



# Chip Beads

For general signal line

# HFxxACB series (For automobiles)

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HFxxACB2012	[0805 inch]*
HFxxACB3216	[1206 inch]
HFxxACB3225	[1210 inch]
HFxxACB4532	[1812 inch]

\* Dimensions Code JIS[EIA]

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## REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

### SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

#### REMINDERS

- The storage period is less than 12 months. Be sure to follow the storage conditions (Temperature: 5 to 40°C, Humidity: 10 to 75% RH or less).  
If the storage period elapses, the soldering of the terminal electrodes may deteriorate.
- Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- Before soldering, be sure to preheat components.  
The preheating temperature should be set so that the temperature difference between the solder temperature and chip temperature does not exceed 150°C.
- Soldering corrections after mounting should be within the range of the conditions determined in the specifications.  
If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
- When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.
- Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- Carefully lay out the coil for the circuit board design of the non-magnetic shield type.  
A malfunction may occur due to magnetic interference.
- Use a wrist band to discharge static electricity in your body through the grounding wire.
- Do not expose the products to magnets or magnetic fields.
- Do not use for a purpose outside of the contents regulated in the delivery specifications.
- The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.  
The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.  
If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- (1) Aerospace/Aviation equipment
- (2) Transportation equipment (electric trains, ships, etc.)
- (3) Medical equipment
- (4) Power-generation control equipment
- (5) Atomic energy-related equipment
- (6) Seabed equipment
- (7) Transportation control equipment

- (8) Public information-processing equipment
- (9) Military equipment
- (10) Electric heating apparatus, burning equipment
- (11) Disaster prevention/crime prevention equipment
- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

# Chip Beads

## For general signal line

Product compatible with RoHS directive  
Halogen-free  
Compatible with lead-free solders  
AEC-Q200

# Overview of the HFxxACB Series

## FEATURES

- Noise reduction solution for general signal line.
- Lineup includes 4 sizes from 201209 to 453215.
- Achieves various frequency characteristics by using 3 materials with different features.
- There is no directivity.

## APPLICATION

Various ECUs, powertrains, body controls, and car multimedia (telematics).

## PART NUMBER CONSTRUCTION

HF70		ACB		201209		-	T		D25	
Material name	Series name	LxWxT Dimensions (mm)		Packaging style		Internal code				
HF70		201209	2.0x1.25x0.9	T	Taping	D25				
HF50		321611	3.2x1.6x1.1							
HF30		322513	3.2x2.5x1.3							
		453215	4.5x3.2x1.5							

## OPERATING TEMPERATURE RANGE, PACKAGE QUANTITY, PRODUCT WEIGHT

Type	Temperature range		Package quantity	Individual weight
	Operating temperature	Storage temperature*		
	(°C)	(°C)	(pieces/reel)	(mg)
HFxxACB2012	-40 to +125	-40 to +125	2,000	10
HFxxACB3216	-40 to +125	-40 to +125	2,000	22
HFxxACB3225	-40 to +125	-40 to +125	2,000	46
HFxxACB4532	-40 to +125	-40 to +125	1,000	94

\* The Storage temperature range is for after the circuit board is mounted.

- RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://www.tdk.co.jp/rohs/>
- Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

• All specifications are subject to change without notice.

# Overview of the HFxxACB Series

## RECOMMENDED REFLOW PROFILE



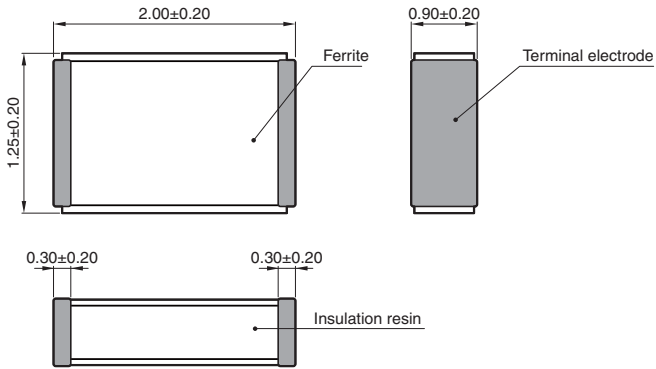
Preheating			Soldering		Peak	
Temp.	Temp.	Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3
150°C	180°C	60 to 120s	230°C	30 to 60s	250 to 260°C	10s

# HFxxACB series

# HFxxACB2012 Type

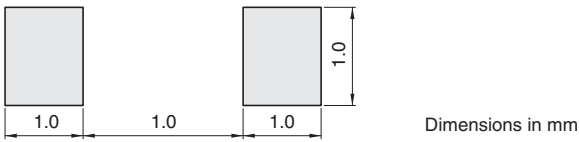


## SHAPE & DIMENSIONS



Dimensions in mm

## RECOMMENDED LAND PATTERN



Dimensions in mm

• All specifications are subject to change without notice.

# HFxxACB series HFxxACB2012 Type

## ■ ELECTRICAL CHARACTERISTICS

### □ CHARACTERISTICS SPECIFICATION TABLE

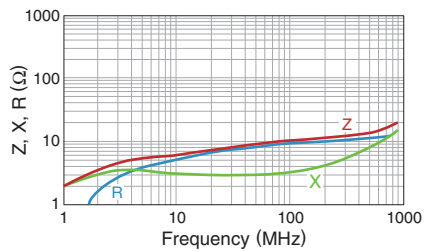
Impedance [100MHz] ( $\Omega$ )		DC resistance ( $\Omega$ )max.	Rated current (mA)max.	Part No.
	Tolerance			
10	$\pm 25\%$	0.1	600	HF70ACB201209-TD25
11	$\pm 25\%$	0.1	600	HF50ACB201209-TD25
7	$\pm 25\%$	0.1	600	HF30ACB201209-TD25

# HFxxACB series HFxxACB2012 Type

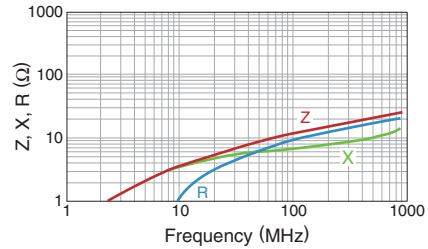
## ELECTRICAL CHARACTERISTICS

### Z, X, R VS. FREQUENCY CHARACTERISTICS

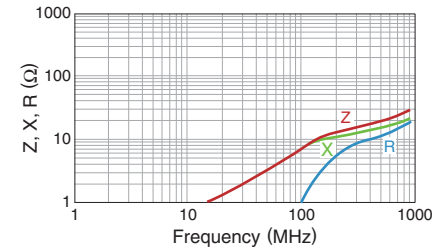
HF70ACB201209-TD25



HF50ACB201209-TD25



HF30ACB201209-TD25

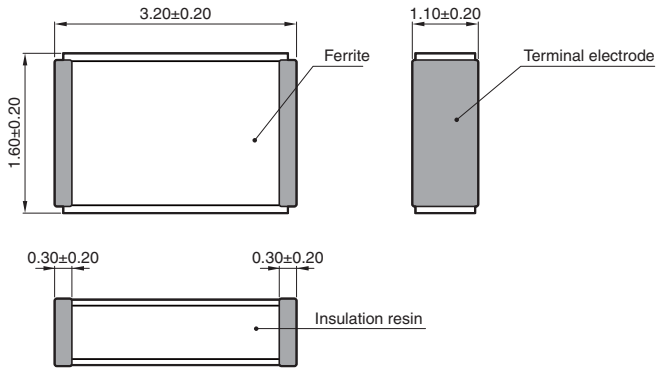


HFxxACB series

# HFxxACB3216 Type

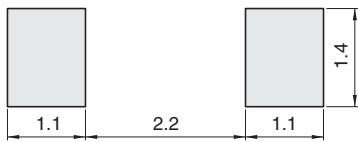


## SHAPE & DIMENSIONS



Dimensions in mm

## RECOMMENDED LAND PATTERN



Dimensions in mm



# HFxxACB series HFxxACB3216 Type

## ■ ELECTRICAL CHARACTERISTICS

### □ CHARACTERISTICS SPECIFICATION TABLE

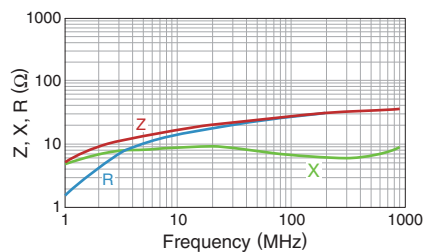
Impedance [100MHz] ( $\Omega$ )		DC resistance ( $\Omega$ )max.	Rated current (mA)max.	Part No.
	Tolerance			
26	$\pm 25\%$	0.2	500	HF70ACB321611-TD25
31	$\pm 25\%$	0.2	500	HF50ACB321611-TD25
19	$\pm 25\%$	0.2	500	HF30ACB321611-TD25

# HFxxACB series **HFxxACB3216** Type

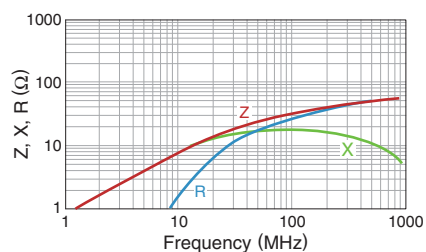
## ■ ELECTRICAL CHARACTERISTICS

### □ Z, X, R VS. FREQUENCY CHARACTERISTICS

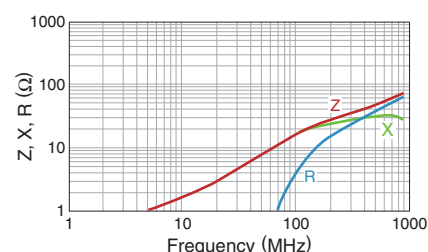
HF70ACB321611-TD25



HF50ACB321611-TD25



HF30ACB321611-TD25



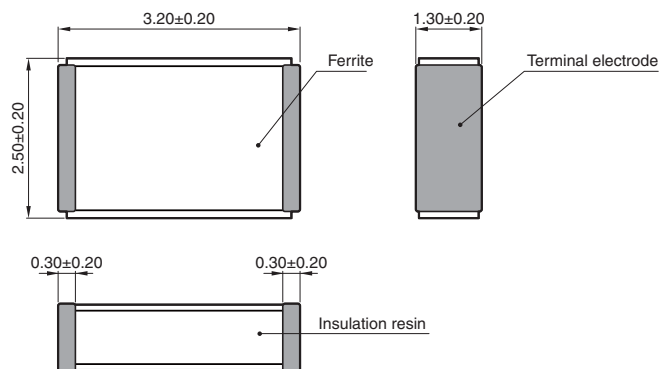
• All specifications are subject to change without notice.

# HFxxACB series

# HFxxACB3225 Type

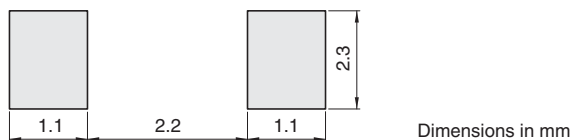


## SHAPE & DIMENSIONS



Dimensions in mm

## RECOMMENDED LAND PATTERN



Dimensions in mm

• All specifications are subject to change without notice.

# HFxxACB series HFxxACB3225 Type

## ■ ELECTRICAL CHARACTERISTICS

### □ CHARACTERISTICS SPECIFICATION TABLE

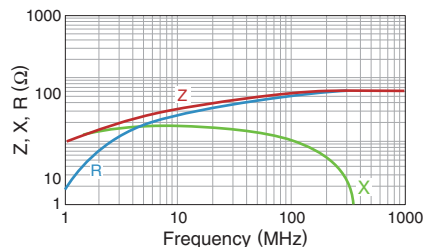
Impedance [100MHz]		DC resistance ( $\Omega$ )max.	Rated current (mA)max.	Part No.
( $\Omega$ )	Tolerance			
52	$\pm 25\%$	0.3	400	HF70ACB322513-TD25
60	$\pm 25\%$	0.3	400	HF50ACB322513-TD25
31	$\pm 25\%$	0.3	400	HF30ACB322513-TD25

# HFxxACB series **HFxxACB3225 Type**

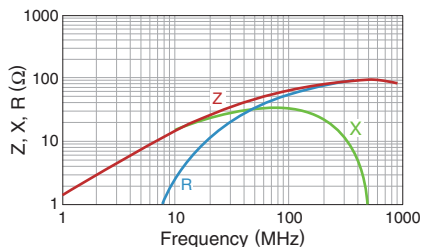
## ■ ELECTRICAL CHARACTERISTICS

### □ Z, X, R VS. FREQUENCY CHARACTERISTICS

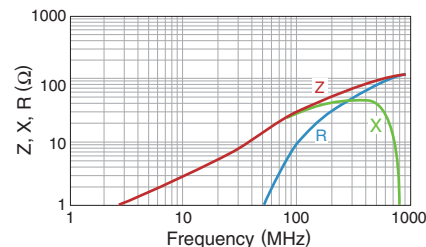
HF70ACB322513-TD25



HF50ACB322513-TD25



HF30ACB322513-TD25



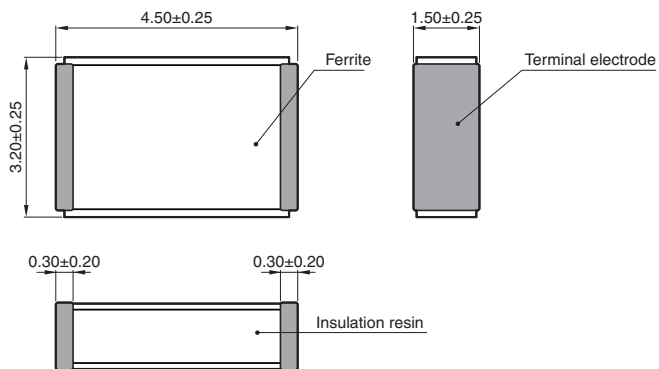
• All specifications are subject to change without notice.

HFxxACB series

# HFxxACB4532 Type

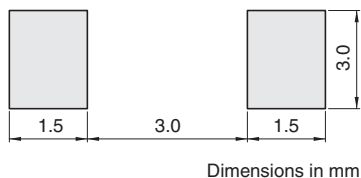


## SHAPE & DIMENSIONS



Dimensions in mm

## RECOMMENDED LAND PATTERN



Dimensions in mm

• All specifications are subject to change without notice.

# HFxxACB series HFxxACB4532 Type

## ■ ELECTRICAL CHARACTERISTICS

### □ CHARACTERISTICS SPECIFICATION TABLE

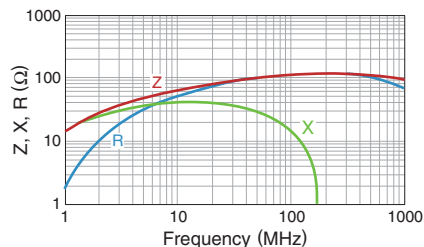
Impedance [100MHz]		DC resistance ( $\Omega$ )max.	Rated current (mA)max.	Part No.
( $\Omega$ )	Tolerance			
120	$\pm 25\%$	0.4	300	HF70ACB453215-TD25
125	$\pm 25\%$	0.4	300	HF50ACB453215-TD25
70	$\pm 25\%$	0.4	300	HF30ACB453215-TD25

# HFxxACB series HFxxACB4532 Type

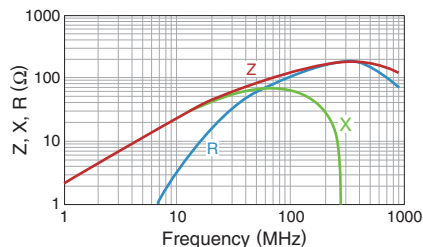
## ELECTRICAL CHARACTERISTICS

### Z, X, R VS. FREQUENCY CHARACTERISTICS

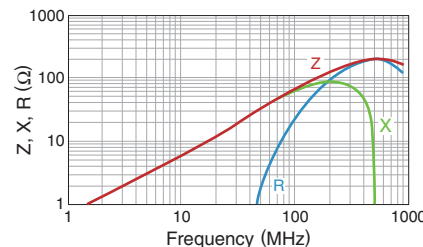
HF70ACB453215-TD25



HF50ACB453215-TD25



HF30ACB453215-TD25



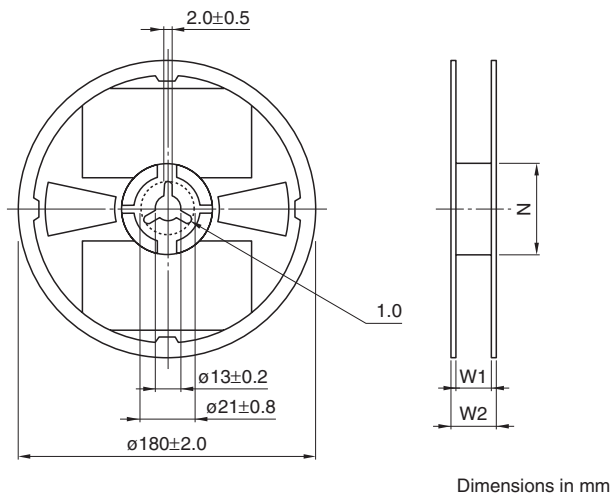
• All specifications are subject to change without notice.



HFxxACB series

# Packaging style

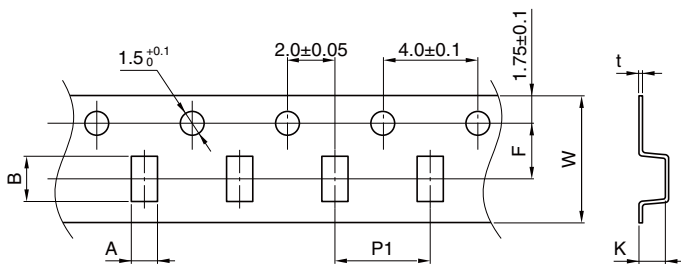
## REEL DIMENSIONS



Type	W1	W2	N
HFxxACB2012	8.4+2.0/-0.0	14.4max.	ø60min.
HFxxACB3216	8.4+2.0/-0.0	14.4max.	ø60min.
HFxxACB3225	8.4+2.0/-0.0	14.4max.	ø60min.
HFxxACB4532	13.0±0.3	17.0±1.4	ø61min.

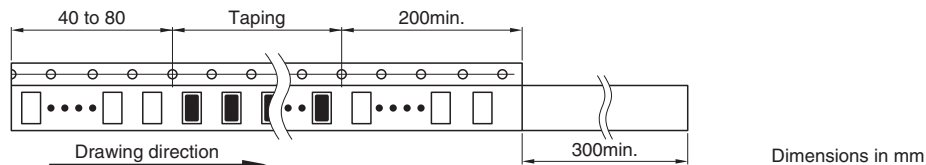
Dimensions in mm

## TAPE DIMENSIONS



Dimensions in mm

Type	A	B	F	P1	W	K	t
HFxxACB2012	1.4±0.1	2.25±0.1	3.5±0.05	4.0±0.1	8.0±0.3	1.25max.	0.3max.
HFxxACB3216	1.75±0.1	3.45±0.1	3.5±0.05	4.0±0.1	8.0±0.3	1.4max.	0.3max.
HFxxACB3225	2.6±0.1	3.45±0.1	3.5±0.05	4.0±0.1	8.0±0.3	1.6max.	0.35max.
HFxxACB4532	3.37±0.1	4.75±0.1	5.5±0.05	8.0±0.1	12.0±0.3	1.8max.	0.4max.



Dimensions in mm

• All specifications are subject to change without notice.