Data Sheet

Customer:	
Product:	**Automotive Grade Wire Wound Common Mode Filter–CFH..A series**
Sizes.:	**1210/1812**
Issued Date:	**10-Apr-25**
Edition:	**REV.A2**

RoHS Compliant

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10-Apr-25	10-Apr-25	10-Apr-25	10-Apr-25	
Mandy Chang	*Ben Chang*	*Ben Chang*		

Automotive Grade Wire Wound Common Mode Filter



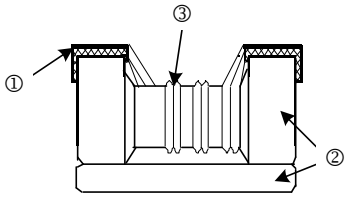
■Features

- High common mode impedance at high frequency effects excellent noise suppression performance
- Small sizes and low profile
- 100% Lead(Pb) & Halogen-Free and RoHS compliant
- AEC-Q200 Compliance

■Applications

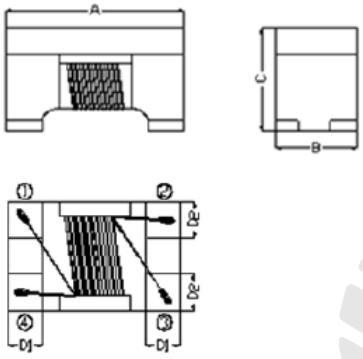
- DSI / BST / CAN-Bus / Flex-Ray

■Construction

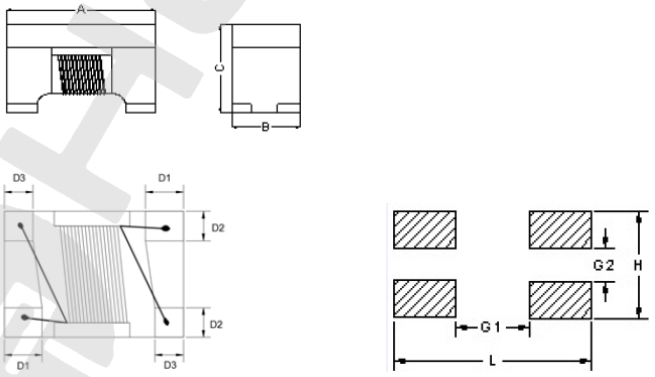


①	Terminal	②	Ferrite	③	Enameled Copper Wire

■Dimensions



1210



1812

Unit : mm

Type	Size (Inch)	A	B	C	D1	D2	D3	L	H	G1	G2
CFH10	1210	3.3±0.2	2.5±0.2	2.5 max	0.55±0.15	0.75±0.2	—	3.7	2.8	2.4	1.2
CFH12	1812	4.5±0.2	3.2±0.2	2.8±0.2	0.75±0.2	0.85±0.2	0.60±0.2	5.0	3.6	3.4	1.7

■Part Numbering

CF	H	10	O	T	110	A
Product Type	Shielding Type	Dimensions	Inductance Tolerance	Packaging Code	Inductance	Function Code
	H: Shielding	10: 1210 12: 1812	O: +50/-30%	T: Taping Reel	110: 11uH 220: 22uH 510: 51uH 101: 100uH	A: Automotive Grade

■Standard Electrical Specifications

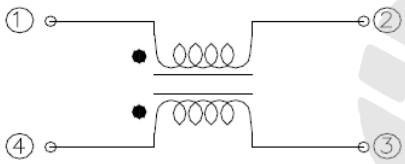
CFH10 / Standard Type

Part No.	Impedance(Ω) @10MHz		Inductance(uH) @100KHz, 0.1V	Inductance Tolerance	DCR (Ω) max.	IDC (mA) max.	Rated Voltage Vdc (V) typ.	Insulation Resistance (MΩ) min.
	min.	typ.						
CFH10OT110A	300	550	11	+50/-30%	0.4	300	80	10
CFH10OT220A	500	1100	22	+50/-30%	0.5	250	80	10
CFH10OT510A	1000	2600	51	+50/-30%	0.7	200	80	10
CFH10OT101A	2200	5100	100	+50/-30%	1.5	150	80	10

CFH12 / Standard Type

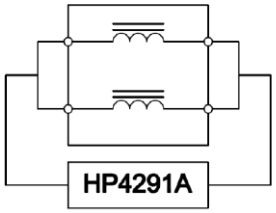
Part No.	Impedance(Ω) @10MHz		Inductance(uH) @100KHz, 0.1V	Inductance Tolerance	DCR (Ω) max.	IDC (mA) max.	Rated Voltage Vdc (V) typ.	Insulation Resistance (MΩ) min.
	min.	typ.						
CFH12OT110A	300	600	11	+50/-30%	0.6	360	50	10
CFH12OT220A	500	1200	22	+50/-30%	1.0	310	50	10
CFH12OT510A	1000	2800	51	+50/-30%	1.0	230	50	10
CFH12OT101A	2000	5800	100	+50/-30%	2.0	200	50	10

■Schematic Diagram

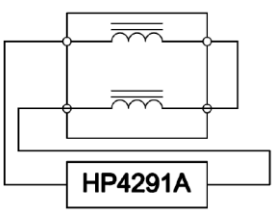


■Measuring Circuits 2Line

Common mode

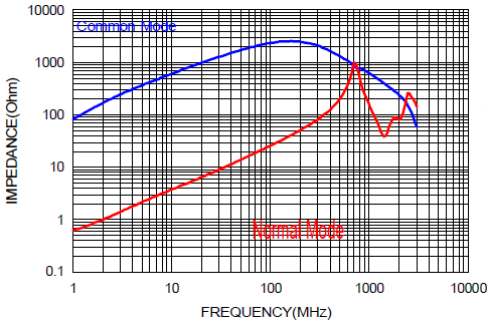


Differential mode

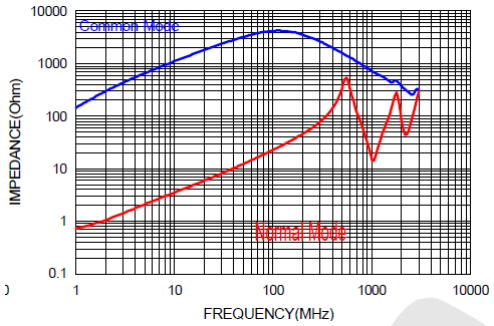


Characteristics (Impedance vs. Frequency)-CFH10

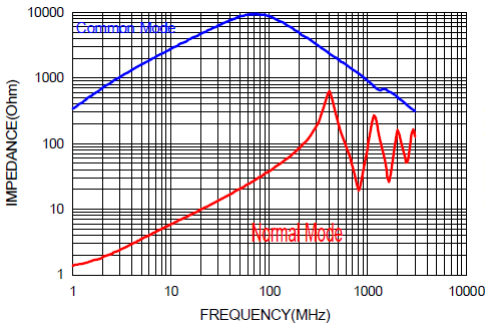
CFH10OT110A



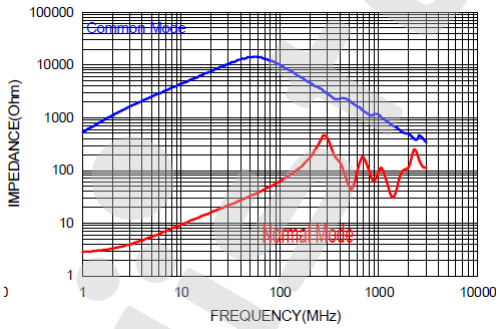
CFH10OT220A



CFH10OT510A

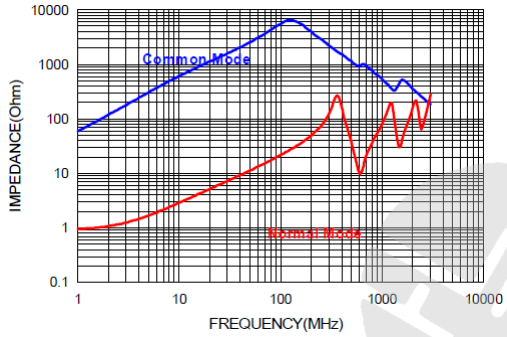


CFH10OT101A

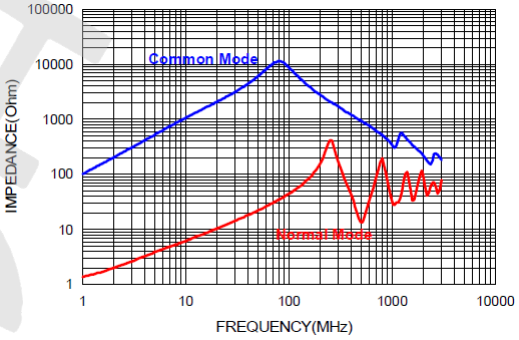


Characteristics (Impedance vs. Frequency)-CFH12

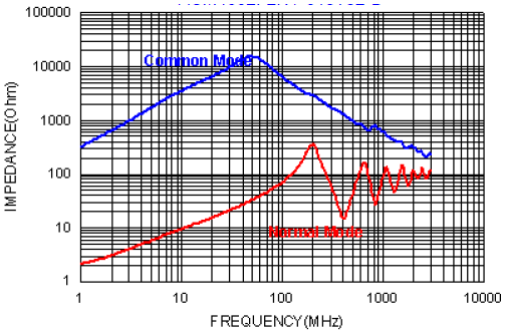
CFH12OT110A



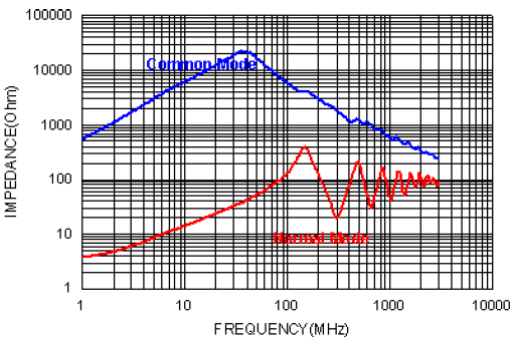
CFH12OT220A



CFH12OT510A



CFH12OT101A

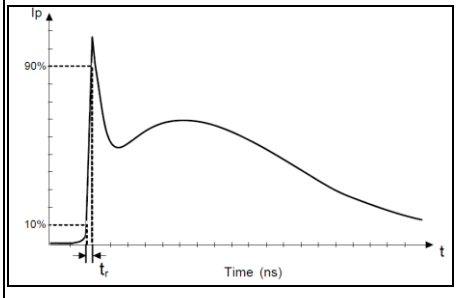


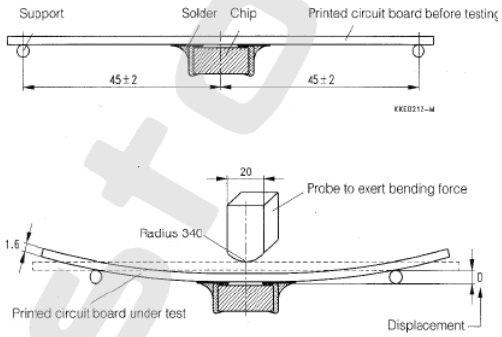
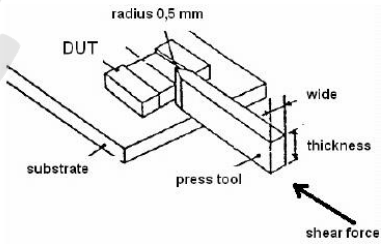
■Environmental Characteristics

Electrical Performance Test

Items	Requirement	Test Methods
Inductance	Refer to standard electrical characteristic spec. Component should not be damaged	LCR Meter HP 4291A+16197A
DC Resistance DCR		Agilent-4338B
Insulation Resistance (I.R)		Agilent-4339
Temperature Rise Test	Rated current<1A △T20℃ max Rated current>1A △T40℃ max	Applied the allowed DC current Temperature measured by digital surface thermometer

Mechanical Performance Test

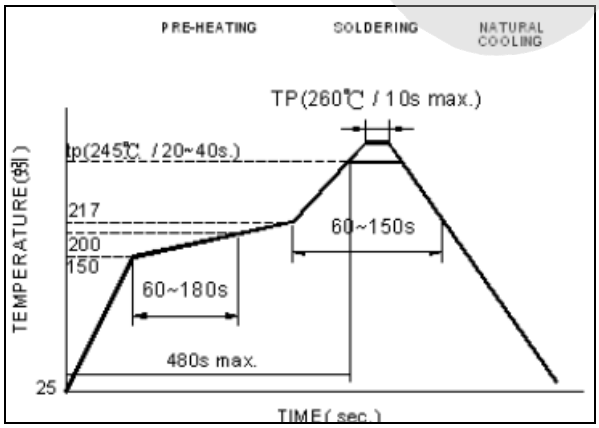
Items	Requirement	Test Methods
High Temperature Exposure	Appearance: No damage Impedance: Within±15% of initial value Inductance: Within±10% of initial value RDC: Within±15% of initial value and Shall not exceed the specification value	at +150℃ for 1000 hrs Measured at room temperature after placing for 24±2 hrs
Temperature Cycling		-55℃ to +150℃, 1000 hrs Measured at room temperature after placing for 24±2 hrs
Moisture Resistance		1.Baked at50℃ for 25hrs, measured at room temperature after placing for 4 hrs. 2.Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs. 3.Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs,keep at 25℃ for 2hrs then keep at -10℃ for 3hrs 4.Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Biased Humidity		1000 hrs 85℃/85%RH 100% rated current Measured at room temperature after placing for 24±2 hrs
Operational Life		at +150℃ for 1000 hrs with 100% rated current Measured at room temperature after placing for 24±2 hrs
External Visual	Appearance：No damage	Inspect device construction, marking and workmanship. Electrical Test not required.
Physical Dimension	According to the product specification size measurement	According to the product specification size measurement
Resistance to Solvents	Appearance: No damage	Add aqueous wash chemical - OKEM clean or equivalent
Mechanical Shock	Appearance: No damage Impedance: Within±15% of initial value Inductance: Within±10% of initial value RDC: Within±15% of initial value and Shall not exceed the specification value	Wave form: sine shock Peak value is 100g's. Normal duration (D) is 6ms shocks in each direction along 3 perpendicular axes.
Vibration		Oscillation Frequency: 10～2K～10Hz for 20 minute Equipment： Vibration checker Total Amplitude:1.52mm±10% Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)
Resistance to Soldering Heat		260±5℃ for 10±1 seconds
Thermal shock		-55℃ to +150℃, 300 cycles Measured at room temperature after placing for 24±2 hrs
ESD	Appearance: No damage	

Items	Requirement	Test Methods
Solderability	95% min. coverage	Steam Aging: 8 hours ± 15 min, Preheat: 150℃,60sec. Solder: Sn96.5% Ag3% Cu0. 5%, Temperature: 245±5℃。 Flux for lead free: Rosin. 9.5%, Dip time: 4±1sec. Depth: completely cover the termination
Electrical Characterization	Refer Specification for Approval	Summary to show Min, Max, Mean and Standard deviation
Flammability	Electrical Test not required	V-0 or V-1 are acceptable
Board Flex	Appearance：No damage	Place the 100mm X 40mm board into a fixture similar to the one shown in below Figure with the component facing down. The apparatus shall consist of mechanical means to apply a force which will bend the board (D) x = 2 mm minimum. The duration of the applied forces shall be 60 (+ 5) sec. The force is to be applied only once to the board 
Terminal Strength(SMD)	Appearance：No damage	With the component mounted on a PCB with the device to be tested, apply a 17.7 N (1.8 Kg) force to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested 

■Storage Temperature: 15~28°C; Humidity < 80%RH

■Shelf life: 1 years Max

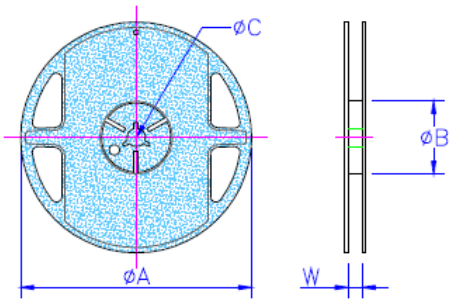
The condition of reflow (recommendation):



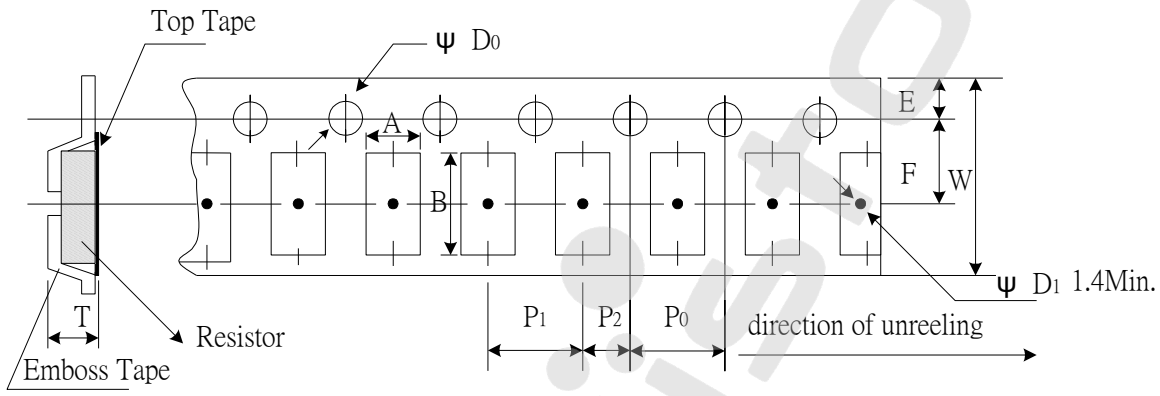
■Packaging

Packaging Quantity & Reel Specifications

Type	ΦA	ΦB	ΦC	W	Quantity (EA)
CFH10	178±2.0	60±2.0	13.5±0.5	9±0.5	2000
CFH12	178±2.0	60±2.0	13.5±0.5	9±0.5	500



Embossed Plastic Tape Specifications



Unit: mm

Type	A	B	W	E	F	P0	P1	P2	ΦD0	T
CFH10	2.88±0.10	3.65±0.10	8.0±0.10	1.75±0.10	3.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.50+0.10	2.76±0.10
CFH12	3.60±0.10	4.90±0.10	12.0±0.10	1.75±0.10	5.5±0.05	4.00±0.10	8.00±0.10	2.00±0.05	1.50+0.10	3.26±0.10

Peel-off Force

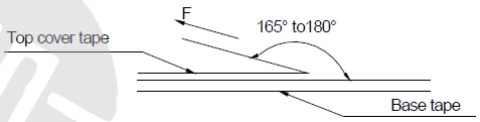
The force for tearing off cover tape is 15~80g in the arrow direction at the following conditions:

Temperature: 5 ~ 35°C

Humidity: 45 ~ 85%

Atmospheric pressure: 860 ~ 1060hpa

Tearing speed: 300mm min



REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A2	Apr 10,2025		-Add Shelf life.