

**FEATURES**

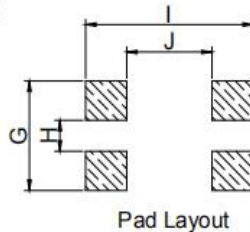
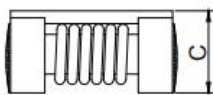
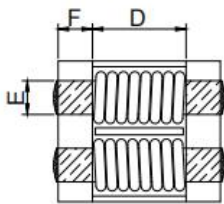
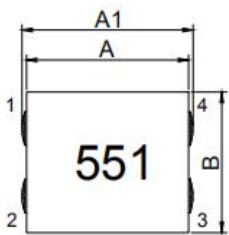
- Winding type realizes small size and low profile
- Prevention of common mode noise at high frequency
- Excellent solderability
- Operating temperature -40~+125℃ (Including self - temperature rise)
- RoHS Compliant


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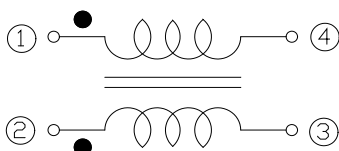
- Power line noise countermeasure for electronic equipment (Notebook, server applications, Battery , etc.)
- Best for high current circuit such as car
- Wireless charging and power device design

**Explanation of Part Number**
**ACM 1513 F- 701 T 80**
**1 2 3 4 5 6**

- ◆ 1:Product Series:Wire Wound Chip Common Mode Filters
- ◆ 2:Dimensions:
- ◆ 3: Material Code:CF Type
- ◆ 4:Common Mode Impedance( $\Omega$ )
- ◆ 5:Packing(Tape & Reel)
- ◆ 6:Rated Current: 80=8000mA

**Shapes and Dimensions [Dimensions in mm]**


<b>A:</b>	<b>15.0±0.5</b>	<b>mm</b>
<b>A1:</b>	<b>15.6±0.5</b>	<b>mm</b>
<b>B:</b>	<b>13.0±0.5</b>	<b>mm</b>
<b>C:</b>	<b>6.6Max.</b>	<b>mm</b>
<b>D:</b>	<b>9.4 Typ.</b>	<b>mm</b>
<b>E:</b>	<b>2.6 Typ.</b>	<b>mm</b>
<b>F:</b>	<b>2.5 Typ.</b>	<b>mm</b>
<b>G:</b>	<b>9.5 Typ.</b>	<b>mm</b>
<b>H:</b>	<b>3.3 Typ.</b>	<b>mm</b>
<b>I:</b>	<b>16.0 Typ.</b>	<b>mm</b>
<b>J:</b>	<b>8.8 Typ.</b>	<b>mm</b>

**Equivalent circuit**


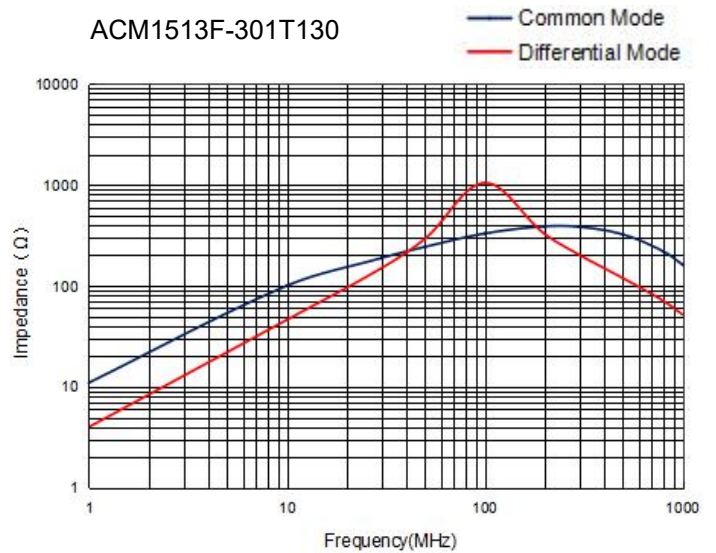
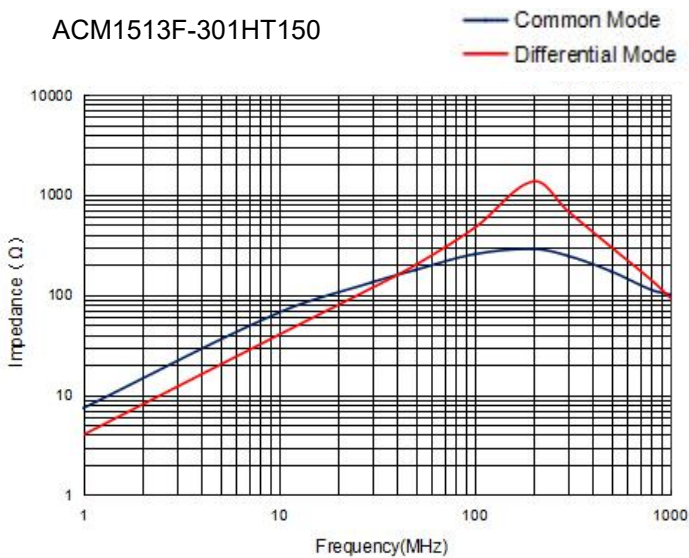
## Electrical Characteristics:

Part Number	Impedance ( $\Omega$ ) @100MHz		DC Resistance (m $\Omega$ ) Max	Rated Current (A) Max	Rated Voltage (V) Max	Insulation Resistance (M $\Omega$ ) Min	Marking
	MIN	TYP					
ACM1513F-301HT150	225	300	4.0	15.0	80	10	301
ACM1513F-301T130	225	300	5.0	13.0	80	10	301
ACM1513F-551HT120	400	550	5.0	12.0	80	10	551
ACM1513F-551T100	400	550	6.0	10.0	80	10	551
ACM1513F-501T100	400	500	6.0	10.0	80	10	501
ACM1513F-601T100	500	600	7.0	10.0	80	10	601
ACM1513F-701T100	500	700	7.0	10.0	80	10	701
ACM1513F-102T90	800	1000	10.0	9.0	80	10	102
ACM1513F-152T50	1200	1500	23.0	5.0	80	10	152

Rated Current : Based on temperature rise ( $\Delta T$  : 40°C TYP.)

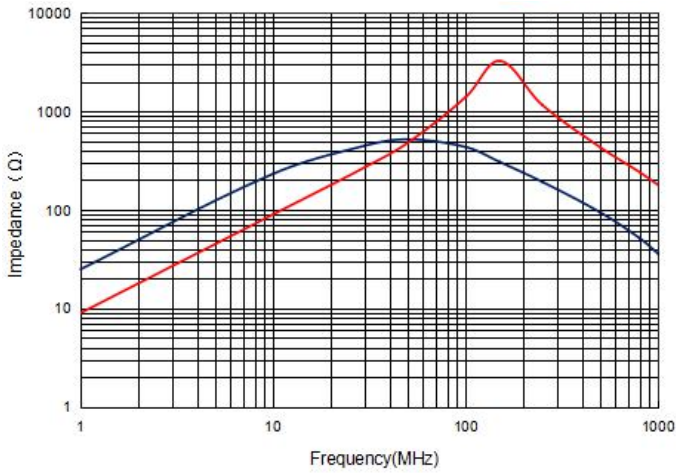
## TYPICAL ELECTRICAL CHARACTERISTICS

### Impedance VS. Frequency

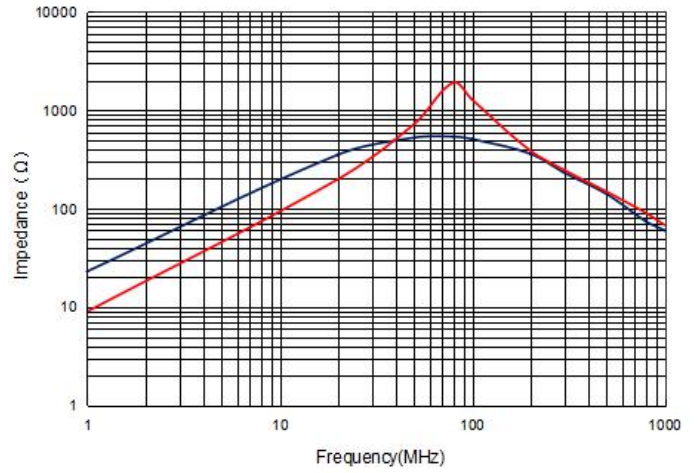


**ACM1513F-551HT120**

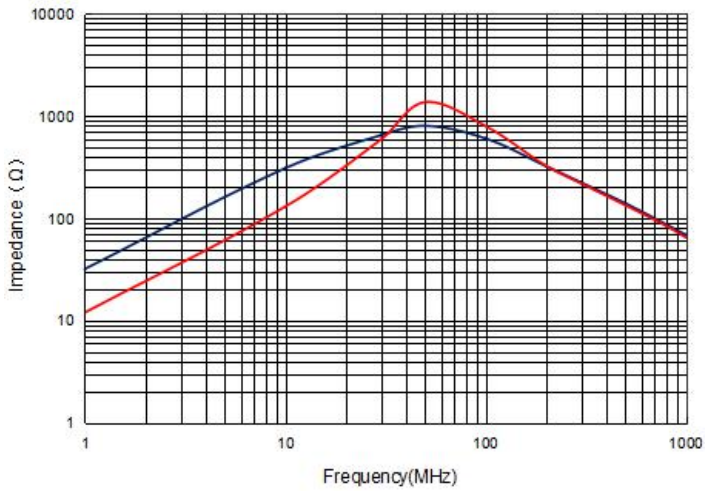
— Common Mode  
— Differential Mode


**ACM1513F-501T100  
ACM1513F-551T100**

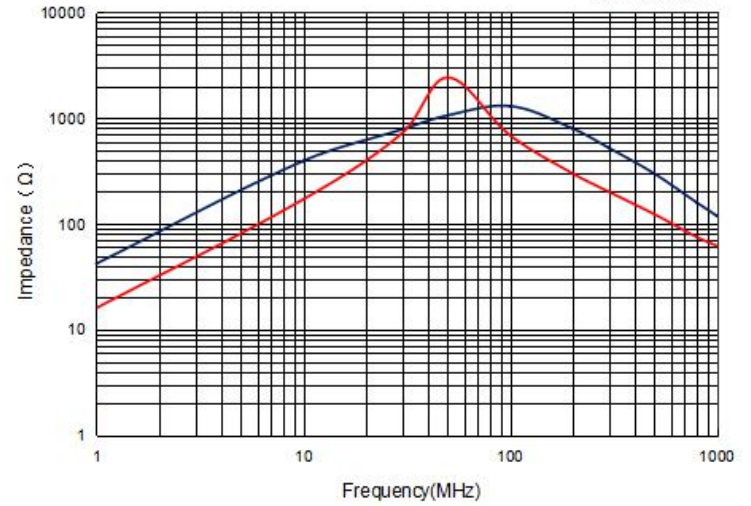
— Common Mode  
— Differential Mode


**ACM1513F-601T100  
ACM1513F-701T100**

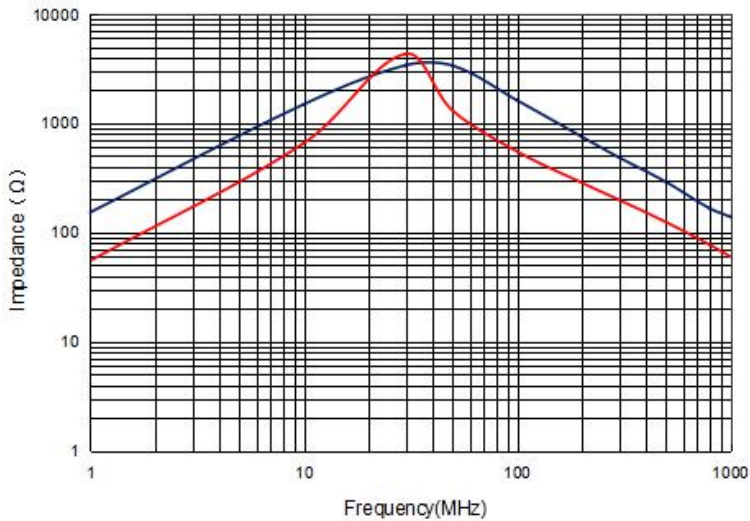
— Common Mode  
— Differential Mode


**ACM1513F-102T90**

— Common Mode  
— Differential Mode


**ACM1513F-152T50**

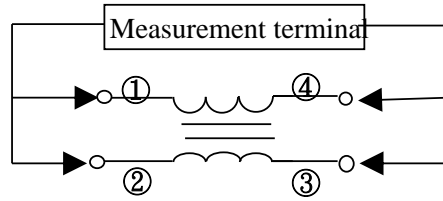
— Common Mode  
— Differential Mode



## TEST EQUIPMENT

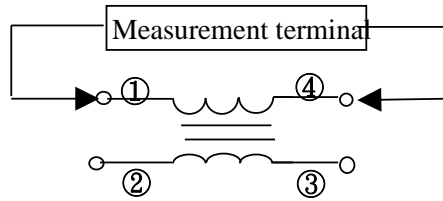
### Impedance

Measured by using HP4291B RF Impedance Analyzer.



### DC Resistance

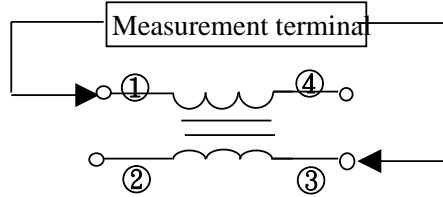
Measured by using Chroma 16502 milliohm meter.



### Insulation Resistance

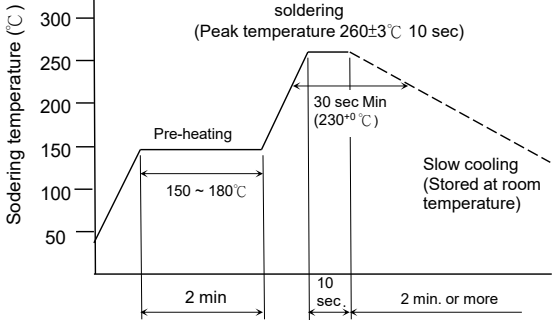
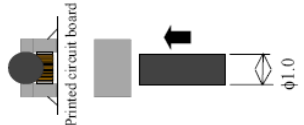
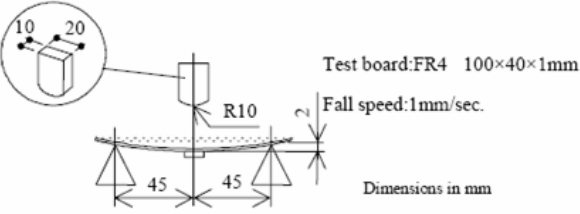
Measured by using Chroma 19073

Measurement voltage : 50v , Measurement time : 60 sec.

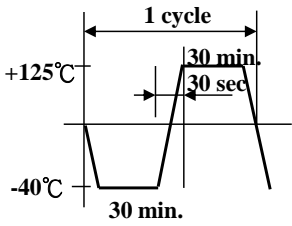


# Reliability Test

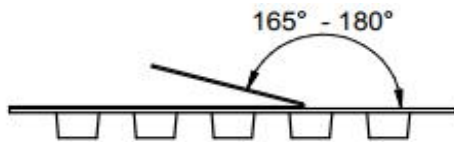
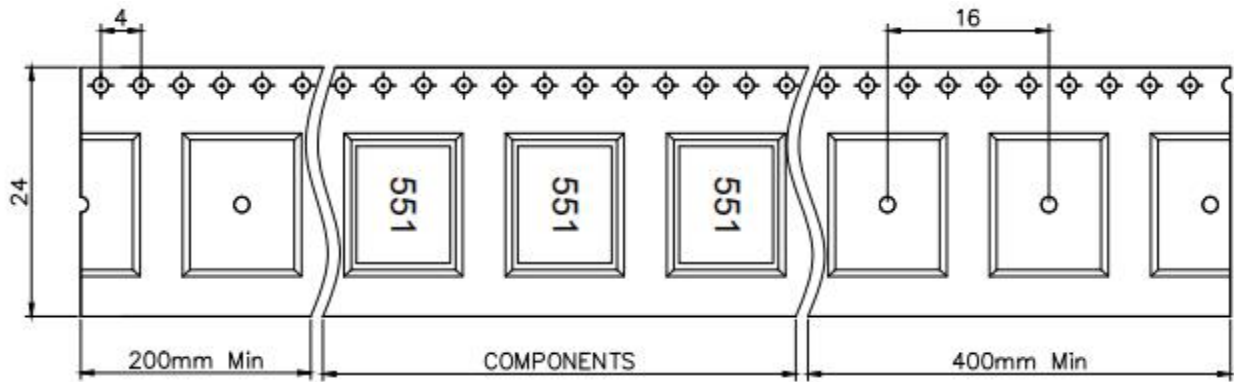
## MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Solder ability	The product shall be connected to the test circuit board by the fillet (the height is 0.2mm).	Apply cream solder to the printed circuit board . Refer to clause 8 for Reflow profile.
Resistance to Soldering heat (reflow soldering)	There shall be no damage or problems.	<p><b>Temperature profile of reflow soldering</b></p>  <p>The specimen shall be passed through the reflow oven with the condition shown in the above profile for 1 time. The specimen shall be stored at standard atmospheric eric conditions for 1 hour, after which the measurement shall be made.</p>
Terminal strength	The terminal electrode and the ferrite must not damaged.	<p>Solder a chip to test substrate , and then laterally apply a load 9.8N in the arrow direction.</p> 
Strength on PC board bending	The terminal electrode and the ferrite must not damaged.	<p>Solder a chip to test substrate and then apply a load.</p>  <p>Test board:FR4 100×40×1mm Fall speed:1mm/sec. Dimensions in mm</p>
High temperature resistance	<p>Impedance:Within±20% of the initial value.</p> <p>Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not damaged.</p>	<p>After the samples shall be soldered onto the test circuit board,the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : +125±2°C</p> <p>Applied voltage : Rated voltage</p> <p>Applied current : Rated current</p> <p>Testing time : 500±12 hours</p>

## MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Humidity resistance	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : <math>+60 \pm 2^\circ\text{C}</math> , Humidity : 90 to 95 %RH</p> <p>Applied voltage : Rated voltage</p> <p>Applied current : Rated current</p> <p>Testing time : <math>500 \pm 12</math> hours</p>
Thermal shock	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	 <p>The diagram illustrates a thermal shock cycle. It starts at a high temperature of <math>+125^\circ\text{C}</math>, where it remains for 30 minutes. This is followed by a 30-second ramp down to a low temperature of <math>-40^\circ\text{C}</math>, where it remains for 30 minutes. The cycle then ramps up for 30 minutes back to <math>+125^\circ\text{C}</math>. The entire sequence is labeled as '1 cycle'.</p>
Low temperature storage	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : <math>-40 \pm 2^\circ\text{C}</math></p> <p>Testing time : <math>500 \pm 12</math> hours</p>
Vibration	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Frequency : 10 to 55 Hz</p> <p>Amplitude : 1.52 mm</p> <p>Dimension and times : X ,Y and Z directions for 2 hours each.</p>
Solderability	<p>New solder More than 75%</p>	<p>Flux (rosin, isopropyl alcohol {JIS-K-1522}) shall be coated over the whole of the sample before hand, the sample shall then be preheated for about 2 minutes in a temperature of <math>130 \sim 150^\circ\text{C}</math> and after it has been immersed to a depth 0.5mm below for <math>3 \pm 0.2</math> seconds fully in molten solder M705 with a temperature of <math>245 \pm 2^\circ\text{C}</math>. More than 75% of the electrode sections shall be covered with new solder smoothly when the sample is taken out of the solder bath.</p>

## Packaging



Tape width	Distance	Pull-of force
24 mm	16 mm	10~120g

## Packing Quantity

350 pcs./reel

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