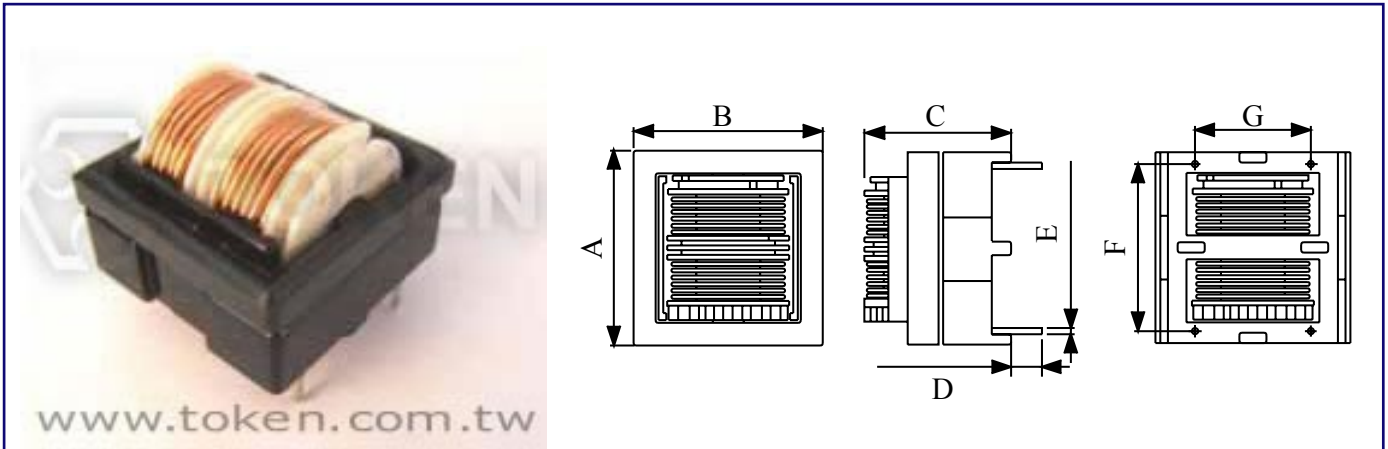
## Common Mode Chokes (TCET28B) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCET28B-182	1.8	100	0.072	2.60
TCET28B-682	6.8	200	0.23	1.60
TCET28B-123	12.0	400	0.38	1.20
TCET28B-223	22.0	500	0.65	1.00
TCET28B-393	39.0	700	1.43	0.70
TCET28B-683	68.0	850	1.82	0.60

**Note:** Test Freq.: 1.0kHz

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ Magnetic Shielded Core (TCET24H) Configurations & Dimensions



Type	A (max)	B(max)	C(max)	D	E	F	G
TCET28H	30.0	30.0	23.5	3.5 ± 0.5	Φ0.8 ± 0.1	24.0 ± 0.5	20.0 ± 0.5

**Note:** Design as Customer's Requested Specifications.

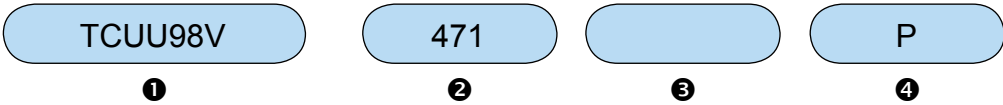
## ▶ Common Mode Chokes (TCET28H) at 25°C Electrical Characteristics

Part Number	Inductance (mH)(min)	Inductance Balance (μH)(max)	DCR (Ω)(max)	IDC (A)(max)
TCET28H-182	1.8	100	0.072	2.60
TCET28H-682	6.8	200	0.23	1.60
TCET28H-123	12.0	400	0.38	1.20
TCET28H-223	22.0	500	0.65	1.00
TCET28H-393	39.0	700	1.43	0.70
TCET28H-683	68.0	850	1.82	0.60

**Note:** Test Freq.: 1.0kHz

Allowable Current : D.C. Current When Temperature of Coil Increased up to 40°C .(Ta=25°C )

## ▶ (TCUU98V, TCUU98H, TCUU10, TCUU16) How to Order



❶ Part Number: TCUU98V Vertical Type,  
TCUU98H Horizontal Type,  
TCUU10,  
TCUU16

❷ Inductance

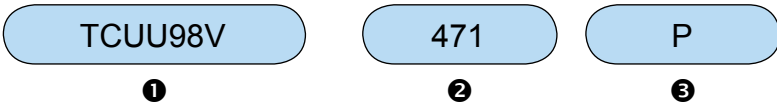
Code	Inductance
471	0.47mH
681	0.68mH
102	1.0mH
222	2.2mH

❸ Winding

Code	Tolerance
None	Standard Winding
D	Sectional Winding

❹ Package : P ( Bulk )

## ▶ (TCUT20, TCET24B, TCET24H, TCET28B, TCET28H) How to Order



❶ Part Number: TCUT20,  
TCET24B,  
TCET24H,  
TCET28B,  
TCET28H

❷ Inductance

Code	Inductance
222	2.2mH
392	3.9mH
103	10.0mH
183	20.0mH

❸ Package : P ( Bulk )