

Common Mode Filters

For ultra high-speed differential signal line
(HDMI, DVI, DisplayPort, USB3.0, etc.)

TCE series

Type:	TCE0806G	[0302 inch]*
	TCE0806S	[0302 inch]
	TCE1210G	[0504 inch]
	TCE1608G	[0603 inch]

* Dimensions Code [EIA]

Issue date: April 2012

- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

Common Mode Filters For Ultra High-speed Differential Signal Line (HDMI, DVI, DisplayPort, USB3.0, etc.)

Conformity to RoHS Directive

TCE Series TCE0806G

FEATURES

- Common mode filter for improving EMC with an ESD protection element (ESD suppressor) using thin-film processing and materials technology acquired from HDD head manufacturing.
- One component can be used for suppressing common mode noise and ESD.
- Greatly reduces the number of components and installation area.
- By providing wide bandwidth (cutoff frequency: 3GHz min.) for differential mode, this product has almost no effect for high-speed differential signals and can suppress the radiated emission.
- This product contains no lead and supports lead-free soldering.

APPLICATIONS

Suppressing noise and ESD for high-speed differential signal interfaces such as USB 2.0 and HDMI for mobile devices such as mobile phones, smartphones, digital cameras, and portable music players, and general consumer products.

PRODUCT IDENTIFICATION

TCE	0806	G	-	900	-	2P	-	T
(1)	(2)	(3)	(4)	(5)	(6)			

- (1) Series name
- (2) Dimensions L×W
- (3) Product identification number
- (4) Impedance[at 100MHz]
900: 90Ω
- (5) Number of line
2P: 2-line
- (6) Packaging style
T: ø180mm reel taping

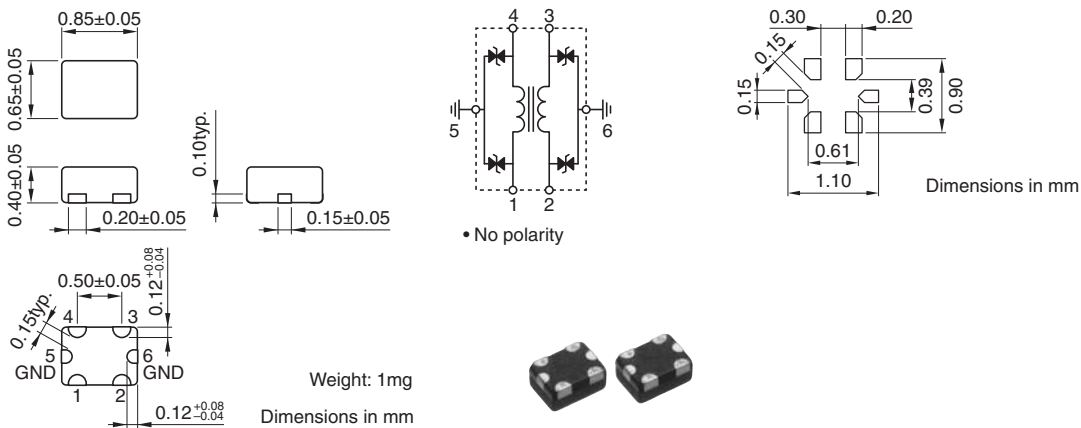
TEMPERATURE RANGES

Operating	-25 to +85°C
Storage(After mount)	-25 to +85°C

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	10,000 pieces/reel

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAMS/RECOMMENDED PC BOARD PATTERNS



• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

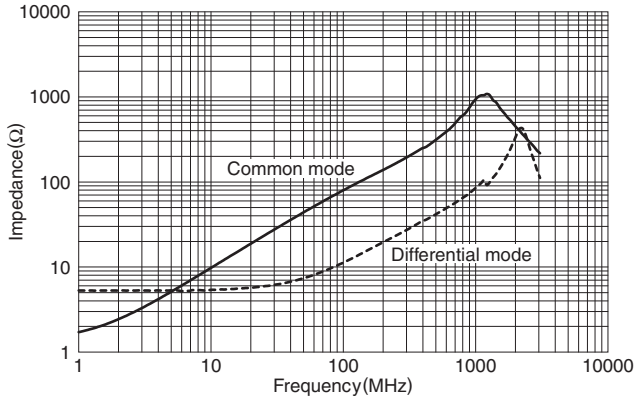
• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Part No.	Common mode impedance (Ω) [100MHz]	DC resistance (Ω)max. [1 line]	Cutoff frequency (GHz)typ.	Clamp voltage (V)max.	Rated current I _{dc} (A)max.	Rated voltage E _{dc} (V)max.	Insulation resistance (M Ω)min.
TCE0806G-900-2P	90 \pm 30	3.5	5.0	100	0.10	10	1

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS



Common Mode Filters For Ultra High-speed Differential Signal Line (HDMI, DVI, DisplayPort, USB3.0, etc.)

Conformity to RoHS Directive

TCE Series TCE0806S

FEATURES

- Common mode filter for improving EMC with an ESD protection element (ESD suppressor) using thin-film processing and materials technology acquired from HDD head manufacturing.
- One component can be used for suppressing common mode noise and ESD.
- Greatly reduces the number of components and installation area.
- By providing wide bandwidth (cutoff frequency: 3GHz min.) for differential mode, this product has almost no effect for high-speed differential signals and can suppress the radiated emission.
- This product contains no lead and supports lead-free soldering.

APPLICATIONS

Suppressing noise and ESD for high-speed differential signal interfaces such as USB3.0, HDMI and Serial ATA for mobile devices such as mobile phones, smartphones, digital cameras, and portable music players, and general consumer products.

PRODUCT IDENTIFICATION

TCE	0806	S	-	120	-	2P	-	T
(1)	(2)	(3)		(4)		(5)		(6)

- (1) Series name
 (2) Dimensions L×W
 (3) Product identification number
 (4) Impedance[at 100MHz]
 120: 12Ω
 (5) Number of line
 2P: 2-line
 (6) Packaging style
 T: ø180mm reel taping

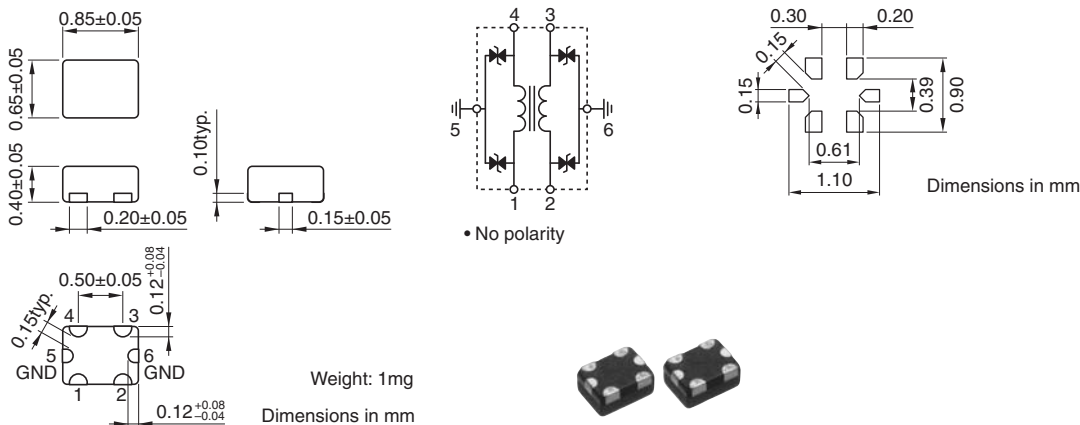
TEMPERATURE RANGES

Operating	-25 to +85°C
Storage(After mount)	-25 to +85°C

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	10,000 pieces/reel

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAMS/RECOMMENDED PC BOARD PATTERNS



- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

- All specifications are subject to change without notice.

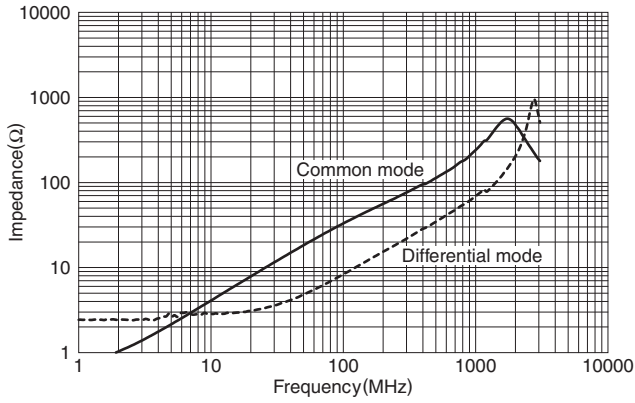
ELECTRICAL CHARACTERISTICS

Part No.	Common mode impedance (Ω) [100MHz]	DC resistance (Ω)max. [1 line]	Cutoff frequency (GHz)typ.	Clamp voltage (V)max.	Rated current I _{dc} (A)max.	Rated voltage E _{dc} (V)max.	Insulation resistance (M Ω)min.
TCE0806S-350-2P	35 \pm 12	1.5	7.0	100	0.10	10	1
TCE0806S-120-2P	12 \pm 7	1.0	8.0	100	0.10	10	1

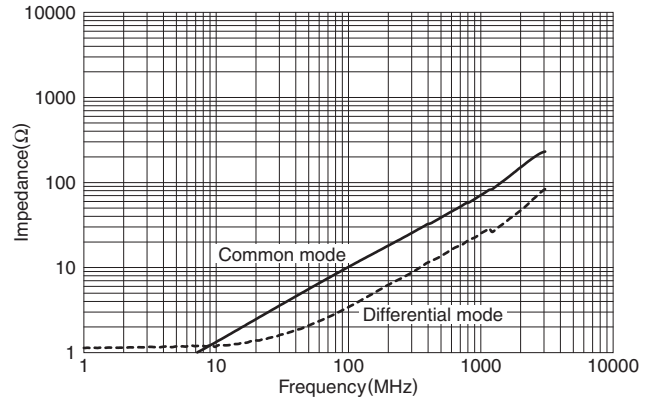
TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

TCE0806S-350-2P-T200



TCE0806S-120-2P-T201



Common Mode Filters For Ultra High-speed Differential Signal Line (HDMI, DVI, DisplayPort, USB3.0, etc.)

Conformity to RoHS Directive

TCE Series TCE1210G

FEATURES

- Common mode filter for improving EMC with an ESD protection element (ESD suppressor) using thin-film processing and materials technology acquired from HDD head manufacturing.
- One component can be used for suppressing common mode noise and ESD.
- Greatly reduces the number of components and installation area.
- By providing wide bandwidth (cutoff frequency: 3GHz min.) for differential mode, this product has almost no effect for high-speed differential signals and can suppress the radiated emission.
- This product contains no lead and supports lead-free soldering.

APPLICATIONS

Suppressing noise and ESD for high-speed differential signal interfaces such as USB 2.0 and HDMI for mobile devices such as mobile phones, smartphones, digital cameras, and portable music players, and general consumer products.

PRODUCT IDENTIFICATION

TCE	1210	G	-	900	-	2P	-	T
(1)	(2)	(3)	(4)	(5)	(6)			

- (1) Series name
 (2) Dimensions L×W
 (3) Product identification number
 (4) Impedance[at 100MHz]
 900: 90Ω
 (5) Number of line
 2P: 2-line
 (6) Packaging style
 T: ø180mm reel taping

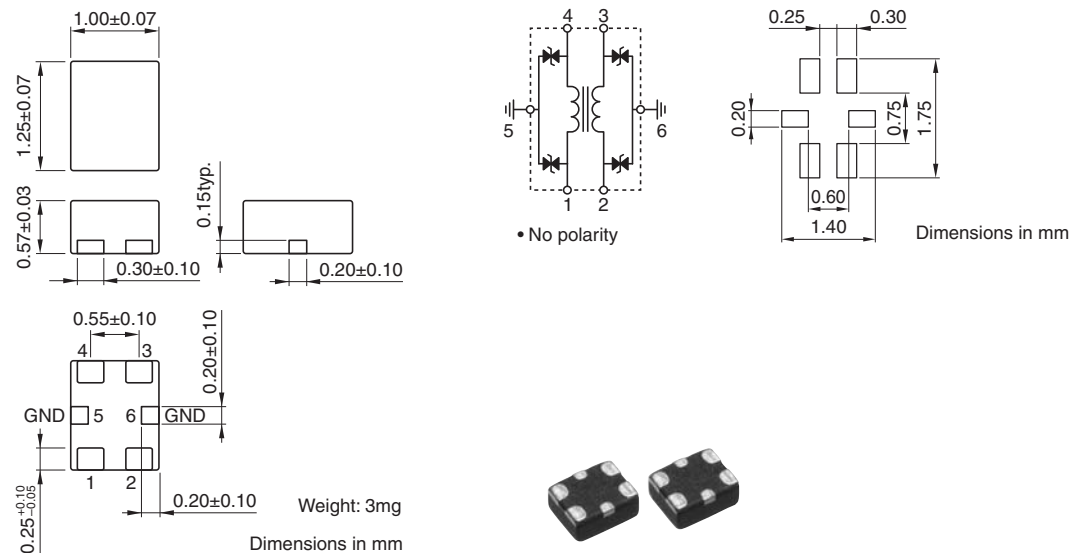
TEMPERATURE RANGES

Operating	-25 to +85°C
Storage(After mount)	-25 to +85°C

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	4000 pieces/reel

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAMS/RECOMMENDED PC BOARD PATTERNS



• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

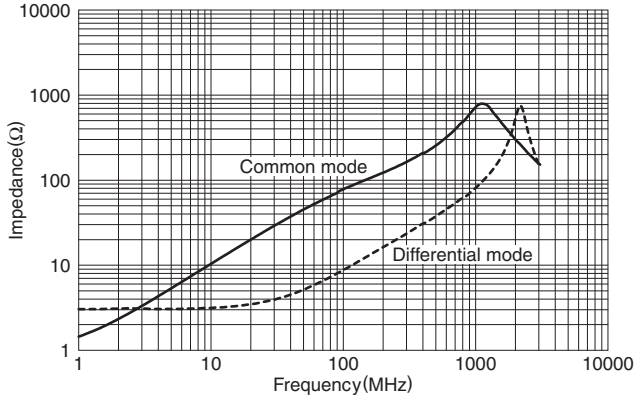
• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Part No.	Common mode impedance (Ω) [100MHz]		DC resistance (Ω)max. [1 line]	Cutoff frequency (GHz)typ.	Clamp voltage (V)max.	Rated current I _{dc} (A)max.	Rated voltage E _{dc} (V)max.	Insulation resistance (M Ω)min.
	min.	typ.						
TCE1210G-900-2P	60	90	1.75	5.0	100	0.10	10	1

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS



Common Mode Filters

For Ultra High-speed Differential Signal Line (HDMI, DVI, DisplayPort, USB3.0, etc.)

Conformity to RoHS Directive

TCE Series TCE1608G

FEATURES

- Common mode filter for improving EMC with an ESD protection element (ESD suppressor) using thin-film processing and materials technology acquired from HDD head manufacturing.
- One component can be used for suppressing common mode noise and ESD.
- Greatly reduces the number of components and installation area.
- By providing wide bandwidth (cutoff frequency: 3GHz min.) for differential mode, this product has almost no effect for high-speed differential signals and can suppress the radiated emission.
- This product contains no lead and supports lead-free soldering.

APPLICATIONS

Suppressing noise and ESD for high-speed differential signal interfaces such as USB 2.0 and HDMI for mobile devices such as mobile phones, smartphones, digital cameras, and portable music players, and general consumer products.

PRODUCT IDENTIFICATION

TCE	1608	G	-	900	-	4P	-	T
(1)	(2)	(3)	(4)	(5)	(6)			

- (1) Series name
- (2) Dimensions L×W
- (3) Product identification number
- (4) Impedance[at 100MHz]
900: 90Ω
- (5) Number of line
4P: 4-line
- (6) Packaging style
T: ø180mm reel taping

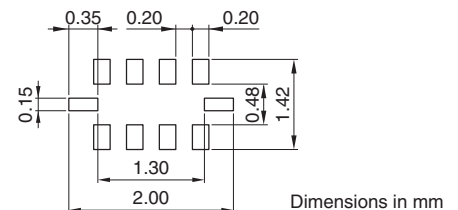
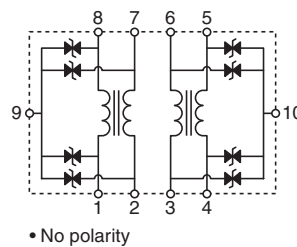
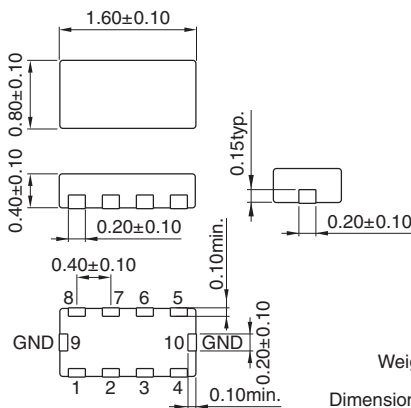
TEMPERATURE RANGES

Operating	-25 to +85°C
Storage(After mount)	-25 to +85°C

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	4000 pieces/reel

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAMS/RECOMMENDED PC BOARD PATTERNS



Weight: 3mg
Dimensions in mm



• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Part No.	Common mode impedance (Ω) [100MHz]		DC resistance (Ω)max. [1 line]	Cutoff frequency (GHz)typ.	Clamp voltage (V)max.	Rated current I _{dc} (A)max.	Rated voltage E _{dc} (V)max.	Insulation resistance (M Ω)min.
	min.	typ.						
TCE1608G-900-4P	60	90	1.95	5.0	100	0.10	10	1

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

