

# SMD Common Mode Choke - 2012F (USB 2.0)



## Features & Application

2020/1/1

• For common mode noise suppression in high speed differential signal lines: USB2.0, IEEE1394, LVDS.

• Up to 1.0 GHz differential mode 3 dB cutoff frequency

Core material Ferrite

Environmental RoHS compliant, halogen free

Ambient temperature  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  with Irms current

Maximum part temperature  $105^{\circ}\text{C}$  (ambient + temp rise)

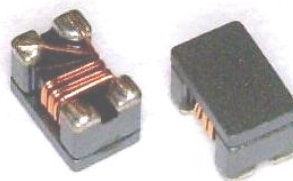
Storage temperature Component:  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$ .

Tape and reel packaging:  $-40^{\circ}\text{C}$  to  $+80$

Resistance to soldering heat Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycle

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at  $<30^{\circ}\text{C}$  /85% relative humidity)

85% relative humidity)

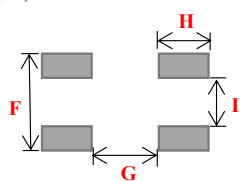
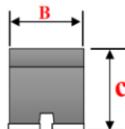
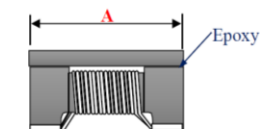


★ When ordering, please check part number

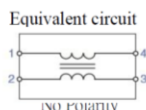
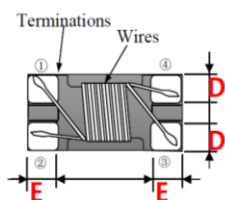
Part number	Impedance( $\Omega$ ) @100MHz $\pm 25\%$	DC Resistance ( $\Omega$ ) max	Irms (mA)
CMC2012F500-0.4AT	50	0.25	400
CMC2012F600-0.4AT	60	0.25	400
CMC2012F670-0.4AT	67	0.25	400
CMC2012F900-0.4AT	90	0.30	400
CMC2012F121-0.35AT	120	0.30	350
CMC2012F161-0.35AT	160	0.30	350
CMC2012F181-0.33AT	180	0.35	330
CMC2012F221-0.33AT	220	0.35	330
CMC2012F261-0.3AT	260	0.40	300
CMC2012F371-0.28AT	370	0.40	280
CMC2012F801-0.28AT	800	0.95	280

Isolation (Vrms) : 250V.

Winding to winding isolation (hipot) tested for one minute.



Recommended Land Pattern



Dimensions	
A	2.00 $\pm$ 0.2
B	1.20 $\pm$ 0.2
C	1.20 $\pm$ 0.2
D	0.40 typ
E	0.45 typ
F	1.20 typ
G	0.80 typ
H	0.90 typ
I	0.40 typ
unit : mm	

Impedance/Inductance/Q/ LCR Angilent E4991A

Resistance DC Chroma 16502

Current per winding that causes a  $20^{\circ}\text{C}$  rise from  $25^{\circ}\text{C}$  ambient

Electrical specifications at  $25^{\circ}\text{C}$

Weight 11.3 – 13.6 mg.

Packaging 2000/7 " reel; Plastic tape: 8 mm wide.

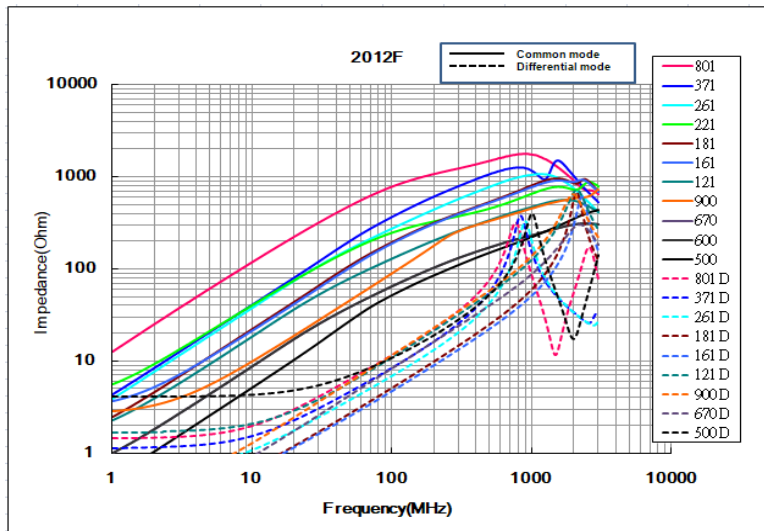
Packaging will different, according to the various chip size.

Contact Us	
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Official Website :	
<a href="https://www.bing-ri.com.tw/">https://www.bing-ri.com.tw/</a>	

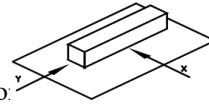
## Typical Impedance vs Frequency

### Common Mode & Differential mode

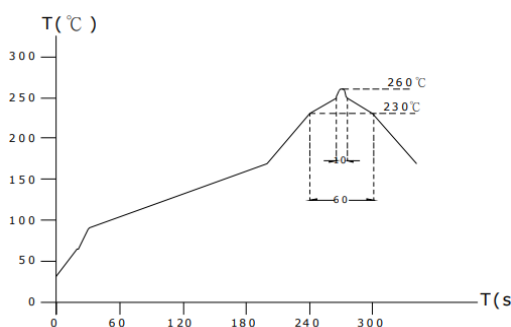


### GENERAL CHARACTERISTICS

1. Operating temperature range:  $-40$  TO  $+125^{\circ}\text{C}$  (Includes temperature when the coil is heated)
2. External appearance: On visual inspection, the coil has no external defects.
3. Terminal strength: After soldering. Between copper plate and terminals of coil. Push in two directions of X.Y withstanding at below conditions.  
Terminal should not peel off. (refer to figure at right) 0.5kg Min –2012
4. Insulating resistance: Over  $100\text{M}\Omega$  at  $100\text{V D.C.}$  between coil and co.
5. Dielectric strength: No dielectric breakdown at  $100\text{V D.C.}$  for 1 minute between coil and core
6. Temperature characteristics: Inductance coefficient  $(0\sim 2,000)\times 10^{-6}/(^{\circ}\text{C } -25\sim +80)$ .  $^{\circ}\text{C}$  , inductance deviation within  $\pm 5.0\%$ , after 96 hours.
7. Humidity characteristics (Moisture Resistance): Inductance deviation within  $\pm 5\%$ , after 96 hours in  $90\sim 95\%$  relative humidity at  $40 \pm 2$  and 1 hour drying under normal condition.
8. Vibration resistance: Inductance deviation within  $\pm 5\%$ , after vibration for 1 hour. In each of three orientations at sweep vibration ( $10\sim 55\sim 10\text{ Hz}$ ) with  $1.5\text{mm P-P}$  amplitudes.
9. Shock resistance: Inductance deviation within  $\pm 5\%$ , after being dropped once with  $981\text{m/s}^2$  ( $100\text{G}$ ) shock attitude upon a rubber block method shock testing machine, in three different
10. Resistance to Soldering Heat: 260 , 10 seconds (See attached recommend reflow)
11. Storage environment: Storage condition: Temperature Range:  $10 \sim 35$  (Generally:  $21 \sim 31$ ) , Humidity Range:  $50\% \sim 80\% \text{ RH}$  (Generally:  $65\% \sim 75\%$ ) ; Transportation condition: Temperature Range:  $-35 \sim 85$  , Humidity Range:  $50\% \sim 95\% \text{ RH}$
12. Use components within 12 months. If 12 months or more have elapsed, check solderability before use.
13. Reflow profile recommend:



#### Lead-free heat en duran ce test



#### Lead-free the recommended reflow condition

