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Common Mode Filters

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

TCM series

| | | |
|-------|----------|-------------------------|
| Type: | TCM0403S | [0201 inch]* |
| | TCM0605S | [0202 inch] |
| | TCM0806S | [0302 inch] |
| | | * Dimensions Code [EIA] |

Issue date: August 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

TCM Series TCM0403S

FEATURES

- Smallest size in the industry at L0.45×W0.30×T0.23mm.
- Thin-film common mode filter with a large bandwidth for high-speed differential signal interfaces such as USB 3.0 and DisplayPort.
- The series suppresses radiation noise due to common mode noise, without affecting the transmission of high-speed differential signals by realizing a higher cutoff frequency.
- This product contains no lead and supports lead-free soldering.

APPLICATIONS

- High speed interface(HDMI, DVI, DisplayPort, USB3.0 and Serial ATA, etc.) in electronics devices.
- Smartphones, digital cellular phones, tablet PCs, notebook PCs, PDP/LCD/DLP/PJ TVs, portable audio, DVC, DSC, DVD players, amusement machines, etc.

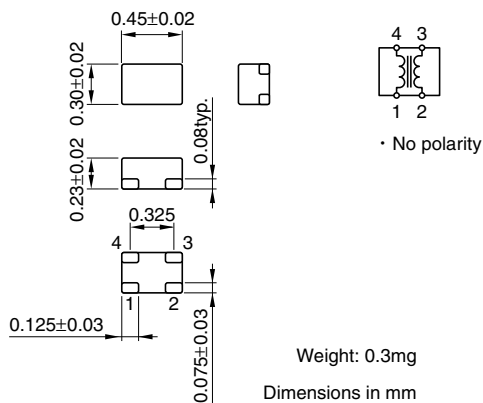
TEMPERATURE RANGES

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

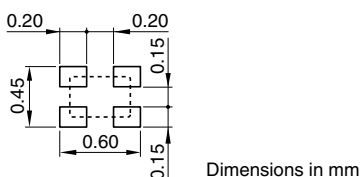
PACKAGING STYLE AND QUANTITIES

| | |
|-----------------|-------------------|
| Packaging style | Quantity |
| Taping | 10000 pieces/reel |

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERN



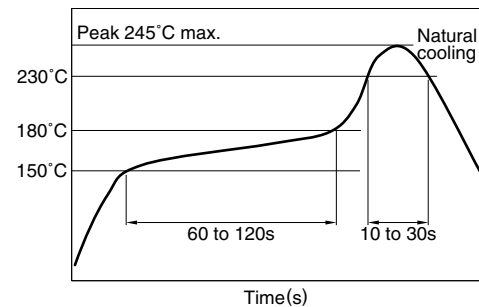
PRODUCT IDENTIFICATION

| | | | | | |
|-----|------|-----|-------|------|-----|
| TCM | 0403 | S | - 350 | - 2P | - T |
| (1) | (2) | (3) | (4) | (5) | (6) |

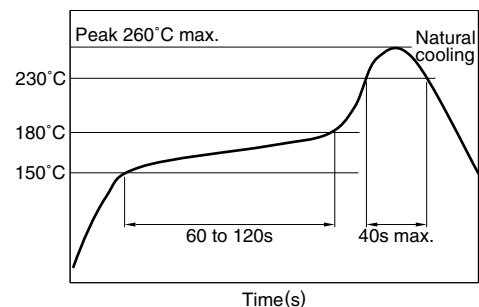
- (1) Series name
- (2) Dimensions L×W
- (3) Product identification number
- (4) Impedance[at 100MHz]
350: 35Ω
- (5) Number of line
2P: 2-line
- (6) Packaging style
T: ø180mm reel taping

RECOMMENDED SOLDERING CONDITIONS

RECOMMENDED TEMPERATURE PROFILE FOR LEAD-FREE SOLDER



REFLOW PROFILE FOR SOLDER HEAT RESISTANCE



• 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.

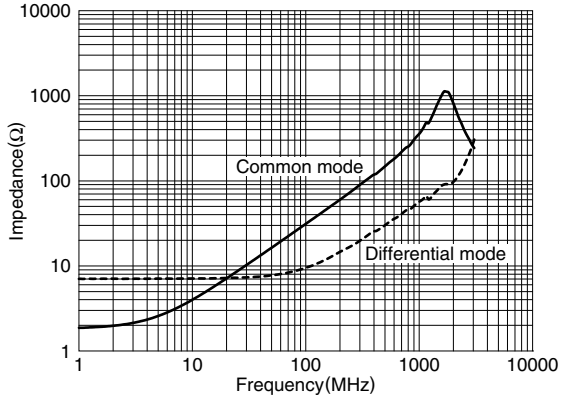
• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

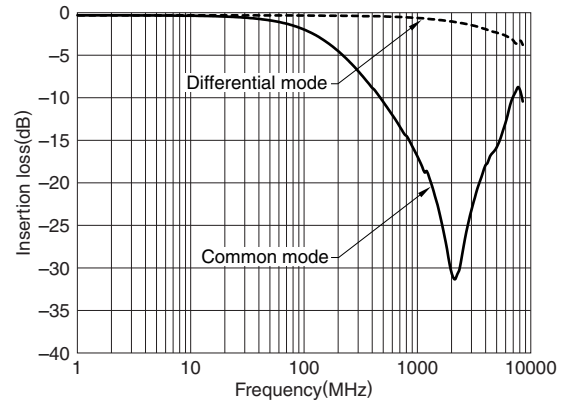
| Part No. | Common mode impedance (Ω)[at 100MHz] | DC resistance (Ω) [1 line] | Cutoff frequency (GHz)typ. | Rated current Idc (A)max. | Rated voltage Edc (V)max. | Insulation resistance (M Ω)min. |
|-----------------|---|-------------------------------------|----------------------------|---------------------------|---------------------------|---|
| TCM0403S-350-2P | 35 \pm 12 | 3.0 \pm 30% | 7.0 | 0.05 | 5 | 10 |

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS



INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



Common Mode Filters

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

Conformity to RoHS Directive

TCM Series TCM0605S

FEATURES

- Thin-film common mode filter with a large bandwidth for high-speed differential signal interfaces such as USB 3.0 and DisplayPort.
- The series suppresses radiation noise due to common mode noise, without affecting the transmission of high-speed differential signals by realizing a higher cutoff frequency.
- This product contains no lead and supports lead-free soldering.

APPLICATIONS

- High speed interface(HDMI, DVI, DisplayPort, USB3.0 and Serial ATA, etc.) in electronics devices.
- Notebook PCs, PDP/LCD/DLP/PJ TVs, portable audio, digital cellular phones, DVC, DSC, DVD players, amusement machines, etc.

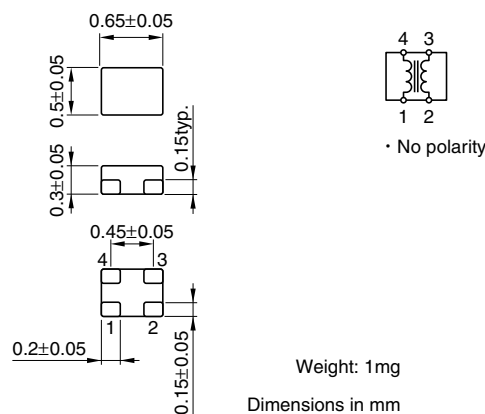
TEMPERATURE RANGES

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

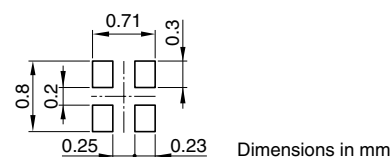
PACKAGING STYLE AND QUANTITIES

| | |
|-----------------|-------------------|
| Packaging style | Quantity |
| Taping | 10000 pieces/reel |

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERN

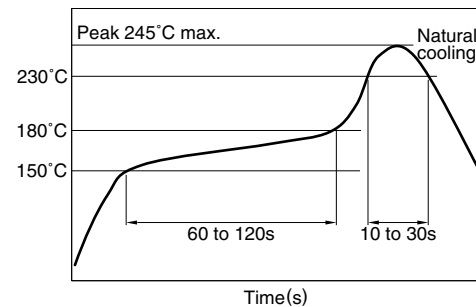


PRODUCT IDENTIFICATION

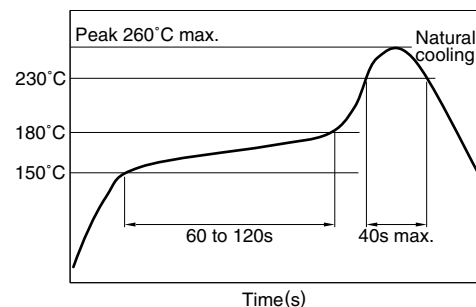
| | | | | | |
|-----|------|-----|-------|------|-----|
| TCM | 0605 | S | - 120 | - 2P | - T |
| (1) | (2) | (3) | (4) | (5) | (6) |

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

RECOMMENDED SOLDERING CONDITIONS RECOMMENDED TEMPERATURE PROFILE FOR LEAD-FREE SOLDER



REFLOW PROFILE FOR SOLDER HEAT RESISTANCE



• 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.

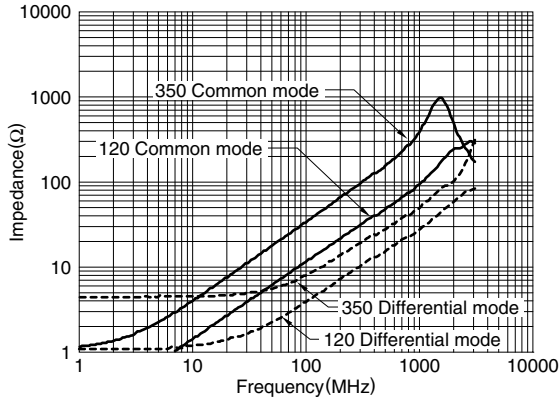
• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

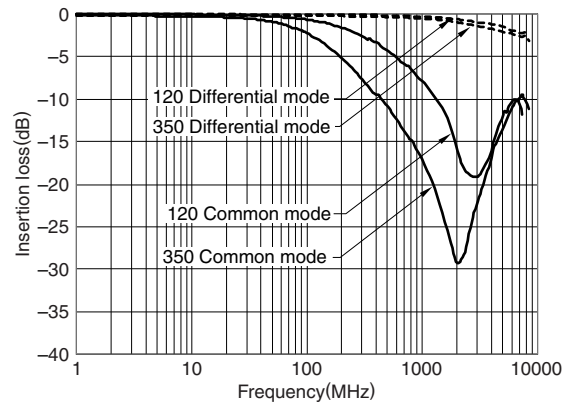
| Part No. | Common mode impedance (Ω)[at 100MHz] | DC resistance (Ω)max. [1 line] | Cutoff frequency (GHz)typ. | Rated current Idc (A)max. | Rated voltage Edc (V)max. | Insulation resistance (M Ω)min. |
|-----------------|---|---|----------------------------|---------------------------|---------------------------|---|
| TCM0605S-120-2P | 12 \pm 5 | 1.0 | 8.5 | 0.1 | 10 | 10 |
| TCM0605S-350-2P | 35 \pm 12 | 2.7 | 8.0 | 0.1 | 10 | 10 |

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS



INSERTION LOSS vs. FREQUENCY CHARACTERISTICS



Common Mode Filters

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

Conformity to RoHS Directive

TCM Series TCM0806S

FEATURES

- Thin-film common mode filter with a wide bandwidth for high-speed differential signal interfaces such as USB 3.0 and DisplayPort.
- The series suppresses radiation noise due to common mode noise, without affecting the transmission of high-speed differential signals by realizing a higher cutoff frequency.
- This product contains no lead and supports lead-free soldering.

APPLICATIONS

- High speed interface(HDMI, DVI, DisplayPort, USB3.0 and Serial ATA, etc.) in electronics devices.
- Notebook PCs, PDP/LCD/DLP/PJ TVs, portable audio, digital cellular phones, DVC, DSC, DVD players, amusement machines, etc.

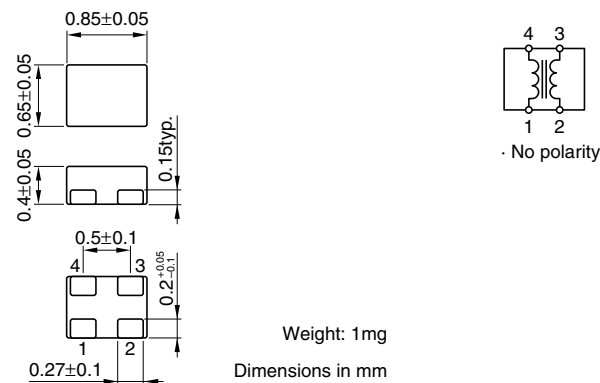
TEMPERATURE RANGES

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

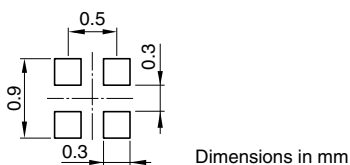
PACKAGING STYLE AND QUANTITIES

| | |
|-----------------|-------------------|
| Packaging style | Quantity |
| Taping | 10000 pieces/reel |

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERN



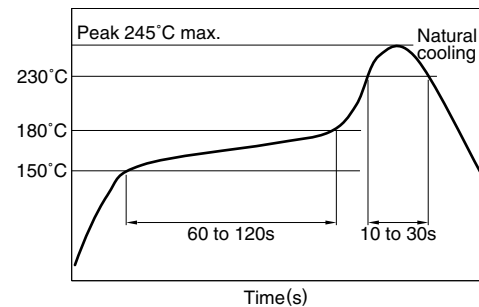
PRODUCT IDENTIFICATION

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

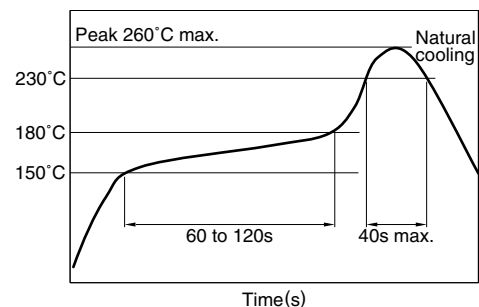
- (1) Series name
- (2) Dimensions L×W
- (3) Product identification number
- (4) Impedance[at 100MHz]
120: 12Ω
- (5) Number of line
2P: 2-line
- (6) Packaging style
T: ø180mm reel taping

RECOMMENDED SOLDERING CONDITIONS

RECOMMENDED TEMPERATURE PROFILE FOR LEAD-FREE SOLDER



REFLOW PROFILE FOR SOLDER HEAT RESISTANCE



• 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.

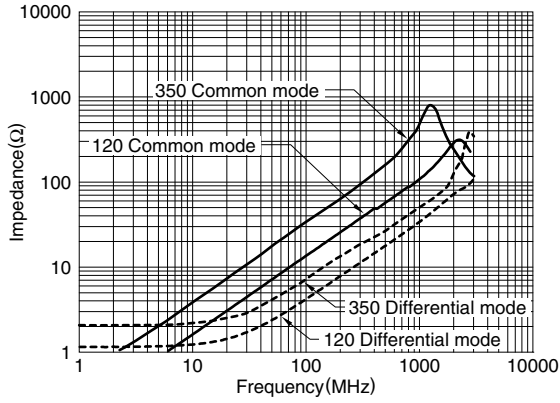
• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

| Part No. | Common mode impedance (Ω)[at 100MHz] | DC resistance (Ω)max. [1 line] | Cutoff frequency (GHz)typ. | Rated current Idc (A)max. | Rated voltage Edc (V)max. | Insulation resistance (M Ω)min. |
|-----------------|---|---|----------------------------|---------------------------|---------------------------|---|
| TCM0806S-120-2P | 12 \pm 5 | 1 | 8.5 | 0.1 | 10 | 10 |
| TCM0806S-350-2P | 35 \pm 12 | 1.5 | 7.0 | 0.1 | 10 | 10 |

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS



INSERTION LOSS vs. FREQUENCY CHARACTERISTICS

