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### **3-teminal Filters**

### For power line

### **ACH** series

Type: ACH32C [1206 inch]\*

ACH3218 [1207 inch] ACH4518 [1807 inch]

\* Dimensions Code [EIA]

Issue date: September 2011

<sup>•</sup> All specifications are subject to change without notice.

<sup>•</sup> 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.

#### **ATDK**

# 3-terminal Filters For Power Line

#### **Conformity to RoHS Directive**

#### **ACH Series ACH32C**

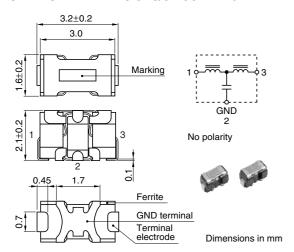
#### **FEATURES**

- 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°C, it is possible to use in strict environmental condition.
- · Available for reflow soldering.

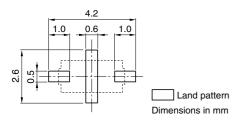
#### **APPLICATIONS**

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: ø180mm reel taping
- (5) TDK internal code

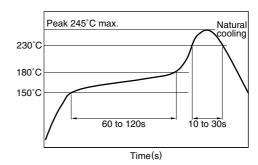
#### **TEMPERATURE RANGES**

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

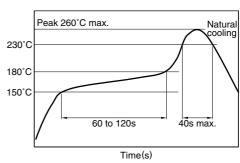
#### **PACKAGING STYLE AND QUANTITIES**

Packaging style	Reel	Quantity
Taping	ø180mm	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:

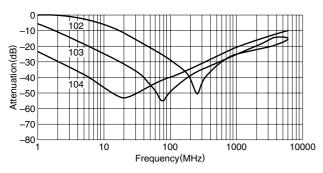
  The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

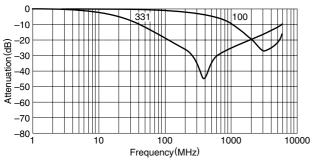


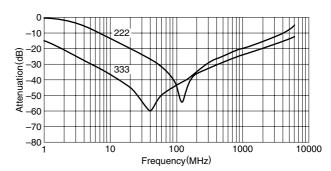
#### **ELECTRICAL CHARACTERISTICS**

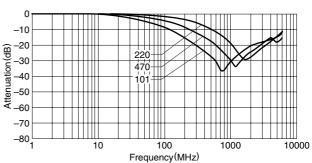
Part No.	Rated voltage Edc(V)max.	Rated current (A)max.	Insulation resistance $(M\Omega)$ min.	DC resistance $(m\Omega)$ max.	Guaranteed attenuation (dB)	Guaranteed frequency bandwidth (MHz)
ACH32C-100-T001	50	6	100	2	<b>–</b> 15	2000 to 6000
ACH32C-220-T001	50	6	100	2	<b>–</b> 15	1300 to 2500
ACH32C-470-T001	50	6	100	2	<b>–15</b>	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	<b>–</b> 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	<b>–</b> 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)

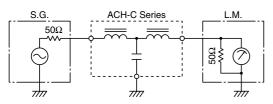








#### **CIRCUIT DIAGRAM**



<sup>•</sup> All specifications are subject to change without notice.



# 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

$$\frac{\mathsf{ACH}}{(1)} \; \frac{3218}{(2)} \; \frac{223}{(3)} \; \frac{\mathsf{T}}{(4)} \; \frac{\mathsf{D} \; \Box \Box}{(5)}$$

- (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

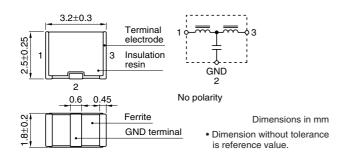
#### HANDLING AND PRECAUTIONS

- 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.

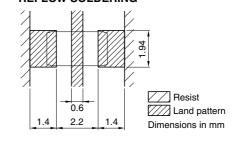
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
- Please contact our Sales office when your application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

#### &TDK

### ACH3218 TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERN REFLOW SOLDERING

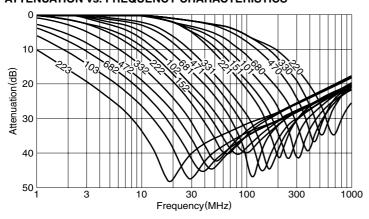




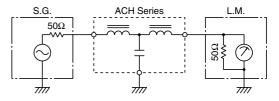
#### **ELECTRICAL CHARACTERISTICS**

Part No.	25dB attenuation frequency range (MHz)	Rated voltage Edc (V)max.	Rated current (A)max.	DC resistance $(\Omega)$ max. [Terminal No.1 to 3]	Insulation resistance $(M\Omega)$ 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**

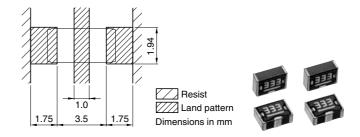


#### &TDK

## ACH4518 TYPE SHAPES AND DIMENSIONS/CIRCUIT DIAGRAM

#### $4.5 \pm 0.4$ Terminal electrode 3.2±0.3 Insulation resin GND 2 No polarity 1.0 0.45 Ferrite Dimensions in mm GND terminal • Dimension without tolerance is reference value.

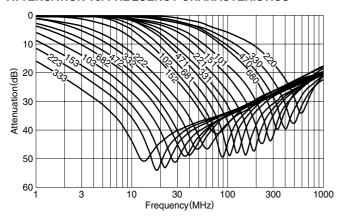
## RECOMMENDED PC BOARD PATTERN REFLOW SOLDERING



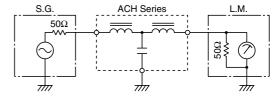
#### **ELECTRICAL CHARACTERISTICS**

Part No.	25dB attenuation frequency range (MHz)	Rated voltage Edc (V)max.	Rated current (A)max.	DC resistance $(\Omega)$ max. [Terminal No.1 to 3]	Insulation resistance (M $\Omega$ )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



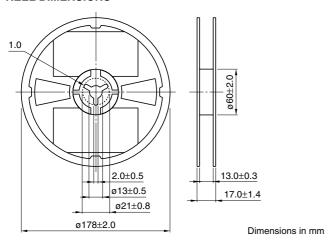
#### **MEASURING CIRCUIT**



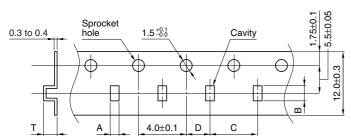
<sup>•</sup> All specifications are subject to change without notice.



## PACKAGING STYLES REEL DIMENSIONS

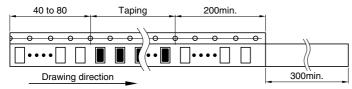


#### **TAPE DIMENSIONS**



Dimensions in mm

Туре	Α	В	С	D	Т
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.



Dimensions in mm

<sup>•</sup> All specifications are subject to change without notice.