TDK

May 2017

Common Mode Filters

For automobile signal line

ACT Series

ACT1210R Type

ACT1210R	**[1210 inch]* (Flex-Ray)**

* Dimensions Code JIS[EIA]

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.

Common Mode Filters

For automobile signal line

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

Overview of ACT1210R Type

FEATURES

- Compact products (3225 size), whose characteristics are equivalent to that of conventional products (ACT45R).
- Common mode filters for Flex-Ray, compatible with an operating temperature range of −40 to +125°C.
- Flex-Ray for ACT1210R by unique method, maintenance and realized low DC resistance less than 1.5Ω while maintaining 100μH in the small size.

APPLICATION

Flex-Ray system.

PART NUMBER CONSTRUCTION

ACT1210R	-	101	-	2P	-	TL	00
Series • Type name		Inductance(typ.) (μH)		Number of lines		Packaging style	Internal code

Inductance(typ.) (μH)	
101	100

Number of lines	
2P	2 lines

Packaging style	
TL	ø330mm reel

Internal code
00

OPERATING TEMPERATURE RANGE, PACKAGE QUANTITY, PRODUCT WEIGHT

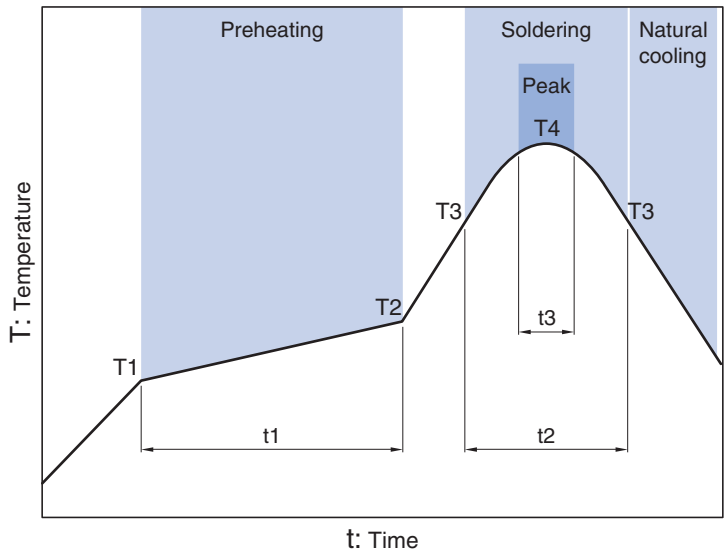
Type	Temperature range Operating temperature (°C)	Package quantity (pieces/reel)	Individual weight (g)
ACT1210R	−40 to +125	6,000	0.075

- RoHS Directive Compliant Product: See the following for more details.https://product.tdk.com/info/en/environment/rohs/index.html
- 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.

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.
Please note that the contents may change without any prior notice due to reasons such as upgrading.

ACT1210R Type

RECOMMENDED REFLOW PROFILE

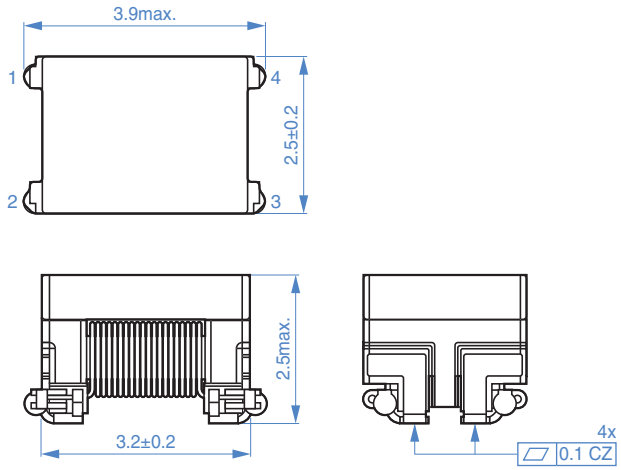


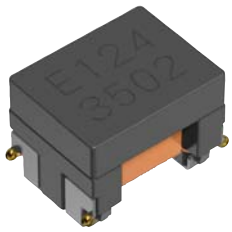
Preheating			Soldering		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3
150°C	180°C	60 to 120s	230°C	40s max.	245°C	5s

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ACT1210R Type

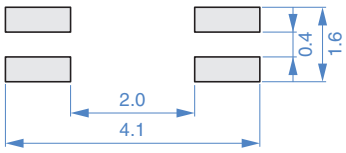
SHAPE & DIMENSIONS





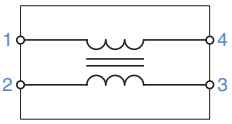
Dimensions in mm

RECOMMENDED LAND PATTERN



Dimensions in mm

CIRCUIT DIAGRAM



• No polarity

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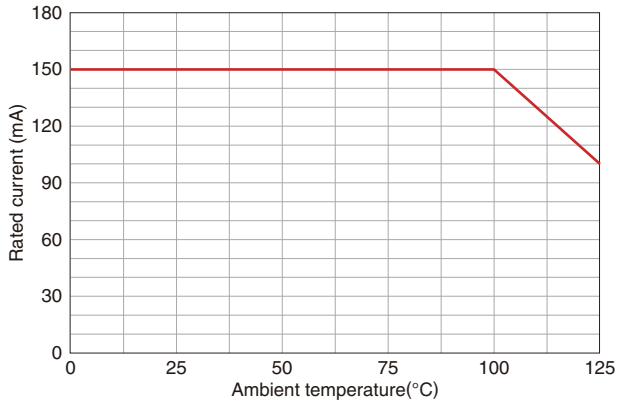
ACT1210R Type

■ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

Common mode inductance [100kHz] (μH)	Tolerance	DC resistance (Ω)max.	Insulation resistance (MΩ)min.	Rated current (mA)max.	Rated voltage (V)max.	Part No.
100	+50/–30%	1.5	10	150	80	ACT1210R-101-2P-TL00

○ Derating



○ Measurement equipment

Measurement item	Product No.	Manufacturer
Common mode inductance	4294A	Keysight Technologies
DC resistance	4338A	Keysight Technologies
Insulation resistance	4339A	Keysight Technologies

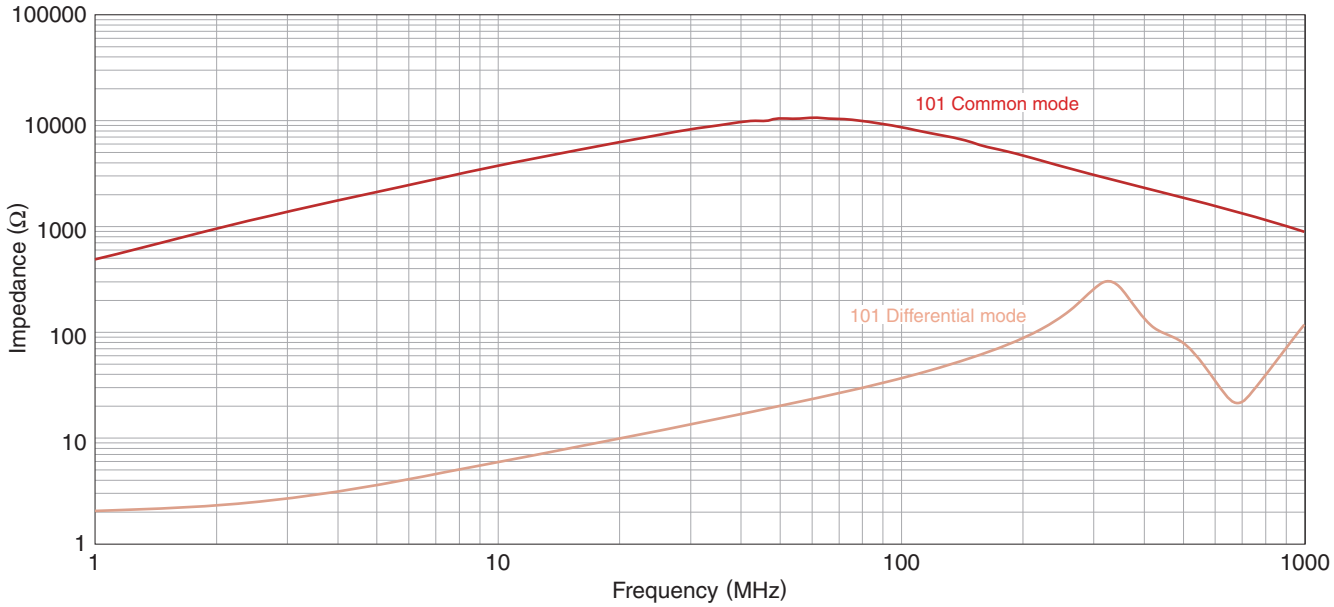
＊ Equivalent measurement equipment may be used.

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ACT1210R Type

■ELECTRICAL CHARACTERISTICS

□IMPEDANCE VS. FREQUENCY CHARACTERISTICS



○ Measurement equipment

Product No.	Manufacturer
4991A	Keysight Technologies

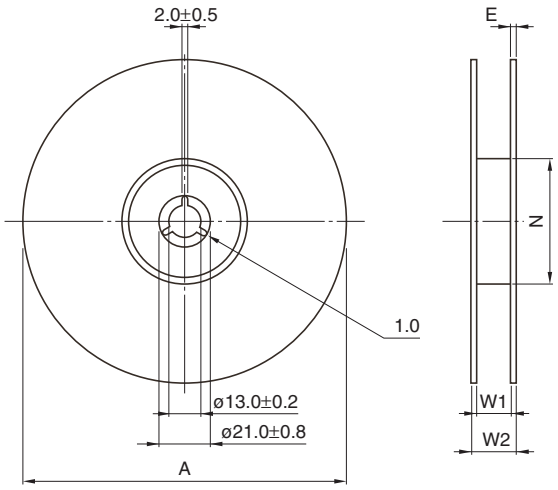
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ACT1210R Type

■PACKAGING STYLE

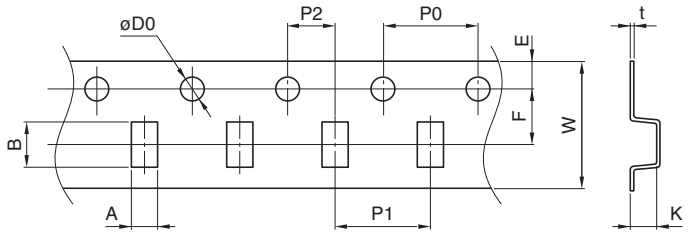
□REEL DIMENSIONS



Type	A	W1	W2	N	E
ACT1210R	ø330±2	13.5±0.5	17.5±1	100±1	2 typ.

Dimensions in mm

□TAPE DIMENSIONS



Dimensions in mm

Type	A	B	øD0	E	F	P0	P1	P2	W	K	t
ACT1210R	2.85±0.1	4.2±0.1	1.5+0.1/–0	1.75±0.1	5.5±0.05	4±0.1	4±0.1	2±0.05	12+0.3/–0.1	2.7±0.1	0.35±0.1

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