

3-terminal Filters For Power Line

Conformity to RoHS Directive

ACH Series ACH32C

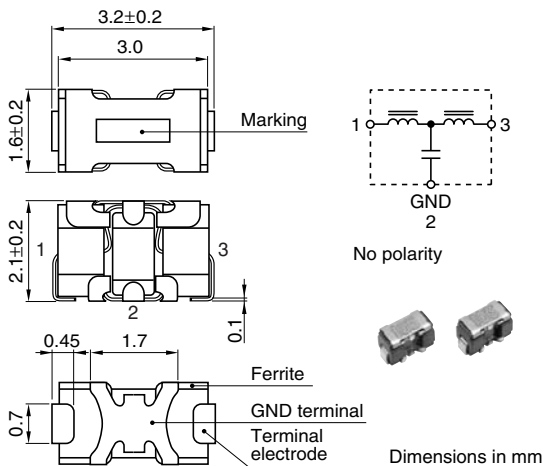
FEATURES

- These T-type EMC filters comprise ferrite beads and chip capacitors and are engineered to handle high current levels.
- The series offers even greater attenuation characteristics when used in a stable circuit on the ground.
- The ACH series is ideal for high-density circuit design, since the series is vertically mounted and does not require much mounting space.
- Because guarantee temperature range is -40 to $+125^{\circ}\text{C}$, it is possible to use in strict environmental condition.
- Available for reflow soldering.

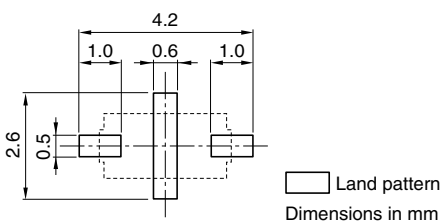
APPLICATIONS

Home electronic equipment, (TVs, VCRs, CD players, DAT players, electric musical instruments, PCs, etc.), office automation equipment (computers, terminals, stand-alone word processors, fax machines, etc.), factory automation equipment (robots, numerical control devices, process controllers, etc.), automotive electronics (car navigation, ECU, etc.)

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERN REFLOW SOLDERING



PRODUCT IDENTIFICATION

| | | | | |
|-----|-----|-------|-----|-----|
| ACH | 32C | - 103 | - T | □□□ |
| (1) | (2) | (3) | (4) | (5) |

- (1) Series name
 (2) Dimensions
 32C: 3216 type(3.2×1.6mm)
 (3) Capacitance
 103: 10000pF
 (4) Packaging style
 T: ϕ 180mm reel taping
 (5) TDK internal code

TEMPERATURE RANGES

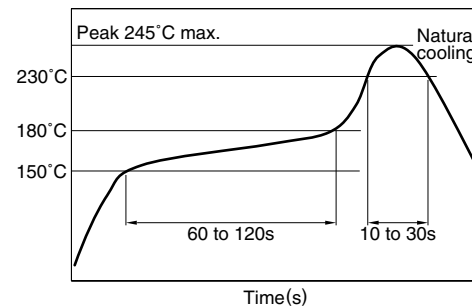
| | |
|----------------------|---------------------------------|
| Operating | -40 to $+125^{\circ}\text{C}$ |
| Storage(After mount) | -40 to $+125^{\circ}\text{C}$ |

PACKAGING STYLE AND QUANTITIES

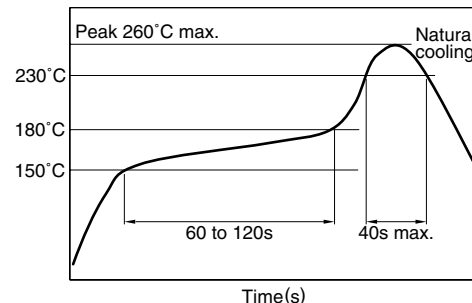
| | | |
|-----------------|--------------|------------------|
| Packaging style | Reel | Quantity |
| Taping | ϕ 180mm | 2000 pieces/reel |

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.

- Please contact our Sales office when your application is considered the following:

The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

- All specifications are subject to change without notice.

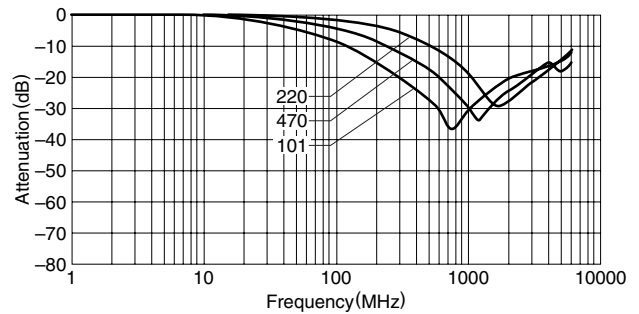
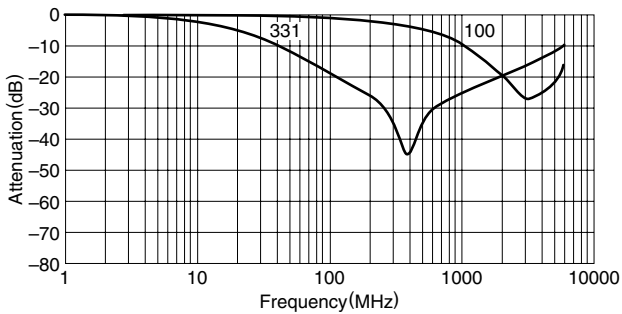
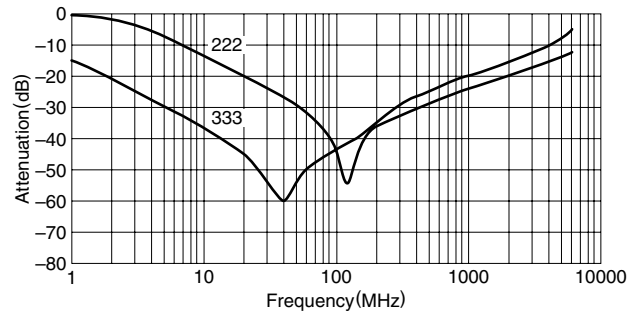
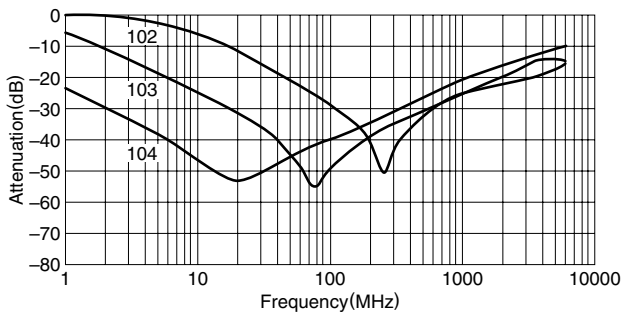
ELECTRICAL CHARACTERISTICS

| Part No. | Rated voltage E _{dc} (V)max. | Rated current (A)max. | Insulation resistance (M Ω)min. | DC resistance (m Ω)max. | Guaranteed attenuation (dB) | Guaranteed frequency bandwidth (MHz) |
|-----------------|--|--------------------------|--|------------------------------------|-----------------------------------|--|
| ACH32C-100-T001 | 50 | 6 | 100 | 2 | -15 | 2000 to 6000 |
| ACH32C-220-T001 | 50 | 6 | 100 | 2 | -15 | 1300 to 2500 |
| ACH32C-470-T001 | 50 | 6 | 100 | 2 | -15 | 650 to 2500 |
| ACH32C-101-T001 | 50 | 6 | 100 | 2 | -20 | 450 to 1300 |
| ACH32C-331-T001 | 50 | 6 | 100 | 2 | -20 | 200 to 800 |
| ACH32C-102-T001 | 50 | 6 | 100 | 2 | -25 | 100 to 350 |
| ACH32C-222-T001 | 50 | 6 | 100 | 2 | -25 | 55 to 300 |
| ACH32C-103-T001 | 50 | 6 | 100 | 2 | -25 | 30 to 200 |
| ACH32C-333-T001 | 50 | 6 | 100 | 2 | -25 | 10 to 300 |
| ACH32C-104-T001 | 50 | 6 | 100 | 2 | -25 | 3.5 to 200 |

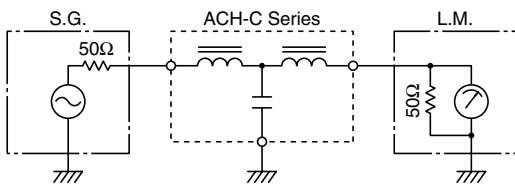
TYPICAL ELECTRICAL CHARACTERISTICS

ATTENUATION vs. FREQUENCY CHARACTERISTICS

(Glass epoxy coated double side mounting PCB)



CIRCUIT DIAGRAM



3-terminal Filters

For Power Line

Conformity to RoHS Directive

ACH Series ACH3218, ACH4518

FEATURES

- The ACH series consists of products with superior attenuation characteristics, in which the T-type filter circuit is magnetically shielded with ferrite.
- The series offers even greater attenuation characteristics when used in a stable circuit on the ground.
- The ACH series is ideal for high-density circuit design, since the series is vertically mounted and does not require much mounting space.
- Available for reflow soldering.
- It is a product conforming to RoHS directive.

PRODUCT IDENTIFICATION

| | | | | | | | | |
|-----|------|-----|-----|-----|---|---|---|---|
| ACH | 3218 | - | 223 | - | T | D | □ | □ |
| (1) | (2) | (3) | (4) | (5) | | | | |

- (1) Series name
 (2) Dimensions
 (3) Type
 (4) Packaging style
 (5) TDK internal code

TEMPERATURE RANGES

| | |
|----------------------|---------------|
| Operating | -40 to +125°C |
| Storage(After mount) | -40 to +125°C |

PACKAGING STYLE AND QUANTITIES

| | |
|-----------------|------------------|
| Packaging style | Quantity |
| Taping | 1000 pieces/reel |

HANDLING AND PRECAUTIONS

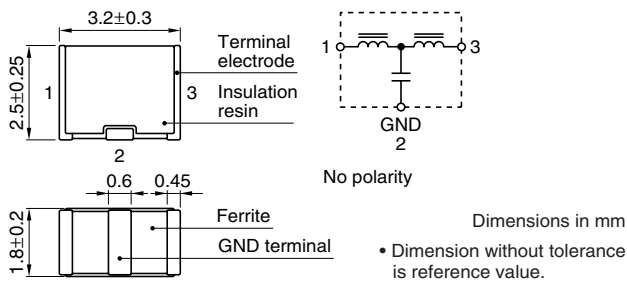
- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- The inductance value may change due to magnetic saturation if the current exceeds the rated maximum.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

• 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.

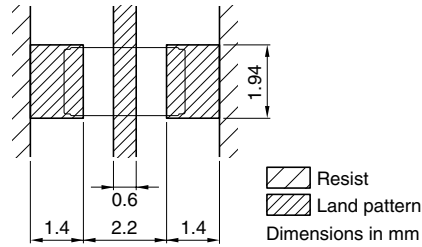
• Please contact our Sales office when your application is considered the following:
 The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.

ACH3218 TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERN REFLOW SOLDERING

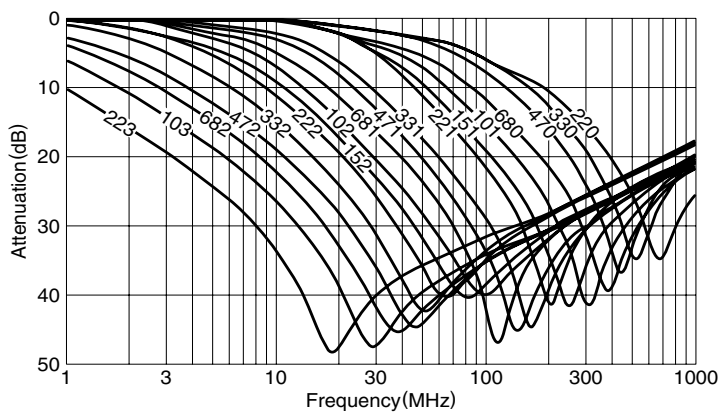


ELECTRICAL CHARACTERISTICS

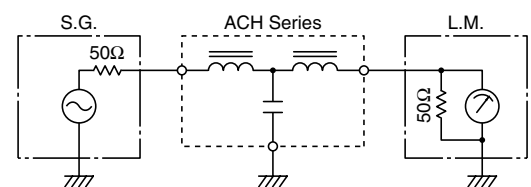
| Part No. | 25dB attenuation frequency range (MHz) | Rated voltage E _{dc} (V)max. | Rated current (A)max. | DC resistance (Ω)max. [Terminal No.1 to 3] | Insulation resistance (MΩ)min. [Terminal No.1 to 2/No.2 to 3] |
|-------------|--|---------------------------------------|-----------------------|--|---|
| ACH3218-223 | 11 to 55 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-103 | 17 to 60 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-682 | 22 to 75 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-472 | 30 to 85 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-332 | 37 to 90 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-222 | 45 to 105 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-152 | 60 to 115 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-102 | 80 to 140 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-681 | 95 to 150 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-471 | 120 to 180 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-331 | 130 to 210 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-221 | 170 to 250 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-151 | 205 to 280 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-101 | 265 to 340 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-680 | 340 to 420 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-470 | 420 to 500 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-330 | 500 to 600 | 20 | 1.5 | 0.06 | 1000 |
| ACH3218-220 | 600 to 700 | 20 | 1.5 | 0.06 | 1000 |

TYPICAL ELECTRICAL CHARACTERISTICS

ATTENUATION vs. FREQUENCY CHARACTERISTICS

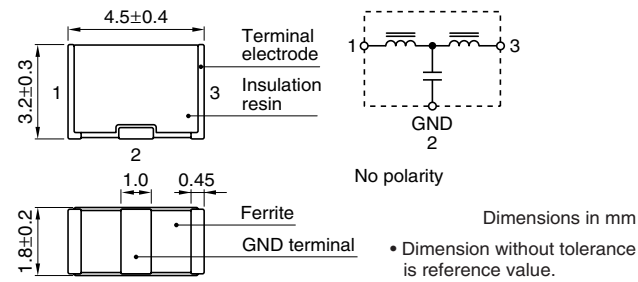


MEASURING CIRCUIT

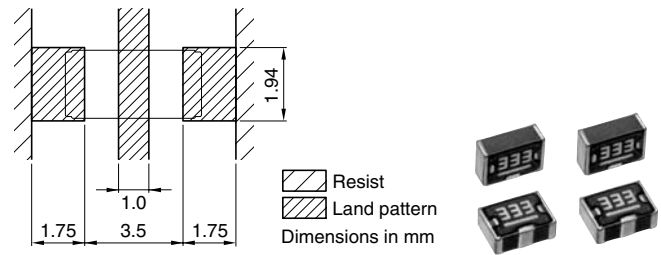


ACH4518 TYPE

SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERN REFLOW SOLDERING

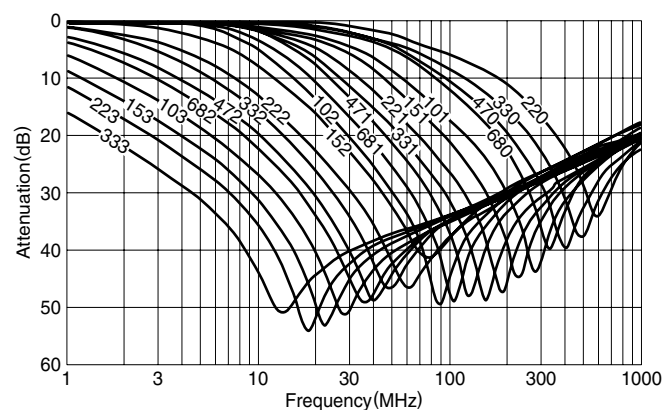


ELECTRICAL CHARACTERISTICS

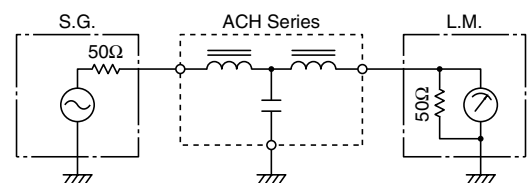
| Part No. | 25dB attenuation frequency range (MHz) | Rated voltage Edc (V)max. | Rated current (A)max. | DC resistance (Ω)max. [Terminal No.1 to 3] | Insulation resistance (M Ω)min. [Terminal No.1 to 2/No.2 to 3] |
|-------------|--|------------------------------------|-----------------------------|---|---|
| ACH4518-333 | 6 to 60 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-223 | 9 to 65 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-153 | 11 to 70 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-103 | 15 to 75 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-682 | 20 to 85 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-472 | 25 to 90 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-332 | 35 to 100 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-222 | 40 to 110 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-152 | 50 to 130 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-102 | 65 to 150 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-681 | 75 to 160 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-471 | 95 to 180 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-331 | 115 to 205 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-221 | 150 to 250 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-151 | 190 to 290 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-101 | 235 to 335 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-680 | 290 to 395 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-470 | 360 to 460 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-330 | 450 to 550 | 50 | 2.0 | 0.06 | 1000 |
| ACH4518-220 | 530 to 650 | 50 | 2.0 | 0.06 | 1000 |

TYPICAL ELECTRICAL CHARACTERISTICS

ATTENUATION vs. FREQUENCY CHARACTERISTICS

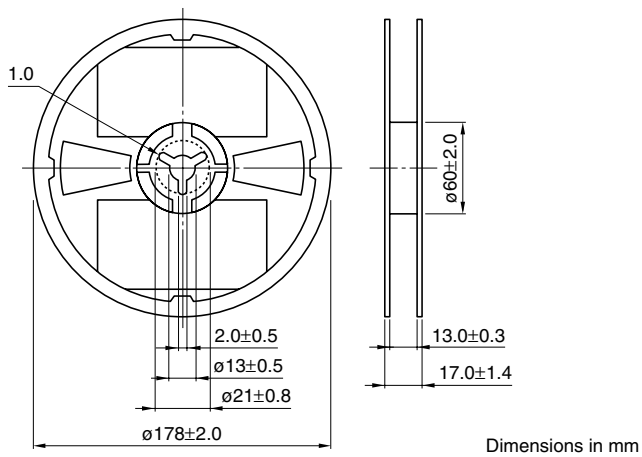


MEASURING CIRCUIT

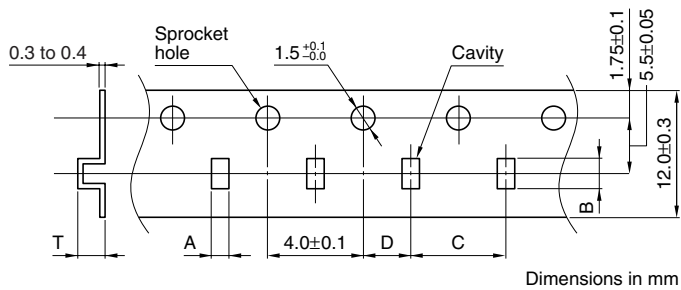


PACKAGING STYLES

REEL DIMENSIONS



TAPE DIMENSIONS



| Type | A | B | C | D | T |
|--------|---------------|---------------|---------------|----------------|---------|
| 321825 | 2.2 ± 0.2 | 3.7 ± 0.2 | 4.0 ± 0.1 | 2.0 ± 0.05 | 3.3max. |
| 451832 | 2.2 ± 0.2 | 5.2 ± 0.2 | 4.0 ± 0.1 | 2.0 ± 0.05 | 3.8max. |

