THE DATASHEET OF

WCM 2012F2SF-161T03

Wire Wound Type Common Mode Filter

WCM1210F2SF-SERIES

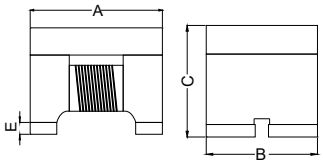
1. Features

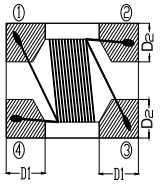
1. High common mode impedance at high frequency cause excellent noise suppression performance.
2. WCM1210F2SF series realizes small size and low profile. 1.2x1.0x0.9 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature-40~+125℃ (Including self - temperature rise)

Halogen-free

RoHS

2. Dimension





Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E(mm)
1210F2SF	1.2±0.2	1.0±0.2	0.9 max.	0.35±0.1	0.35±0.1	0.03 min.

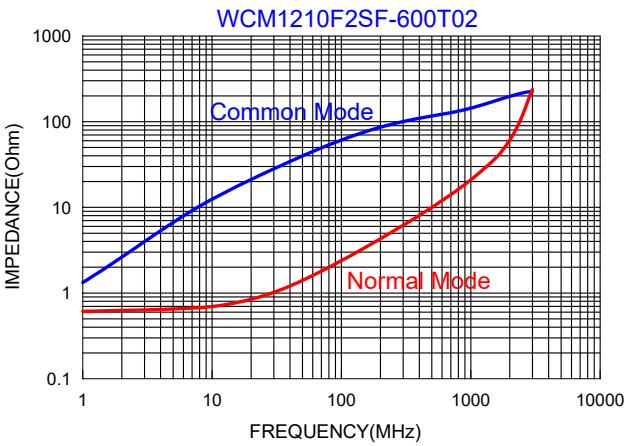
3. Part Numbering

WCM	1210	F	2	S	F	-	900	T	02
A	B	C	D	E	F		G	H	I

A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free
G: Impedance 900=90Ω
H: Packaging T=Taping and Reel
I: Rated Current 02=250mA

4. Specification

TAI-TECH Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA)max.	Rated Volt. (Vdc) max.	Withstand Volt. (Vdc) max.	IR (Ω) min.
WCM1210F2SF-600T02	60±25%	100	0.30	250	50	125	10M
WCM1210F2SF-900T02	90±25%	100	0.30	250	50	125	10M
WCM1210F2SF-121T02	120±25%	100	0.35	250	50	125	10M
WCM1210F2SF-161T01	160±25%	100	0.43	160	50	125	10M
WCM1210F2SF-201T01	200±25%	100	0.80	120	50	125	10M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Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
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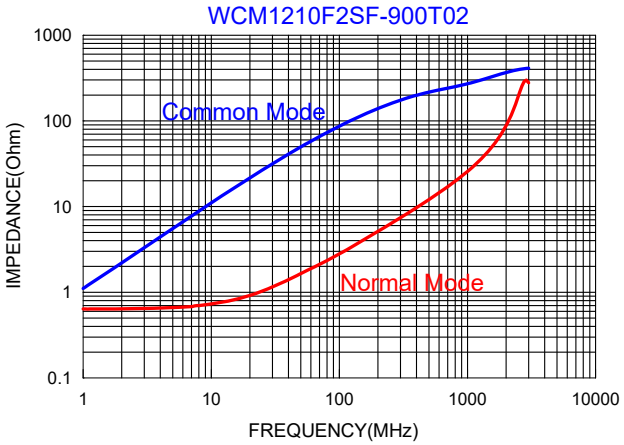
100
10
1
0.1
1
10
100
1000
10000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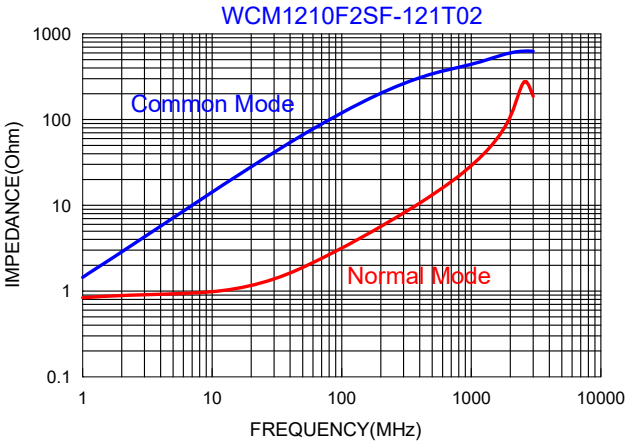
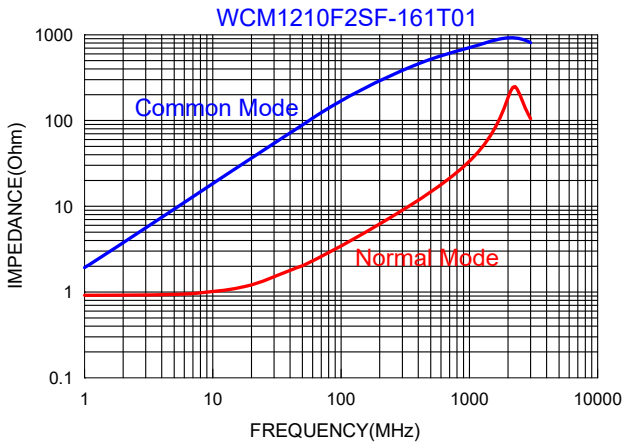
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000


WCM1210F2SF-121T02
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000


WCM1210F2SF-161T01
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
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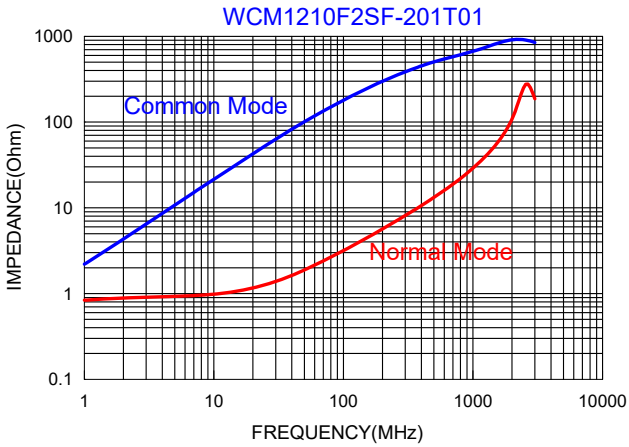
100
10
1
0.1
1
10
100
1000
10000


WCM1210F2SF-201T01
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000

Wire Wound Type Common Mode Filter WCM1608F2SNF-SERIES

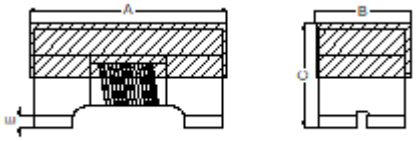
1. Features

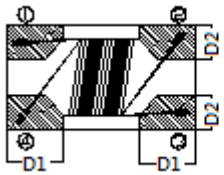
1. High common mode impedance at high frequency cause excellent noise suppression performance.
2. WCM1608F2SNF series realizes small size and low profile. 1.6x0.8x1.1 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature-40~+125℃ (Including self - temperature rise)

Halogen-free

RoHS

2. Dimension





Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E(mm)
1608F2SNF	1.60±0.15	0.85±0.15	1.10±0.15	0.30Typ.	0.30Typ.	0.03 min.

3. Part Numbering

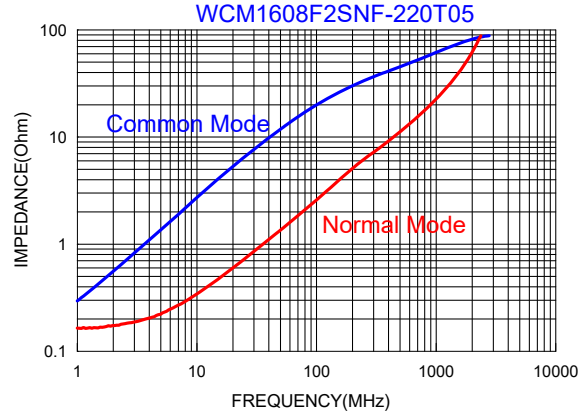
WCM	1608	F	2	SN	F	-	900	T	05
A	B	C	D	E	F		G	H	I

A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free
G: Impedance 900=90Ω
H: Packaging T=Taping and Reel
I: Rated Current 05=550mA

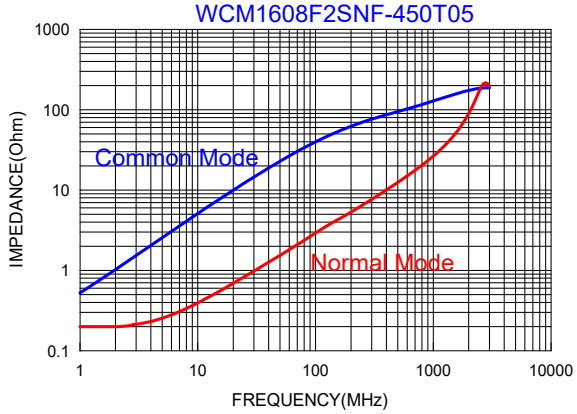
4. Specification

TAI-TECH Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA)max.	Rated Volt. (Vdc) max.	Withstand Volt. (Vdc) max.	IR (Ω) min.
WCM1608F2SNF-220T05	22±25%	100	0.080	500	50	125	10M
WCM1608F2SNF-450T05	45±25%	100	0.110	500	50	125	10M
WCM1608F2SNF-900T05	90±25%	100	0.145	550	50	125	10M
WCM1608F2SNF-121T05	120±25%	100	0.175	500	50	125	10M
WCM1608F2SNF-181T05	180±25%	100	0.210	500	50	125	10M
WCM1608F2SNF-251T04	250±25%	100	0.280	400	50	125	10M

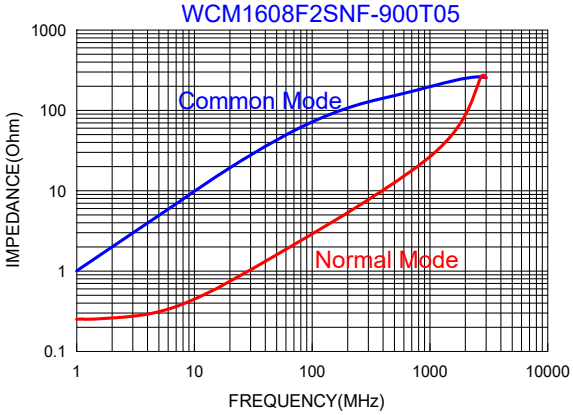
WCM1608F2SNF-220T05



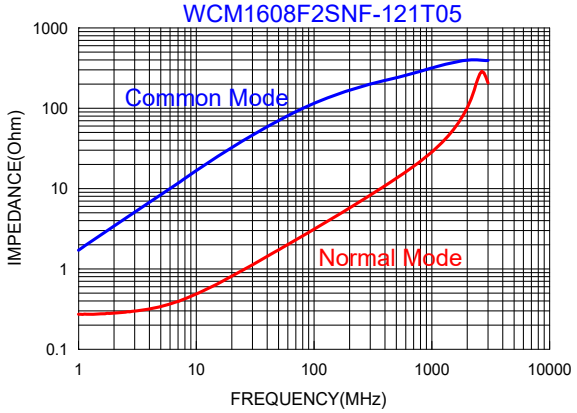
WCM1608F2SNF-450T05



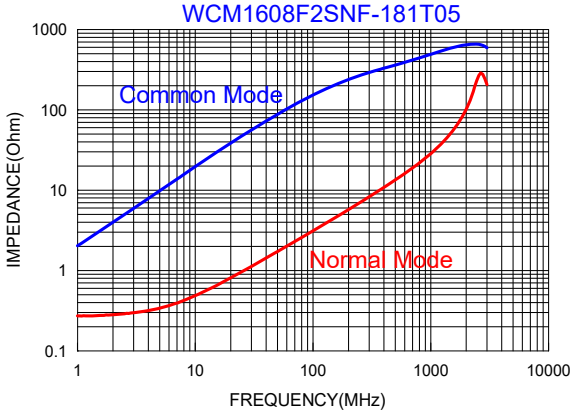
WCM1608F2SNF-900T05



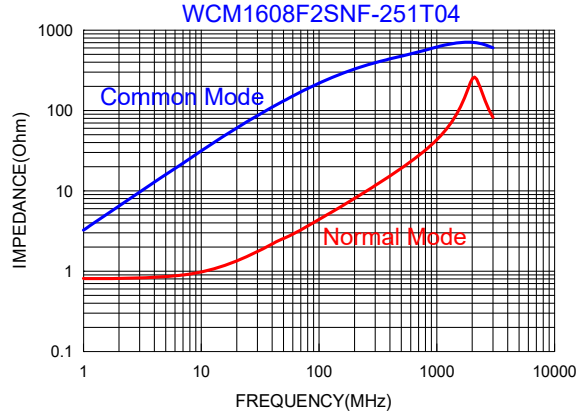
WCM1608F2SNF-121T05



WCM1608F2SNF-181T05



WCM1608F2SNF-251T04



Wire Wound Type Common Mode Filter

WCM2012F2SF-SERIES

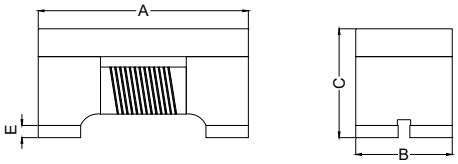
1. Features

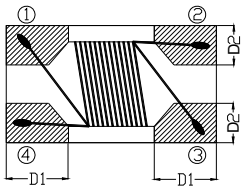
1. High common mode impedance at high frequency cause excellent noise suppression performance.
2. WCM2012F2SF series realizes small size and low profile. 2.0x1.2x1.2 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature -40~+125℃ (Including self - temperature rise)

Halogen-free

RoHS

2. Dimension





Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E(mm)
2012F2SF	2.0±0.2	1.2±0.2	1.2±0.2	0.50±0.1	0.51±0.1	0.15±0.1

3. Part Numbering

WCM	2012	F	2	S	F	-	900	T	04
A	B	C	D	E	F		G	H	I

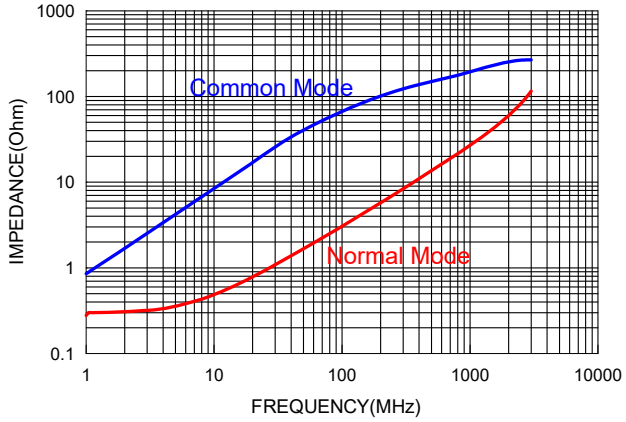
A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free
G: Impedance 900=90Ω
H: Packaging T=Taping and Reel
I: Rated Current 04=400mA

4. Specification

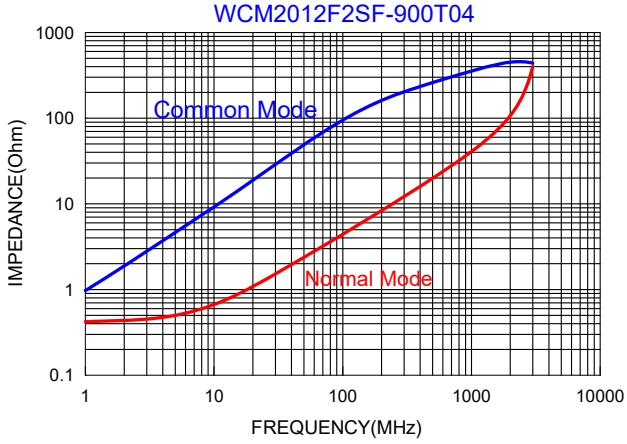
TAI-TECH Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA)max.	Rated Volt. (Vdc)max.	Withstand Volt. (Vdc) max.	IR (Ω) min.
WCM2012F2SF-670T04	67±25%	100	0.25	400	50	125	10M
WCM2012F2SF-900T04	90±25%	100	0.30	400	50	125	10M
WCM2012F2SF-121T04	120±25%	100	0.30	400	50	125	10M
WCM2012F2SF-161T03	160±25%	100	0.35	350	50	125	10M
WCM2012F2SF-181T03	180±25%	100	0.35	350	50	125	10M
WCM2012F2SF-201T03	200±25%	100	0.40	300	50	125	10M
WCM2012F2SF-221T03	220±25%	100	0.40	300	50	125	10M
WCM2012F2SF-261T03	260±25%	100	0.40	300	50	125	10M
WCM2012F2SF-361T03	360±25%	100	0.50	300	50	125	10M

Typical Impedance v.s. Frequency Curve

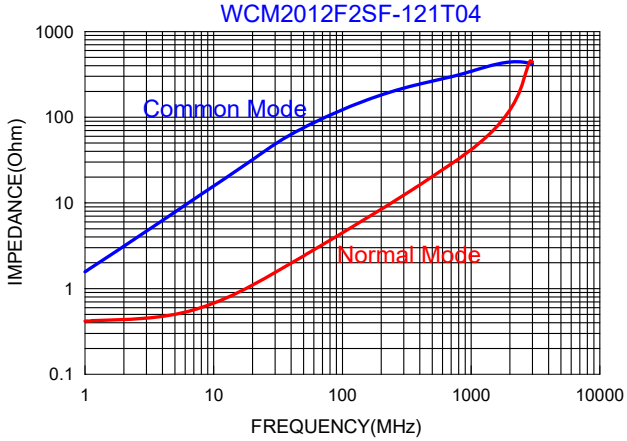
WCM2012F2SF-670T04



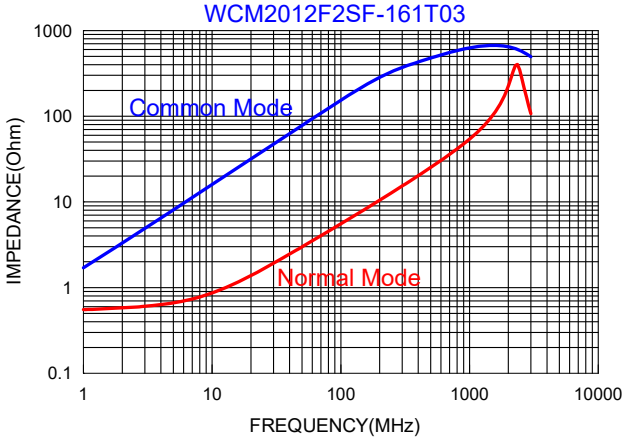
WCM2012F2SF-900T04



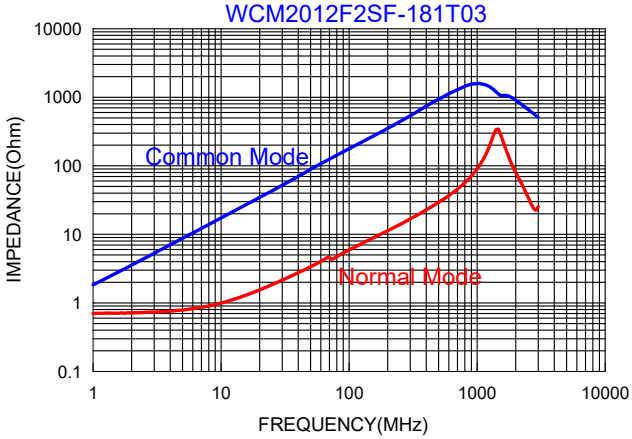
WCM2012F2SF-121T04



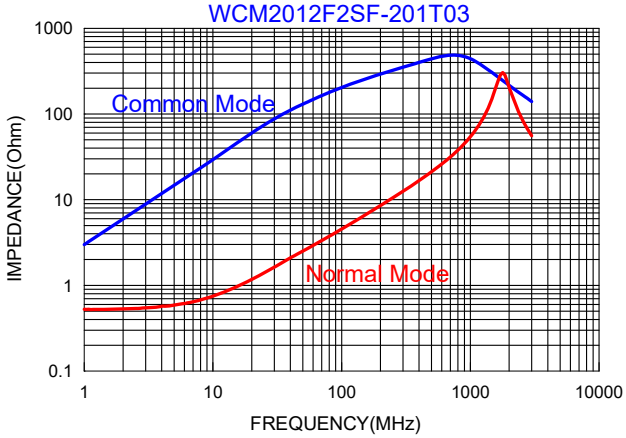
WCM2012F2SF-161T03



WCM2012F2SF-181T03



WCM2012F2SF-201T03



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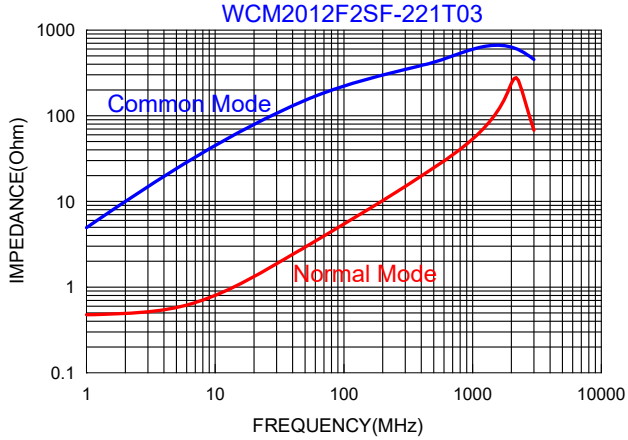
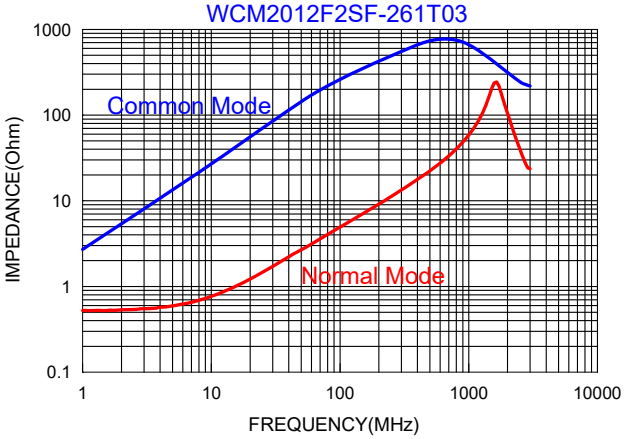
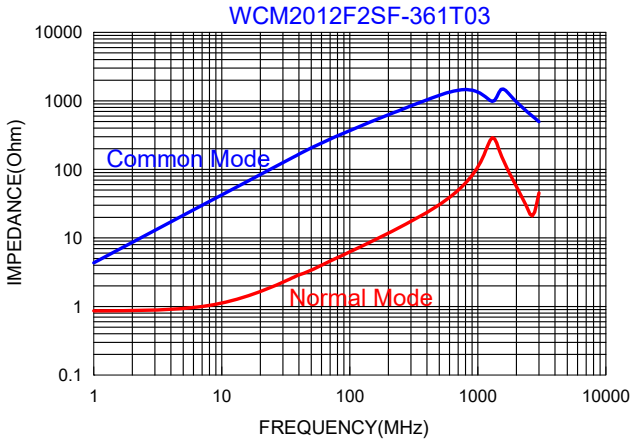


WCM2012F2SF-261T03





3. Part Numbering

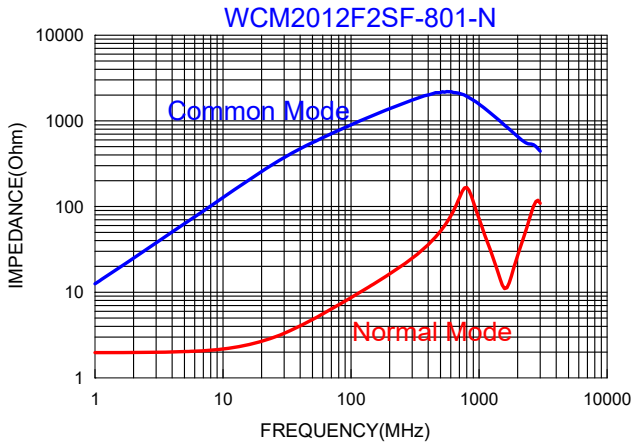
WCM	2012	F	2	S	F	-	801	-	N
A	B	C	D	E	F		G		H

A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free
G: Impedance 801=800Ω
H: Category Code N=DR-N45 材&SP-N45 材

4. Specification

TAI-TECH Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA)max.	Rated Volt. (Vdc)max.	Withstand Volt. (Vdc) max.	IR (Ω) min.
WCM2012F2SF-801-N	800±25%	100	0.88	300	50	125	10M

Typical Impedance v.s. Frequency Curve



Wire Wound Type Common Mode Filter

WCM3216F2SF-SERIES

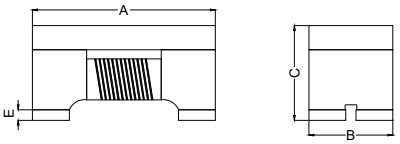
1. Features

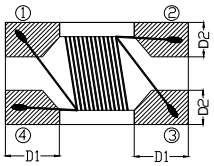
1. High common mode impedance at high frequency cause excellent noise suppression performance.
2. WCM3216F2SF series realizes small size and low profile. 3.2x1.6x2.0 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature-40~+125℃ (Including self - temperature rise)

Halogen-free

RoHS

2. Dimension





Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E(mm)
3216F2SF	3.2±0.2	1.6±0.2	2.0±0.2	0.5±0.1	0.5±0.1	0.15±0.1

Units: mm

3. Part Numbering

WCM	3216	F	2	S	F	-	900	T	04
A	B	C	D	E	F		G	H	I

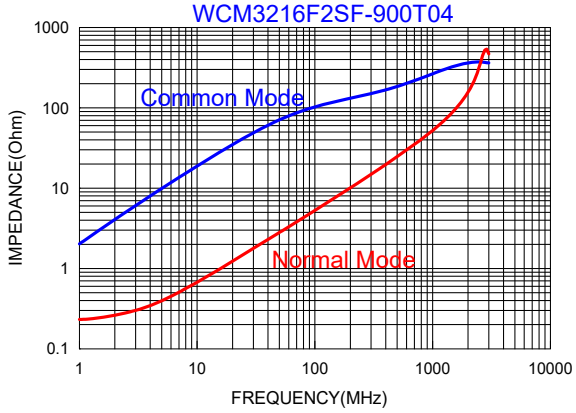
A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free type
G: Impedance 900=90Ω
H: Packaging T=Taping and Reel
I: Rated Current 04=400mA

4. Specification

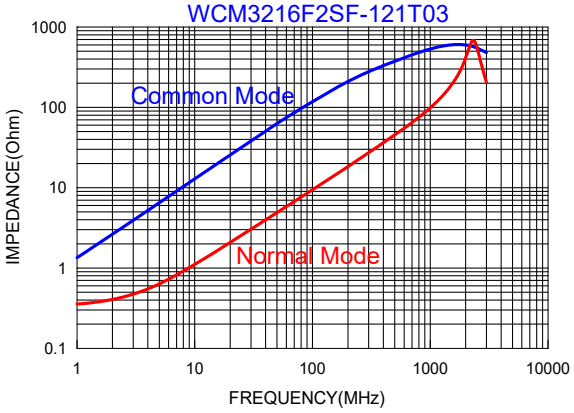
TAI-TECH Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA)max.	Rated Volt. (Vdc)max.	Withstand Volt. (Vdc) Max.	IR (Ω) min.
WCM3216F2SF-900T04	90±25%	100	0.30	400	50	125	10M
WCM3216F2SF-121T03	120±25%	100	0.30	350	50	125	10M
WCM3216F2SF-161T03	160±25%	100	0.40	350	50	125	10M
WCM3216F2SF-221T03	220±25%	100	0.45	300	50	125	10M
WCM3216F2SF-261T03	260±25%	100	0.50	300	50	125	10M
WCM3216F2SF-361T03	360±25%	100	0.60	300	50	125	10M
WCM3216F2SF-601T03	600±25%	100	0.80	300	50	125	10M
WCM3216F2SF-102T02	1000±25%	100	1.00	200	50	125	10M
WCM3216F2SF-222T02	2200±25%	100	1.20	200	50	125	10M

Typical Impedance v.s. Frequency Curve

WCM3216F2SF-900T04



WCM3216F2SF-121T03



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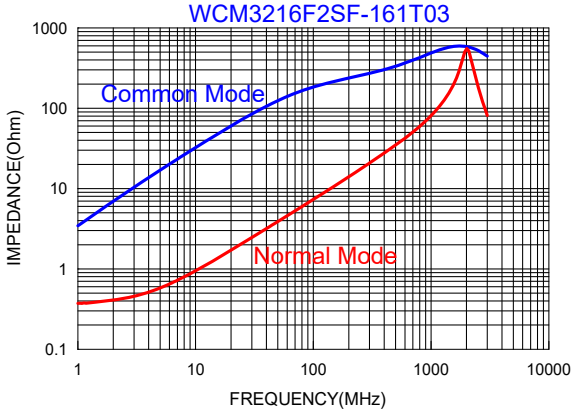
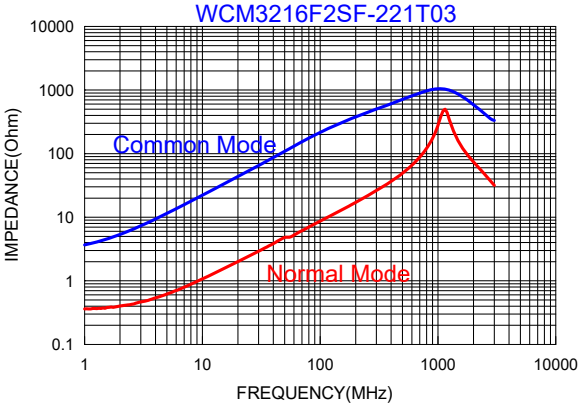
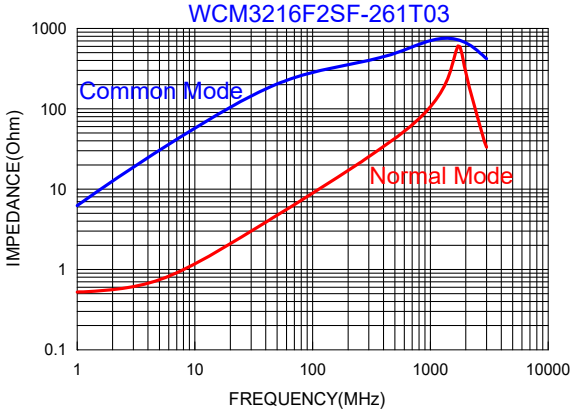


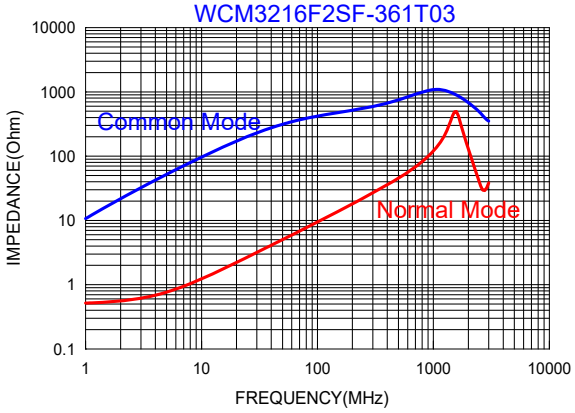
WCM3216F2SF-221T03



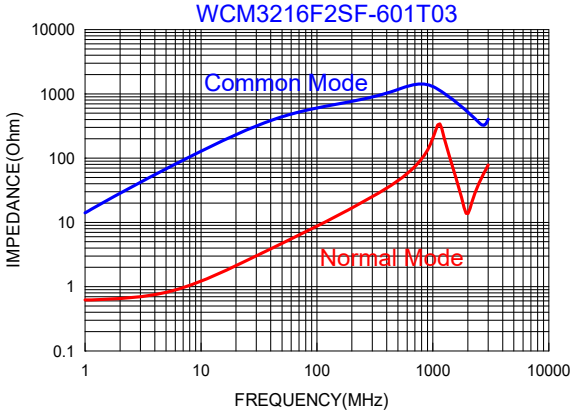
WCM3216F2SF-261T03



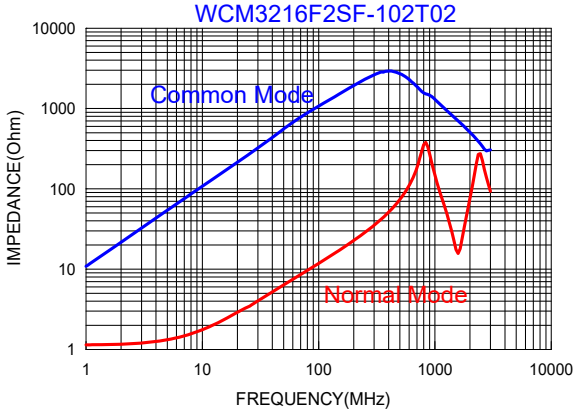
WCM3216F2SF-361T03

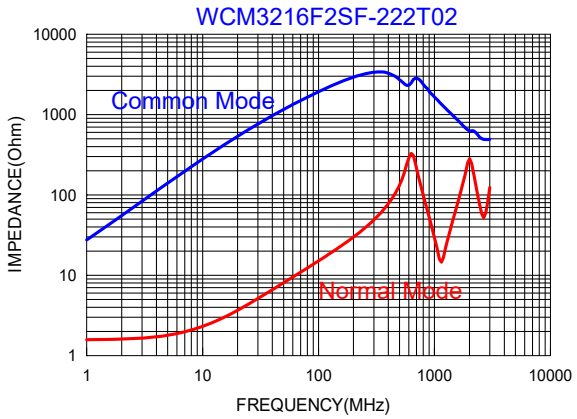


WCM3216F2SF-601T03



WCM3216F2SF-102T02




WCM3216F2SF-222T02
10000
1000
100
10
1
IMPEDANCE(Ohm)
Common Mode
Normal Mode
1
10
100
1000
10000
FREQUENCY(MHz)

Wire Wound Type Common Mode Filter WCM3225F2SF-SERIES

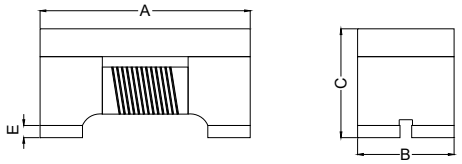
1. Features

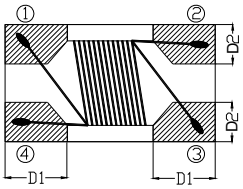
1. High common mode impedance at high frequency cause excellent noise suppression performance.
2. WCM3225F2SF series realizes small size and low profile. 3.2x2.5x2.2 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature-40~+125℃ (Including self - temperature rise)

Halogen-free

RoHS

2. Dimension





Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E(mm)
3225F2SF	3.2±0.2	2.5±0.2	2.2±0.2	0.8±0.1	0.9±0.1	0.15±0.1

Units: mm

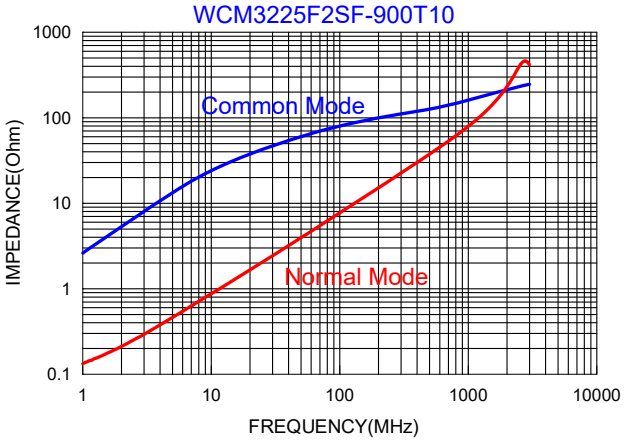
3. Part Numbering

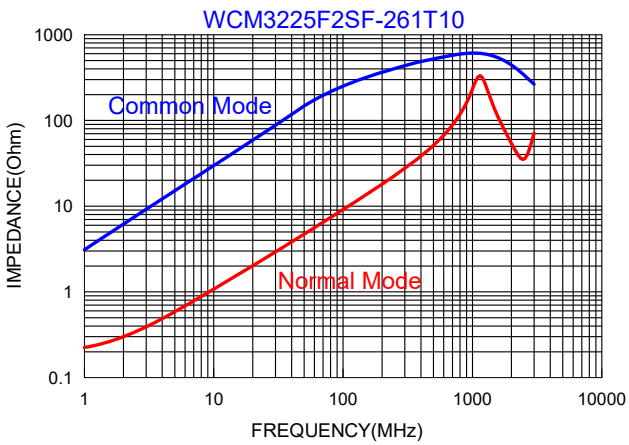
WCM	3225	F	2	S	F	-	102	T	04
A	B	C	D	E	F		G	H	I

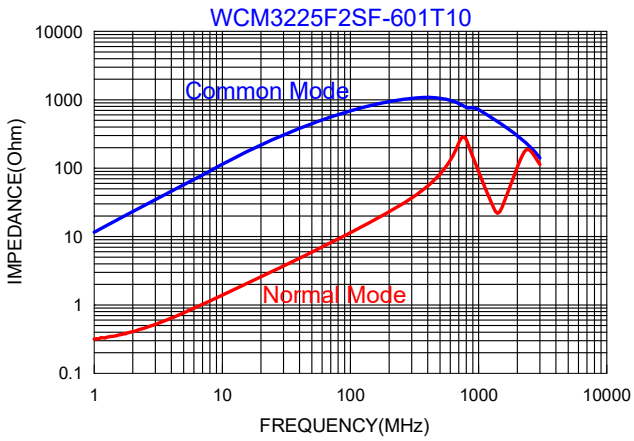
A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free type
G: Impedance 102=1000Ω
H: Packaging T=Taping and Reel
I: Rated Current 04=400mA

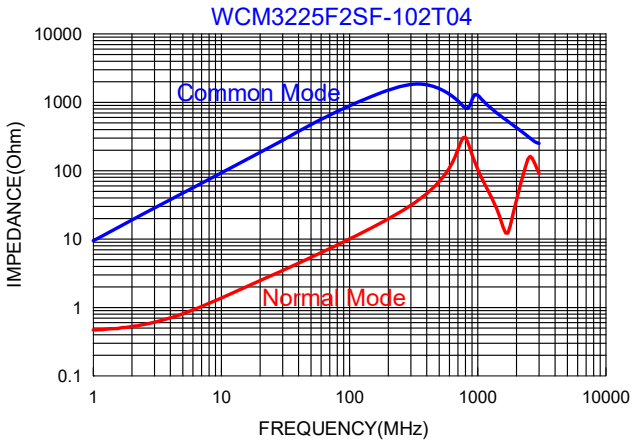
4. Specification

TAI-TECH Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA)max.	Rated Volt. (Vdc)max.	Withstand Volt. (Vdc) max.	IR (Ω) min.
WCM3225F2SF-900T10	90±25%	100	0.050	1000	50	125	10M
WCM3225F2SF-261T10	260±25%	100	0.15	1000	50	125	10M
WCM3225F2SF-601T10	600±25%	100	0.20	1000	50	125	10M
WCM3225F2SF-102T04	1000±25%	100	0.30	400	50	125	10M


WCM3225F2SF-900T10
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000


WCM3225F2SF-261T10
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000


WCM3225F2SF-601T10
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
10000
1000
100
10
1
0.1
1
10
100
1000
10000


WCM3225F2SF-102T04
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
10000
1000
100
10
1
0.1
1
10
100
1000
10000

Wire Wound Type Common Mode Filter

WCM4532F2SF-SERIES

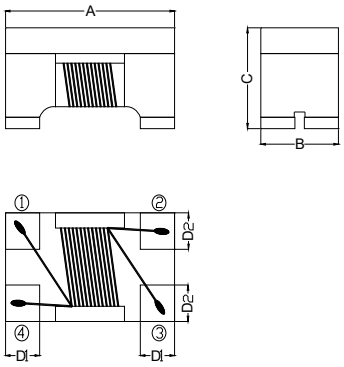
1. Features

1. High common mode impedance at high frequency cause excellent noise suppression performance.
2. WCM4532F2SF series realizes small size and low profile. 4.5x3.2x2.8 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature-40~+125℃ (Including self - temperature rise)

Halogen-free

RoHS

2. Dimension



Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)
4532F2SF	4.5±0.2	3.2±0.2	2.8±0.2	1.0±0.1	1.2±0.1

Units: mm

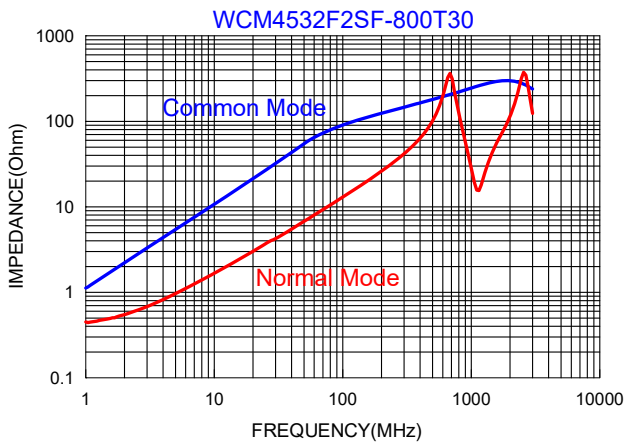
3. Part Numbering

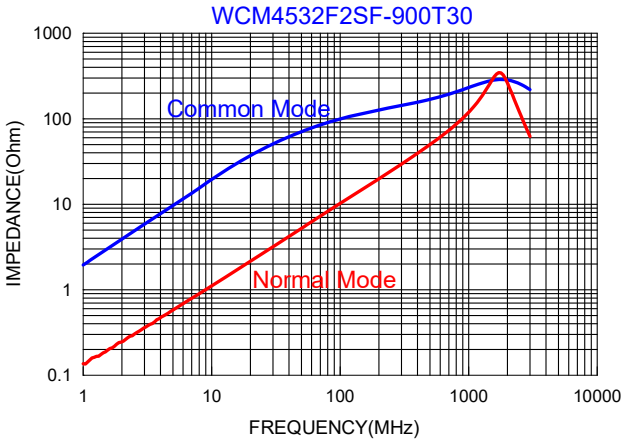
WCM	4532	F	2	S	F	-	900	T	30
A	B	C	D	E	F		G	H	I

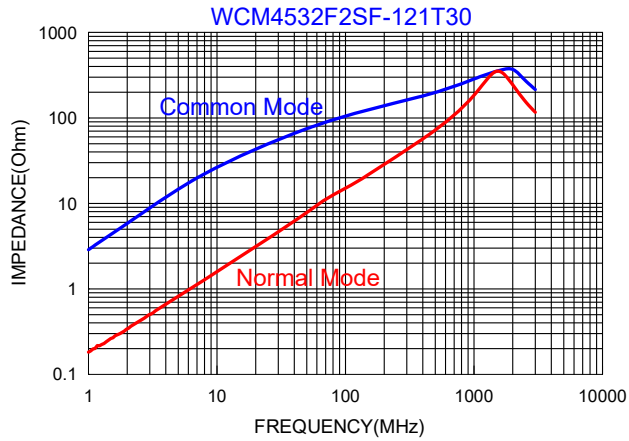
A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free
G: Impedance 900=90Ω
H: Packaging T=Taping and Reel
I: Rated Current 30=3000mA

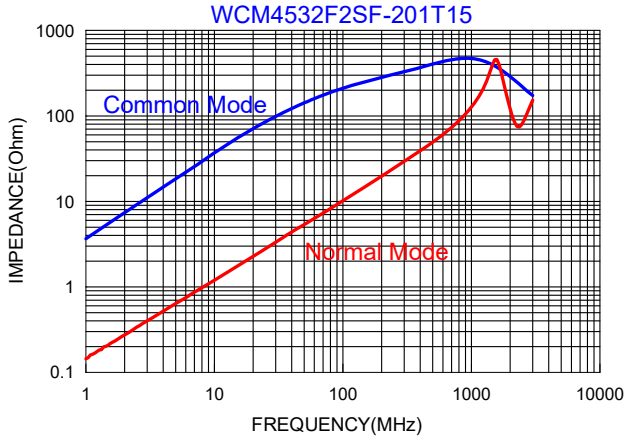
4. Specification

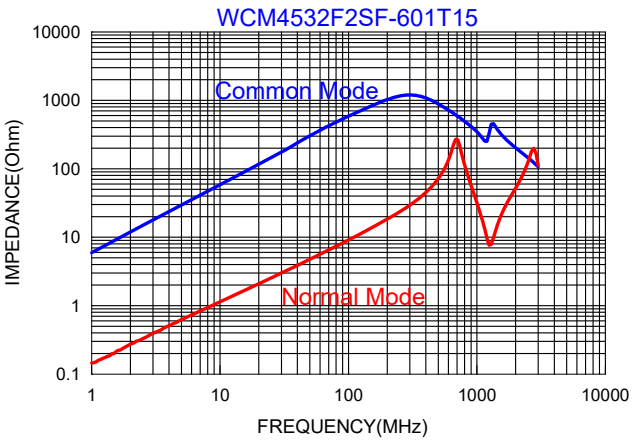
TAI-TECH Part Number	Common mode Impedance (Ω)	Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA) max.	Rated Volt. (Vdc) max.	Withstand Volt. (Vdc) max.	IR (Ω) min.
WCM4532F2SF-800T30	80±25%	100	0.05	3000	50	125	10M
WCM4532F2SF-900T30	90±25%	100	0.05	3000	50	125	10M
WCM4532F2SF-121T30	120±25%	100	0.05	3000	50	125	10M
WCM4532F2SF-201T15	200±25%	100	0.10	1500	50	125	10M
WCM4532F2SF-601T15	600±25%	100	0.24	1500	50	125	10M
WCM4532F2SF-801T10	800±25%	100	0.24	1000	50	125	10M

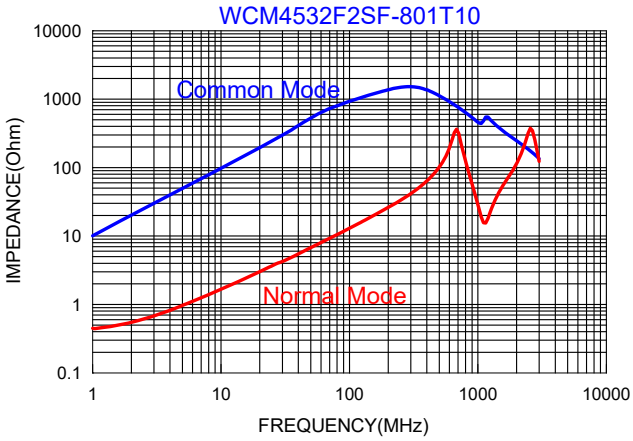

WCM4532F2SF-800T30
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000


WCM4532F2SF-900T30
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000


WCM4532F2SF-121T30
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000

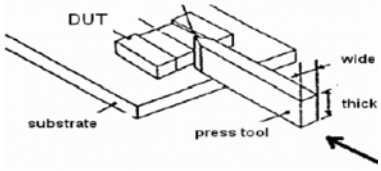

WCM4532F2SF-201T15
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
1000
100
10
1
0.1
1
10
100
1000
10000


WCM4532F2SF-601T15
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
10000
1000
100
10
1
0.1
1
10
100
1000
10000


WCM4532F2SF-801T10
Common Mode
Normal Mode
IMPEDANCE(Ohm)
FREQUENCY(MHz)
10000
1000
100
10
1
0.1
1
10
100
1000
10000

Reliability and Test Condition (WCM1210, 1608, 2012, 3216, 3225, 4532)

Item	Performance	Test Condition
Operating temperature	-40~+125℃ (Including self - temperature rise)	
Storage temperature	-40~+125℃ (on board)	
Electrical Performance Test		
Z(common mode)	Refer to standard electrical characteristics list.	Keysight E4991B + Keysight 16197A
DCR		Agilent-34420A Agilent-4338B
I.R.		Chroma 19073
Temperature Rise Test	Rated Current ΔT 40℃Max	1.Applied the allowed DC current. 2.Temperature measured by digital surface thermometer
Reliability Test		
Life Test	Appearance：No damage. Impedance：within±15% of initial value RDC：within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles) Temperature：125±2℃ Applied current：rated current Duration：1000±12hrs Measured at room temperature after placing for 24 hrs.
Load Humidity		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles Humidity：85±3% R.H, Temperature：85℃±2℃ Duration：1000hrs Min. Bead：with 100% rated current，Inductance: with 10% rated current Measured at room temperature after placing for 24 hrs.
Moisture Resistance		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles 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 2 hrs then keep at -10℃ for 3 hrs 4. Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Thermal shock		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles Condition for 1 cycle Step1：-40±2℃ 30±5min Step2：125±2℃ ≦0.5min Step3：125±2℃ 30±5min Number of cycles： 500 Measured at room temperature after placing for 24 hrs.
Vibration		Oscillation Frequency: 10Hz～2KHz～10Hz for 20 minute Equipment： Vibration checker Total Amplitude:10g Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)。

<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Bending</td><td rowspan="2">Appearance：No damage.
Impedance：within±15% of initial value
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm
<0805 inch(2012mm):40x100x0.8mm
Bending depth: >=0805 inch(2012mm):1.2mm
<0805 inch(2012mm):0.8mm
duration of 10 sec.</td></tr>
<tr><td>Shock</td><td>
<table>
<tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr>
<tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
<tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
</table>
3 shocks in each direction along 3 perpendicular axes. (18 shocks).</td></tr>
<tr><td>Solderability</td><td>More than 95% of the terminal electrode should be covered with solder。</td><td>a. Method B, 4 hrs @155°C dry heat @235°C±5°C
Testing Time :5 +0/-0.5 seconds
b. Method D category 3. (8hours ± 15 min)@ 260°C±5°C
Testing Time :30 +0/-0.5 seconds</td></tr>
<tr><td>Resistance to Soldering Heat</td><td rowspan="2">Appearance：No damage.
Impedance：within±15% of initial value
RDC：within ±15% of initial value and shall not exceed the specification value e</td><td>Depth: completely cover the termination
<table>
<tr><th>Temperature(°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr>
<tr><td>260 ±5 (solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td><td>1</td></tr>
</table></td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles
With the component mounted on a PCB with the device to be tested, apply a force(>0805:1kg , <=0805:0.3kg)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.
 
</td></tr>
</table>

Wire Wound Type Common Mode Filter WCM4532F2SF-SERIES-HI

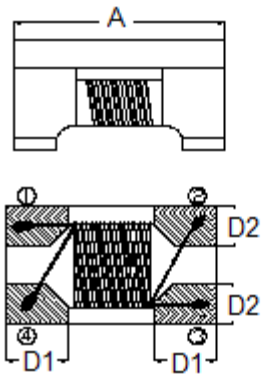
1. Features

1. High common mode impedance at high frequency cause excellent noise suppression performance.
2. WCM4532F2SF series realizes small size and low profile. 4.5x3.2x2.8 mm.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature-40~+125℃(Including self - temperature rise)

Halogen-free

RoHS

2. Dimension



Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)
4532F2SF	4.5±0.2	3.2±0.2	2.8±0.2	0.90±0.15	1.05±0.15

Units: mm

3. Part Numbering

WCM	4532	F	2	S	F	-	142	T	20	-	HI
A	B	C	D	E	F		G	H	I		J

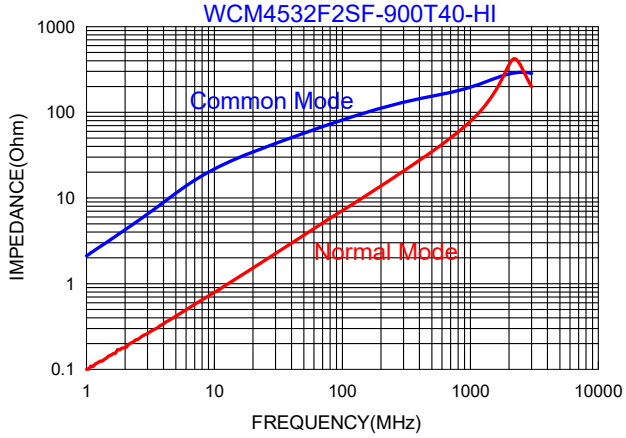
A: Series
B: Dimension
C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded , N=Unshielded
F: Lead free
G: Impedance 142=1400Ω
H: Packaging T=Taping and Reel
I: Rated Current 20=2000mA
J: Control S/N

4. Specification

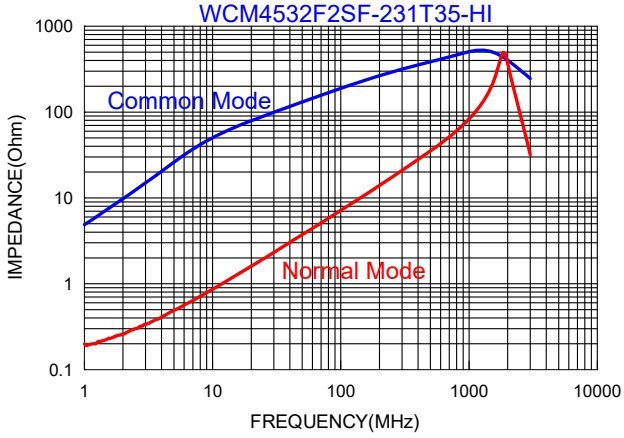
TAI-TECH Part Number	Common mode Impedance (Ω)		Test Frequency (MHz)	DC Resistance (Ω) max.	Rated Current (mA) max.	Rated Volt. (Vdc) max.	Withstand Volt. (Vdc) max.	IR (Ω) min.
WCM4532F2SF-900T40-HI	68 min	90 typ.	100	0.050	4000	50	125	10M
WCM4532F2SF-231T35-HI	173 min	230 typ.	100	0.050	3500	50	125	10M
WCM4532F2SF-421T32-HI	300 min	420 typ.	100	0.055	3200	50	125	10M
WCM4532F2SF-601T25-HI	450 min	600 typ.	100	0.060	2500	50	125	10M
WCM4532F2SF-901T23-HI	650 min	900 typ.	100	0.070	2300	50	125	10M
WCM4532F2SF-142T20-HI	1000 min.	1400 typ.	100	0.100	2000	50	125	10M
WCM4532F2SF-282T09-HI	2100 min	2800 typ.	100	0.350	900	50	125	10M

Note: When current is applied , the temperature of the part should not exceed 125℃

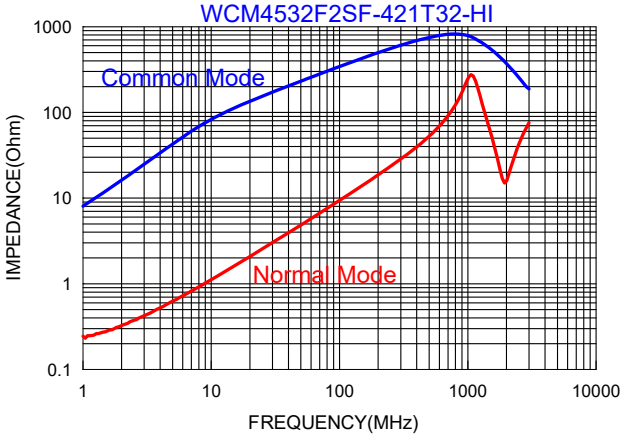
WCM4532F2SF-900T40-HI



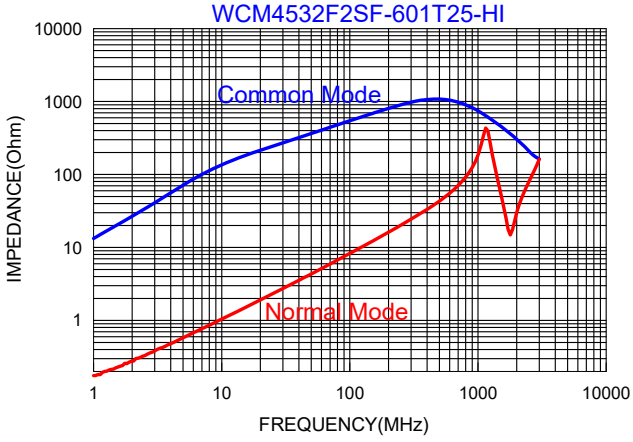
WCM4532F2SF-231T35-HI



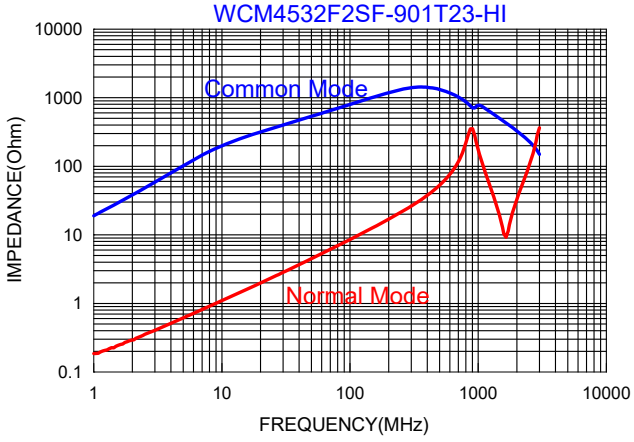
WCM4532F2SF-421T32-HI



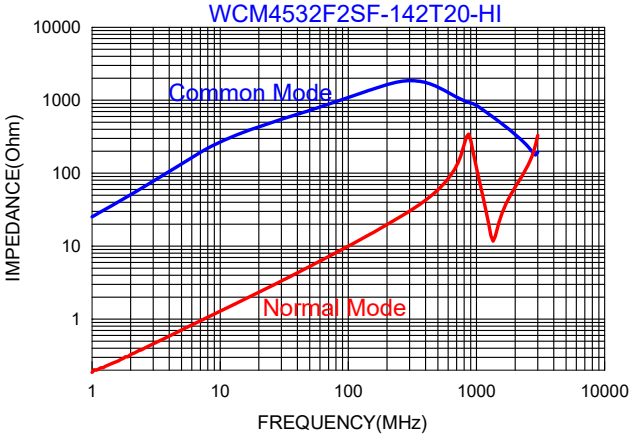
WCM4532F2SF-601T25-HI



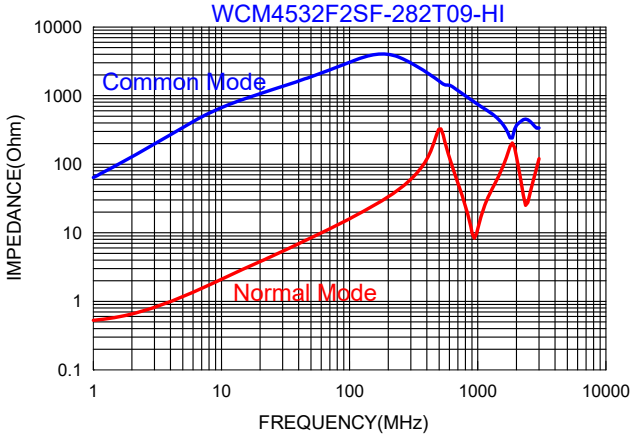
WCM4532F2SF-901T23-HI



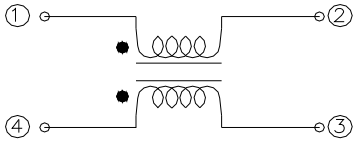
WCM4532F2SF-142T20-HI



WCM4532F2SF-282T09-HI

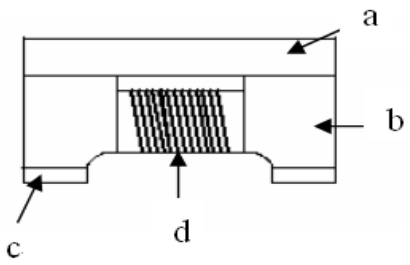


5. Schematic Diagram



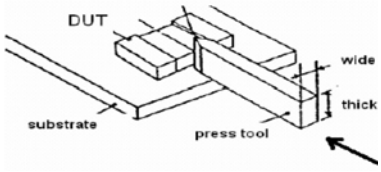
6. Materials

No.	Description	Specification
a.	Upper Plate	Ferrite
b.	Core	Ferrite Core
c	Termination	Ag/Ni/Sn
d	Wire	Enameled Copper Wire



Reliability and Test Condition (4532-HI)

Item	Performance	Test Condition
Operating temperature	-40~+125℃(Including self - temperature rise)	
Storage temperature	-40~+125℃(on board)	
Electrical Performance Test		
Z(common mode)	Refer to standard electrical characteristics list.	Keysight E4991B + Keysight 16197A
DCR		Agilent-34420A Agilent-4338B
I.R.		Chroma 19073
Temperature Rise Test	Rated Current , ΔT :40℃ typ.	1.Applied the allowed DC current. 2.Temperature measured by digital surface thermometer
Reliability Test		
Life Test	Appearance：No damage. Impedance：within±15% of initial value RDC：within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through reflow for 3 times.(IPC/JEDECJ-STD-020EClassification Reflow Profiles) Temperature：125±2℃(Inductor) Applied current：rated current Duration：1000±12hrs Measured at room temperature after placing for 24 hrs.
Load Humidity		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles Humidity：85±3% R.H, Temperature：85℃±2℃ Duration：1000hrs Min. Bead：with 100% rated current，Inductance: with 10% rated current Measured at room temperature after placing for 24 hrs.
Moisture Resistance		Preconditioning: Run through reflow for 3 times.(IPC/JEDECJ-STD-020E Classification Reflow Profiles) 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 2 hrs then keep at -10℃ for 3 hrs 4. Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Thermal shock		Preconditioning: Run through reflow for 3 times.(IPC/JEDECJ-STD-020E Classification Reflow Profiles) Condition for 1 cycle Step1：-40±2℃ 30±5min Step2：125±2℃ ≦0.5min Step3：125±2℃ 30±5min Number of cycles： 500 Measured at room temperature after placing for 24 hrs.
Vibration		Preconditioning: Run through reflow for 3 times.(IPC/JEDECJ-STD-020E Classification Reflow Profiles) Oscillation Frequency: 10Hz～2KHz～10Hz for 20 minute Equipment： Vibration checker Total Amplitude:10g Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)。

<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Bending</td><td rowspan="2">Appearance：No damage.
Impedance：within±15% of initial value
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm
<0805 inch(2012mm):40x100x0.8mm
Bending depth: >=0805 inch(2012mm):1.2mm
<0805 inch(2012mm):0.8mm
duration of 10 sec.</td></tr>
<tr><td>Shock</td><td>
<table>
<tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr>
<tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
<tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
</table>
3 shocks in each direction along 3 perpendicular axes. (18 shocks).
</td></tr>
<tr><td>Solderability</td><td>More than 95% of the terminal electrode should be covered with solder。</td><td>a. Method B, 4 hrs @155°C dry heat @235°C±5°C
Testing Time :5 +0/-0.5 seconds
b. Method D category 3. (8hours ± 15 min)@ 260°C±5°C
Testing Time :30 +0/-0.5 seconds</td></tr>
<tr><td>Resistance to Soldering Heat</td><td rowspan="2">Appearance：No damage.
Impedance：within±15% of initial value
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Depth: completely cover the termination
<table>
<tr><th>Temperature(°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr>
<tr><td>260 ±5 (solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles
With the component mounted on a PCB with the device to be tested, apply a force(>0805:1kg , <=0805:0.5kg)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.
 

</td></tr>
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Wire Wound Power Common Mode Filter WCM7060FASF-SERIES-LM

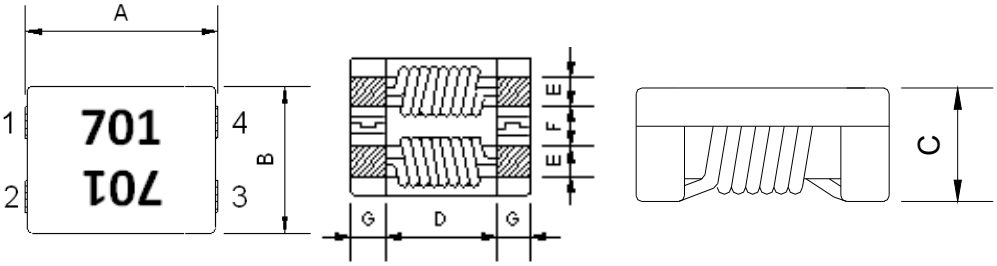
1. Features

1. Operating temperature -40~+125℃ (Including self - temperature rise)

Halogen-free

RoHS

2. Dimension



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)
WCM7060	7.0±0.5	6.0±0.5	3.8 max.	3.5 typ.	1.5±0.5	1.5±0.5	1.7±0.5

Unit:mm

3. Part Numbering

WCM	7060	F	A	S	F	-	701	-	LM
A	B	C	D	E	F		G		H

A: Series
B: Dimension
C: Material Ferrite Core
D: Process Asembled
E: Type S=Shielded , N=Unshielded
F: Lead free
G: Impedance 701=700Ω
H: Laser Marking

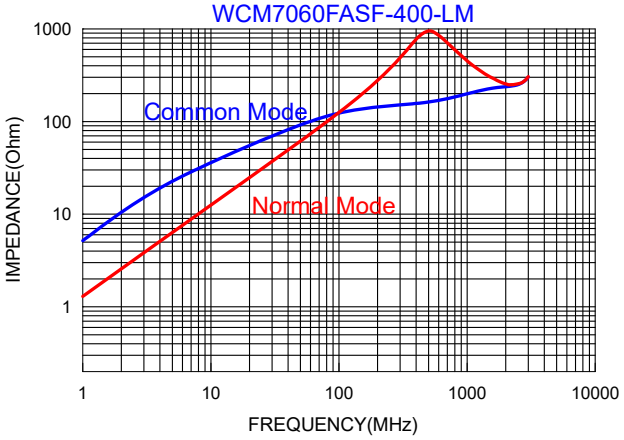
4. Specification

TAI-TECH Part Number	Impedance (Ω)		Test Frequency (MHz)	DC Resistance (mΩ) max. (1 line)	Rated Current (A) max.	Rated Volt. (Vdc) max.	Insulation Resistance (MΩ) min.
	min.	typ.					
WCM7060FASF-400-LM	40	70	100	5	15	80	10
WCM7060FASF-101-LM	100	140	100	10	9	80	10
WCM7060FASF-301-LM	225	300	100	10	5	80	10
WCM7060FASF-501-LM	400	500	100	10	5	80	10
WCM7060FASF-701-LM	500	700	100	15	4	80	10
WCM7060FASF-102-LM	800	1020	100	17	3	80	10
WCM7060FASF-132-LM	910	1300	100	20	3	80	10

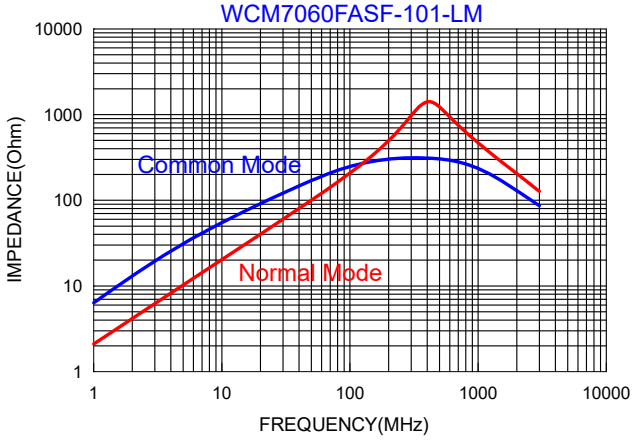
Note:

Measurement board data
Material : FR4
Board dimensions : 100 X 50 X 1.6t mm
Pattern dimensions: 45 X 30 mm (Double side board)
Pattern thickness : 50 μm

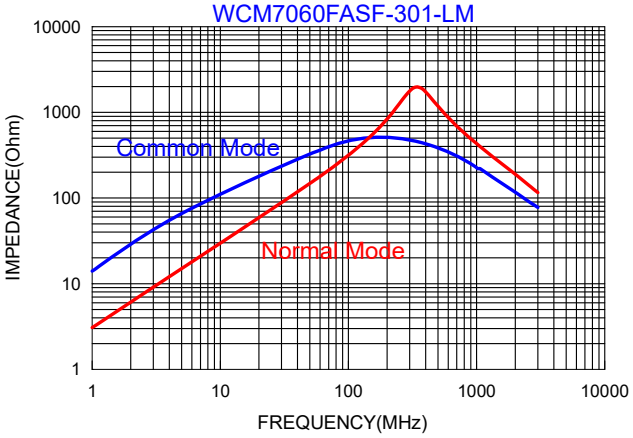
WCM7060FASF-400-LM



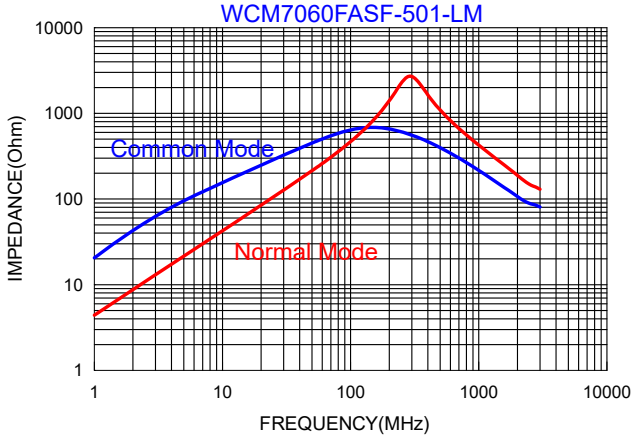
WCM7060FASF-101-LM



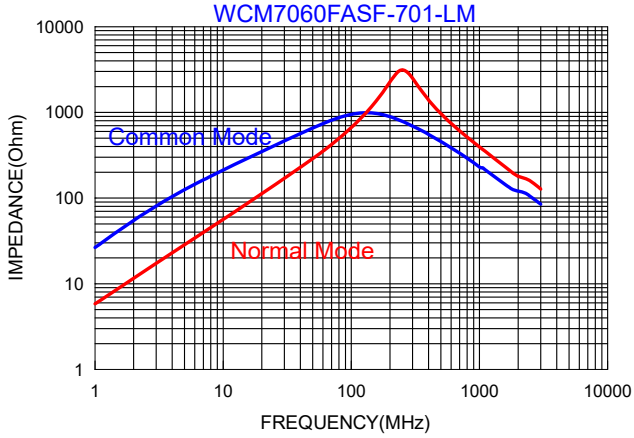
WCM7060FASF-301-LM



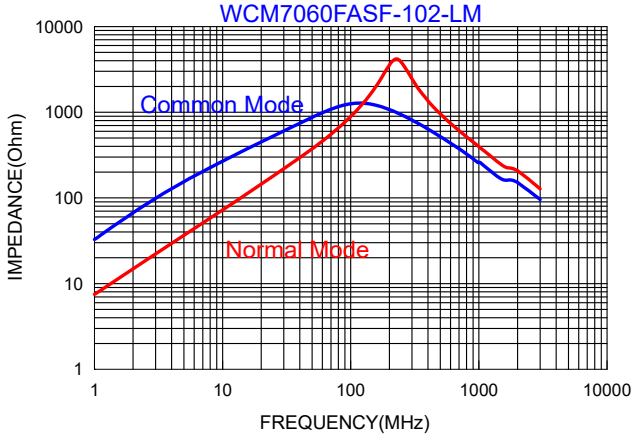
WCM7060FASF-501-LM



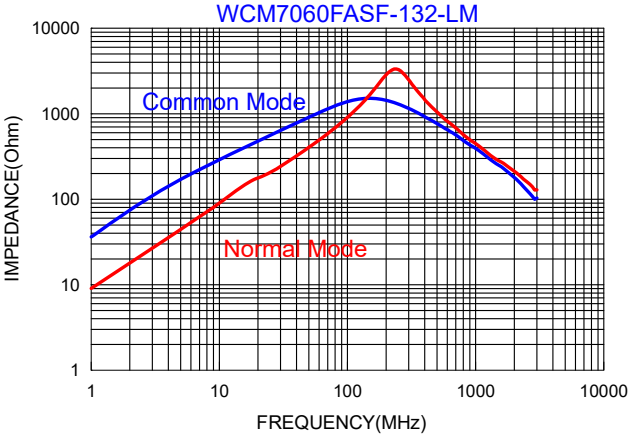
WCM7060FASF-701-LM



WCM7060FASF-102-LM



WCM7060FASF-132-LM



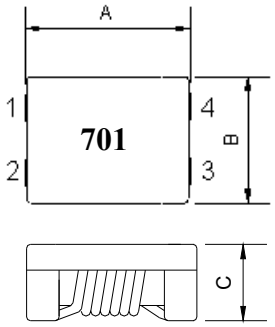
Wire Wound Type Common Mode Filter

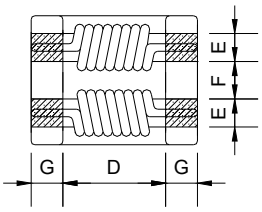
WCM9070-SERIES-M

1. Features

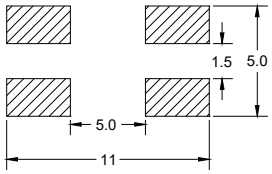
1. Operating temperature -40~+125℃ (Including self - temperature rise)

2. Dimension





Recommended PC Board Pattern



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)
WCM9070	9.0±0.5	7.0±0.5	4.8 max.	5.7 typ.	1.5±0.5	2.0±0.5	1.7±0.2

Unit:mm

3. Part Numbering

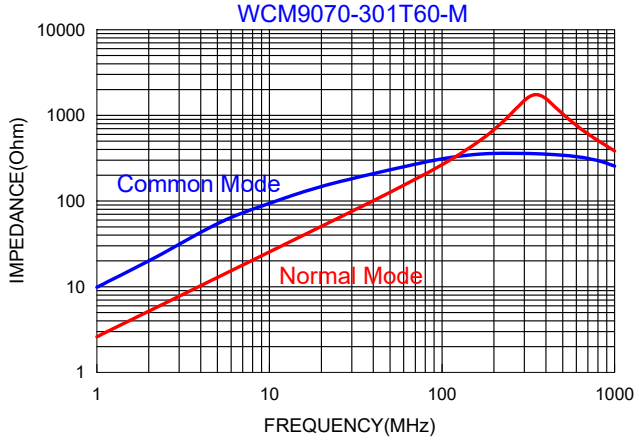
WCM	9070	-	701	T	50	-	M
A	B		C	D	E		F

A: Series
B: Dimension
C: Impedance 701=700Ω
D: Packaging T=Taping
E: Rated Current 50=5A
F: Marking 印字:黑色 單向印字

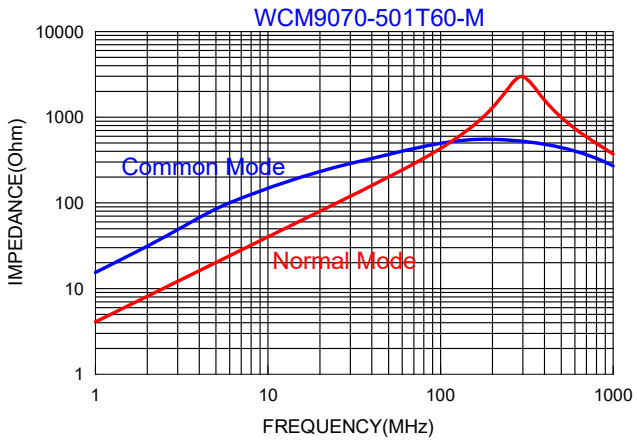
4. Specification

TAI-TECH Part Number	Impedance (Ω)		Test Frequency (MHz)	DC Resistance (Ω) max.(1 line)	Rated Current (A) max.	Rated Volt. (Vdc) max.	Insulation Resistance (MΩ) min.
	min.	typ.					
WCM9070-301T60-M	225	300	100	6m	6.0	80	10
WCM9070-501T60-M	450	600	100	8m	6.0	80	10
WCM9070-701T50-M	500	700	100	10m	5.0	80	10
WCM9070-102T40-M	750	1000	100	13m	4.0	80	10
WCM9070-222T25-M	1700	2200	100	60m	2.5	80	10
WCM9070-272T20-M	2000	2700	100	65m	2.0	80	10
WCM9070-302T30-M	2500	3000	100	70m	3.0	80	10

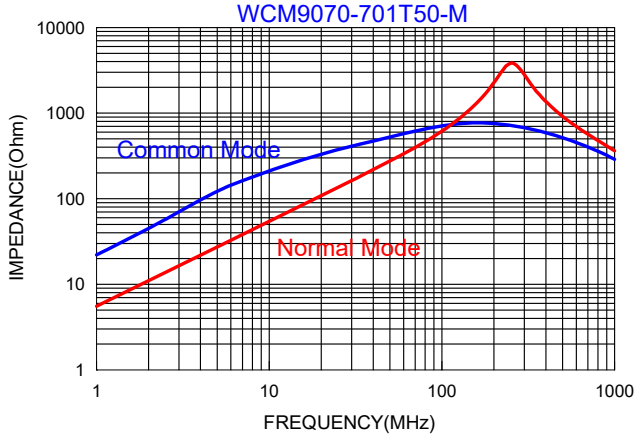
WCM9070-301T60-M



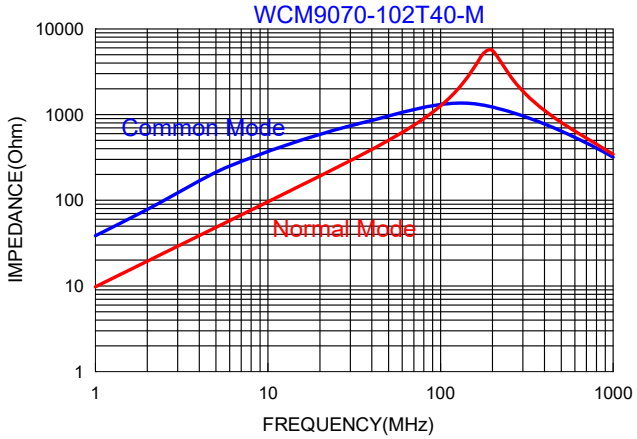
WCM9070-501T60-M



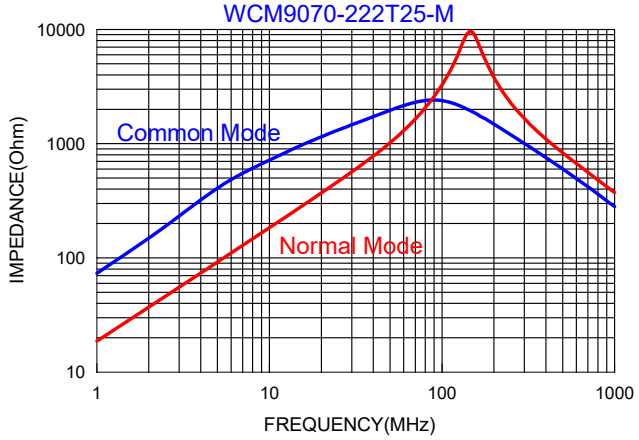
WCM9070-701T50-M



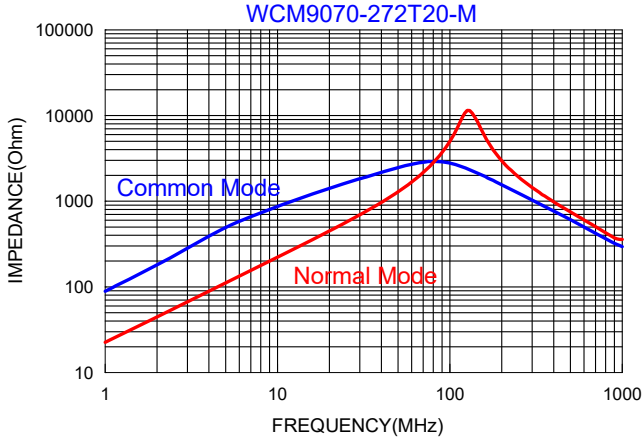
WCM9070-102T40-M



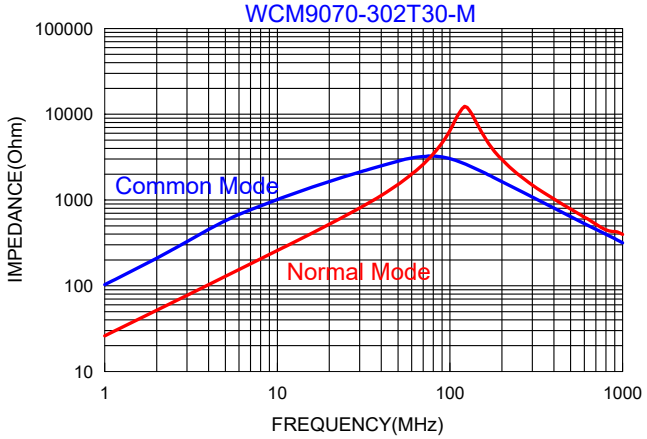
WCM9070-222T25-M



WCM9070-272T20-M



WCM9070-302T30-M



Wire Wound Type Common Mode Filter

WCM1211F-SERIES-M

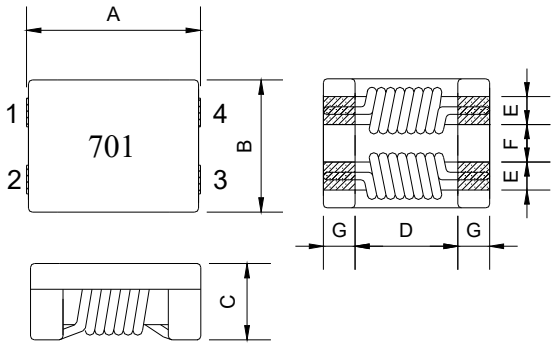
1. Features

1.Operating temperature-40~+125℃ (Including self - temperature rise)

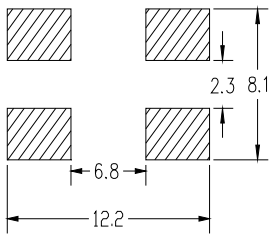
Halogen-free

RoHS

2. Dimension



Recommended PC Board Pattern



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)
WCM1211	12±0.5	10.8±0.5	6.4 max.	7.0 typ.	2.7±0.2	2.5±0.2	2.5±0.2

Unit:mm

3. Part Numbering

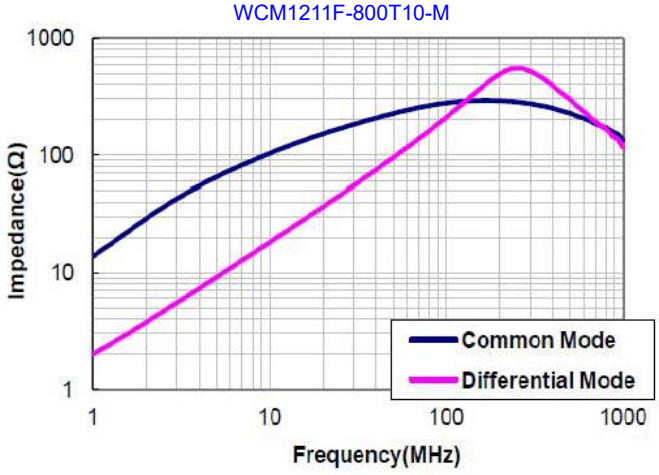
WCM	1211	F -	701	T	80	-	M
A	B	C	D	E	F		G

A: Series
B: Dimension
C: Lead free
D: Impedance 701=700Ω
E: Packaging T=Taping
F: Rated Current 80=8A
G:Marking 印字:黑色 單向印字

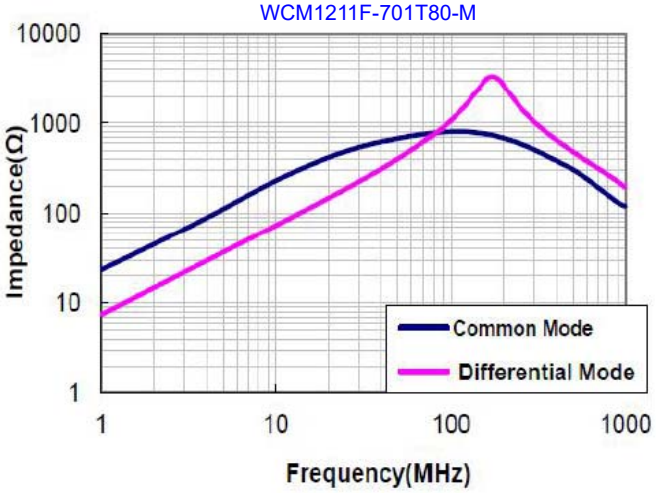
4. Specification

TAI-TECH Part Number	Impedance (Ω)		Test Frequency (MHz)	DC Resistance (Ω) max.(1 line)	Rated Current (A) max.	Rated Volt. (Vdc) max.	Insulation Resistance (MΩ) min.
	min.	typ.					
WCM1211F-800T10-M	80	230	100	2m	10	125	10
WCM1211F-701T80-M	500	700	100	6m	8	125	10
WCM1211F-801T80-M	600	800	100	8m	8	125	10
WCM1211F-102T60-M	750	1000	100	14m	6	125	10
WCM1211F-222T02-M	2200	2500	100	35m	1.8	125	10
WCM1211F-272T02-M	2300	2700	100	50m	1.5	125	10

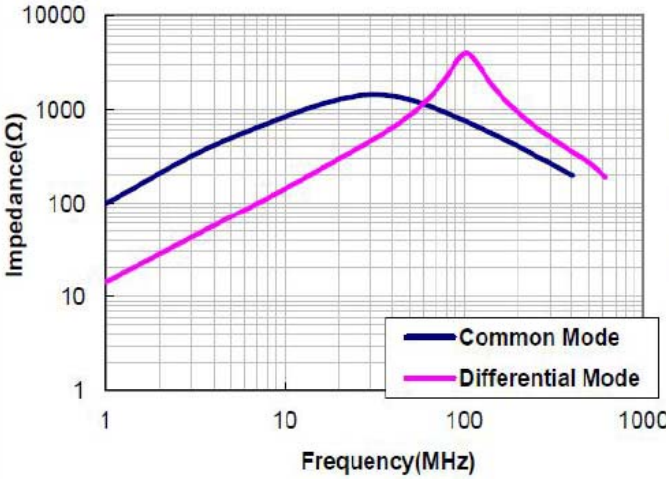
WCM1211F-800T10-M



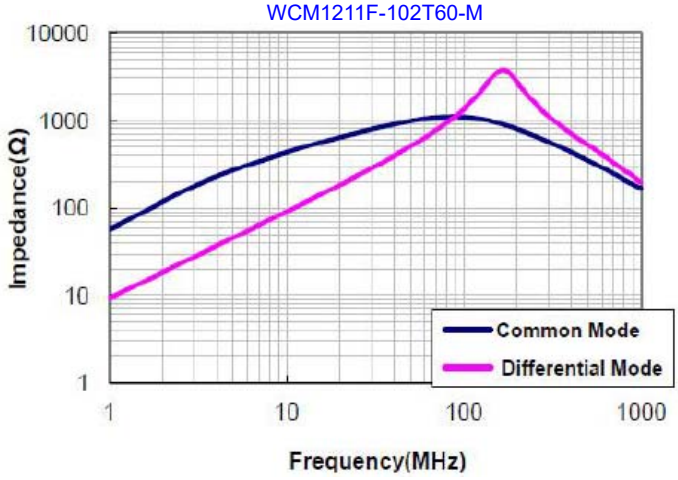
WCM1211F-701T80-M



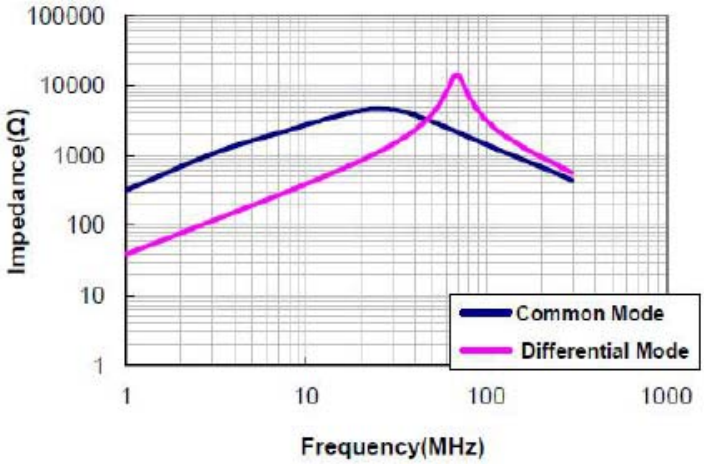
WCM1211F-801T80-M



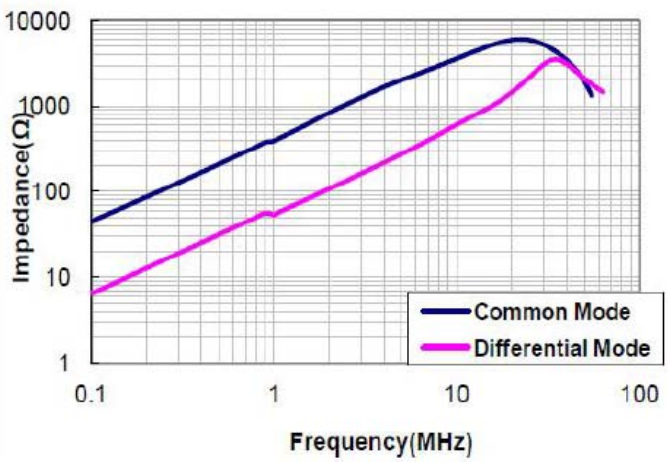
WCM1211F-102T60-M



WCM1211F-222T02-M

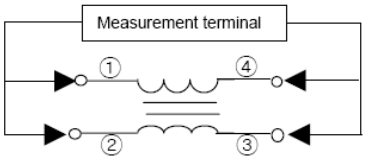


WCM1211F-272T02-M

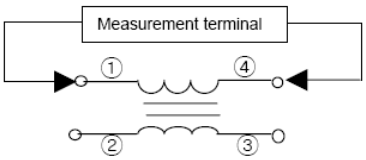


5. Schematic Diagram

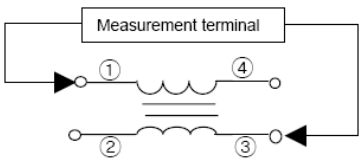
Impedance



DC Resistance

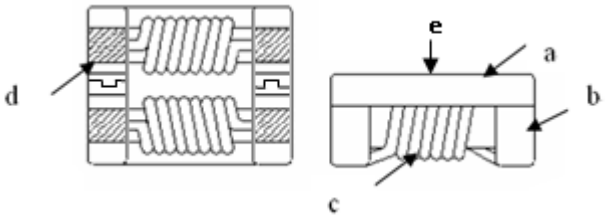


Insulation Resistance



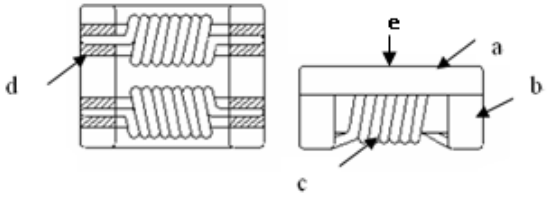
6-1. Materials (WCM7060)

No.	Description	Specification
a.	Upper Plate	Ceramics Core (Black)
b.	Core	Ferrite Core
c	Wire	Enameled Copper
d	Termination	Ag/Ni/Sn + Sn Solder
e	Mark	Laser Marking



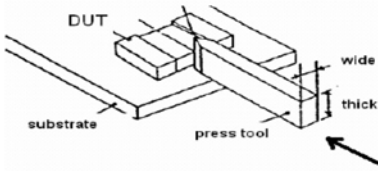
6-2. Materials (WCM9070,1211)

No.	Description	Specification
a.	Upper Plate	MYLAR
b.	Core	Ferrite Core
c	Wire	Enameled Copper Wire
d	Termination	Ag/Ni/Sn
e	INK	BLACK



7. Reliability and Test Condition (WCM7060, 9070, 1211)

Item	Performance	Test Condition
Operating temperature	-40~+125℃ (Including self - temperature rise)	
Storage temperature	-40~+125℃ (on board)	
Electrical Performance Test		
Z(common mode)	Refer to standard electrical characteristics list.	Agilent E4991A + Keysight 16092A
DCR		Agilent-34420A
I.R.		Chroma 19073
Temperature Rise Test	Rated Current ΔT 40℃Max	1.Applied the allowed DC current. 2.Temperature measured by digital surface thermometer
Reliability Test		
Life Test	Appearance：No damage. Impedance：within±15% of initial value RDC：within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles) Temperature：125±2℃ Applied current：rated current Duration：1000±12hrs Measured at room temperature after placing for 24 hrs.
Load Humidity		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles Humidity：85±3% R.H, Temperature：85℃±2℃ Duration：1000hrs Min. Bead：with 100% rated current，Inductance: with 10% rated current Measured at room temperature after placing for 24 hrs.
Moisture Resistance		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles 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 2 hrs then keep at -10℃ for 3 hrs 4. Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Thermal shock		Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles Condition for 1 cycle Step1：-40±2℃ 30±5min Step2：125±2℃ ≦0.5min Step3：125±2℃ 30±5min Number of cycles： 500 Measured at room temperature after placing for 24 hrs.
Vibration		Oscillation Frequency: 10Hz～2KHz～10Hz for 20 minute Equipment： Vibration checker Total Amplitude:10g Testing Time：12 hours(20 minutes, 12 cycles each of 3 orientations)。

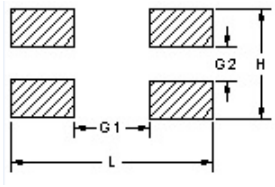
<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Bending</td><td rowspan="2">Appearance：No damage.
Impedance：within±15% of initial value
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm
<0805 inch(2012mm):40x100x0.8mm
Bending depth: >=0805 inch(2012mm):1.2mm
<0805 inch(2012mm):0.8mm
duration of 10 sec.</td></tr>
<tr><td>Shock</td><td>
<table>
<tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr>
<tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
<tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
</table>
3 shocks in each direction along 3 perpendicular axes. (18 shocks).</td></tr>
<tr><td>Solderability</td><td>More than 95% of the terminal electrode should be covered with solder。</td><td>a. Method B, 4 hrs @155°C dry heat @235°C±5°C
Testing Time :5 +0/-0.5 seconds
b. Method D category 3. (8hours ± 15 min)@ 260°C±5°C
Testing Time :30 +0/-0.5 seconds</td></tr>
<tr><td>Resistance to Soldering Heat</td><td rowspan="2">Appearance：No damage.
Impedance：within±15% of initial value
RDC：within ±15% of initial value and shall not exceed the specification value e</td><td>Depth: completely cover the termination
<table>
<tr><th>Temperature(°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr>
<tr><td>260 ±5 (solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td><td>1</td></tr>
</table></td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning: Run through reflow for 3 times.(IPC/JEDEC J-STD-020E Classification Reflow Profiles
With the component mounted on a PCB with the device to be tested, apply a force(>0805:1kg , <=0805:0.5kg)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.
 
</td></tr>
</table>

8. Soldering and Mounting

8-1. Recommended PC Board Pattern

	WCM1210F2S	WCM1608F2SN	WCM2012F2S	WCM3216F2S	WCM3225F2S
L(mm)	1.55	2.10	2.60	3.70	4.40
H(mm)	1.10	1.00	1.40	1.60	3.50
G1(mm	0.65	0.70	1.25	1.90	1.60
G2(mm	0.30	0.30	0.45	0.40	0.60

	WCM4532F2S	WCM4532F2S-HI	WCM7060FAS
L(mm)	4.80	5.00	8.0
H(mm)	3.80	3.60	4.5
G1(mm	2.50	3.00	3.5
G2(mm	0.70	1.20	1.5



8-2. Soldering

Mildly activated rosin fluxes are preferred. TAI-TECH terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

8-2.1 Soldering Reflow:

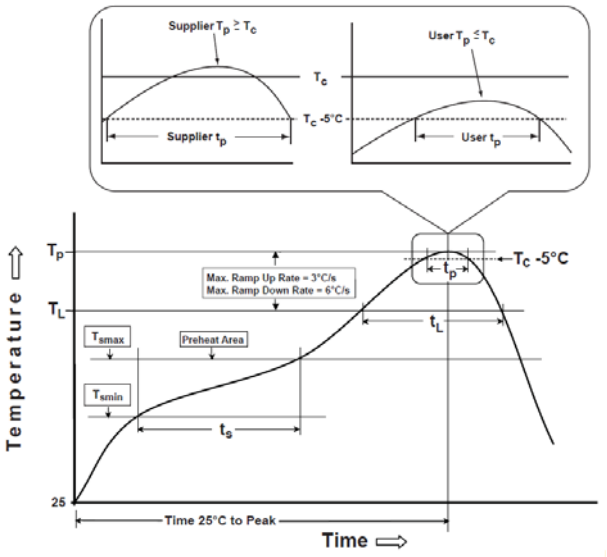
Recommended temperature profiles for lead free re-flow soldering in Figure 1. Table 1.1&1.2 (J-STD-020E)

8-2.2 Soldering Iron:

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended. (Figure 2.)

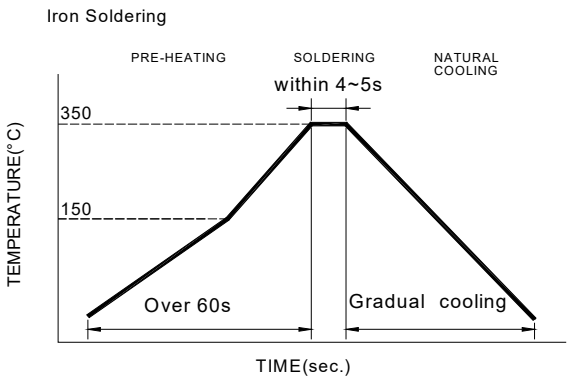
- Preheat circuit and products to 150℃
- 350℃ tip temperature (max)
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (max)
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- Limit soldering time to 4~5sec.

Fig.1 Soldering Reflow



Reflow times: 3 times max

Fig.2 Iron soldering temperature profiles



Iron Soldering times：1 times max

Table (1.1): Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(t_s)from(T_{smin} to T_{smax})	 150℃ 200℃ 60-120seconds
Ramp-up rate($T_L$to T_p)	3℃/second max.
Liquidus temperature(T_L) Time(t_L)maintained above T_L	217℃ 60-150 seconds
Classification temperature(T_c)	See Table (1.2)
Time(t_p) at Tc- 5℃ (Tp should be equal to or less than Tc.)	< 30 seconds
Ramp-down rate(T_p to T_L)	6℃ /second max.
Time 25℃ to peak temperature	8 minutes max.

Tp: maximum peak package body temperature, **Tc**: the classification temperature.

For user (customer) **Tp** should be equal to or less than **Tc.**

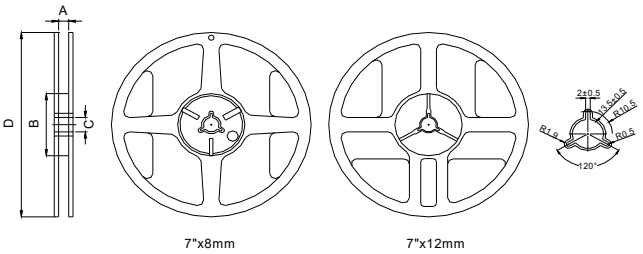
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >2000
PB-Free Assembly	<1.6mm	260℃	260℃	260℃
	1.6-2.5mm	260℃	250℃	245℃
	≥2.5mm	250℃	245℃	245℃

Reflow is referred to standard IPC/JEDEC J-STD-020E

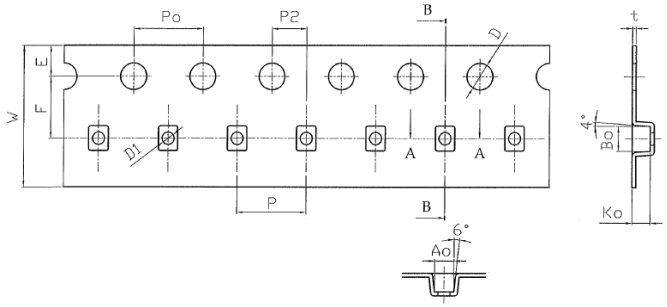
9. Packaging Information

9-1. Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60.0±2.0	13.5±0.5	178.0±2.0

9-2. Tape Dimension / 8mm

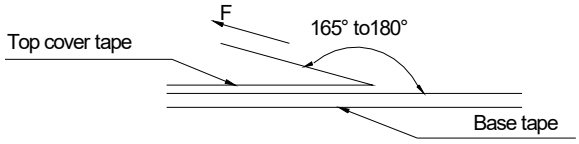


Series	W(mm)	P(mm)	E(mm)	F(mm)	P2(mm)	D(mm)	D1(mm)	P0(mm)	A0(mm)	B0(mm)	K0(mm)	t(mm)
WCM1210F2S	8.00±0.10	4.00±0.10	1.75±0.10	3.50±0.05	2.00±0.05	1.50+0.10/-0.00	0.70±0.10	4.00±0.10	1.12±0.10	1.40±0.10	1.05±0.10	0.22±0.05

9-3. Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
WCM1210F2S	3000	15000	75000	150000

9-4. Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

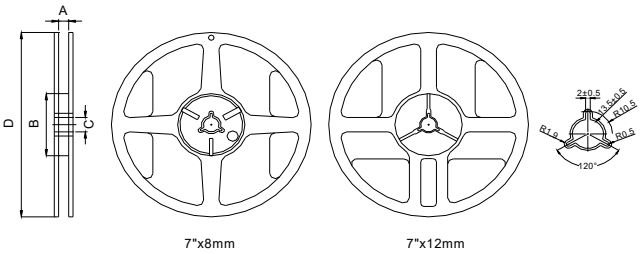
Application Notice

- Storage Conditions(component level)
  To maintain the solderability of terminal electrodes:
  1. TAI-TECH products meet IPC/JEDEC J-STD-020E standard-MSL, level 1.
  2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.

- Transportation
  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

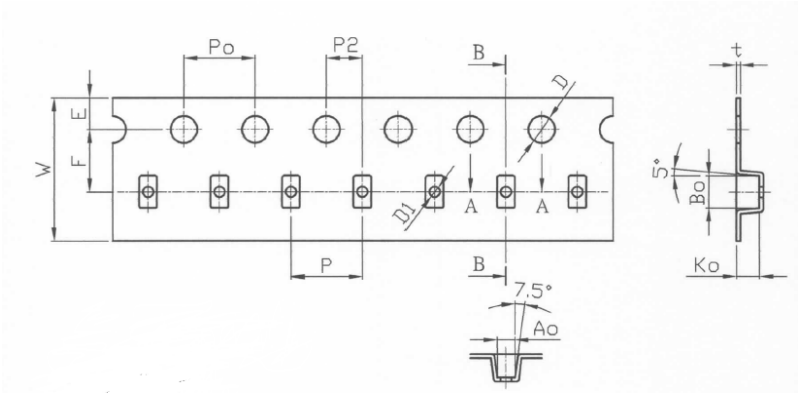
9. Packaging Information

9-1. Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60.0±2.0	13.5±0.5	178.0±2.0

9-2. Tape Dimension / 8mm

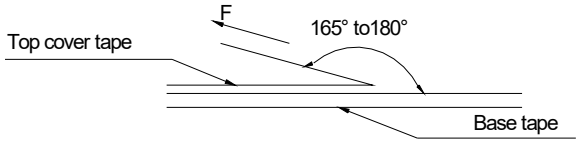


Series	W(mm)	P(mm)	E(mm)	F(mm)	P2(mm)	D(mm)	D1(mm)	P0(mm)	A0(mm)	B0(mm)	K0(mm)	t(mm)
WCM1608F2SN	8.00±0.10	4.00±0.10	1.75±0.10	3.50±0.05	2.00±0.05	1.50+0.10/-0.00	0.60±0.05	4.00±0.10	1.00±0.10	1.80±0.10	1.30±0.10	0.22±0.05

9-3. Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
WCM1608F2SN	3000	15000	75000	150000

9-4. Tearing Off Force



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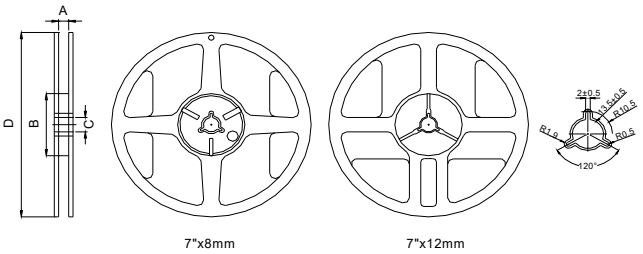
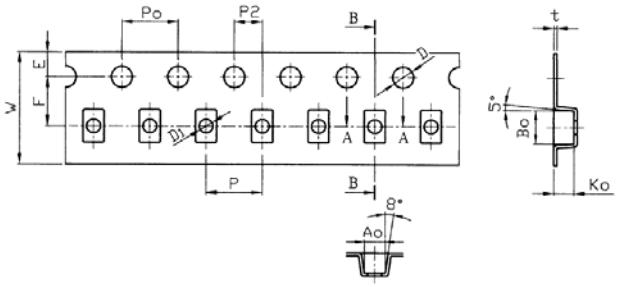
9. Packaging Information

9-1. Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60.0±2.0	13.5±0.5	178.0±2.0

9-2. Tape Dimension / 8mm

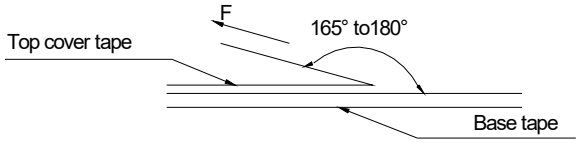


Series	W(mm)	P(mm)	E(mm)	F(mm)	P2(mm)	D(mm)	D1(mm)	P0(mm)	A0(mm)	B0(mm)	K0(mm)	t(mm)
WCM2012F2S	8.00±0.10	4.00±0.10	1.75±0.10	3.50±0.05	2.00±0.05	1.50+0.10/-0.00	1.00±0.10	4.00±0.10	1.50±0.10	2.35±0.10	1.45±0.10	0.28±0.05

9-3. Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
WCM2012F2S	2000	10000	50000	100000

9-4. Tearing Off Force



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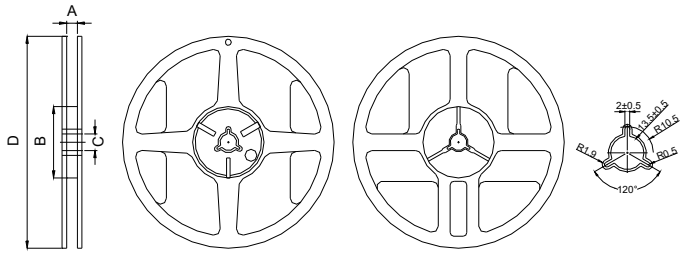
9. Packaging Information

9-1. Reel Dimension



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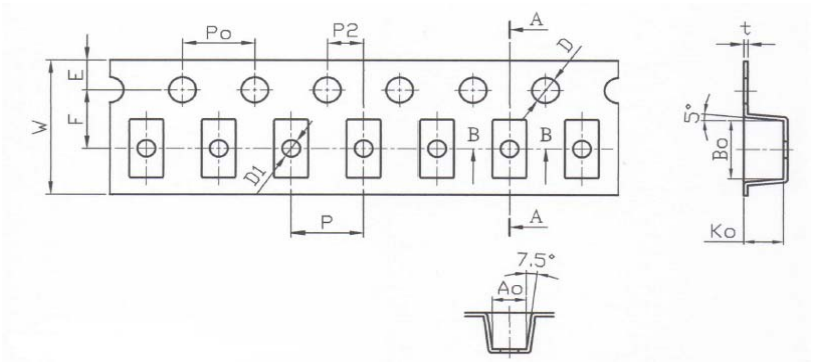
9-2. Tape Dimension / 8mm

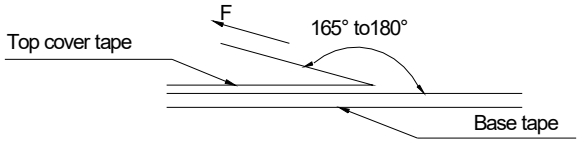


Series	P(mm)	Po(mm)	P2(mm)	Bo(mm)	Ao(mm)	Ko(mm)	W(mm)	t(mm)	E(mm)	F(mm)	D(mm)	D1(mm)
WCM3216F2S	4.00±0.10	4.00±0.10	2.00±0.05	3.50±0.10	1.88±0.10	2.20±0.10	8.00±0.10	0.26±0.05	1.75±0.10	3.50±0.05	1.50+0.10/-0.00	1.0±0.10

9-3. Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
WCM3216F2S	2000	10000	50000	100000

9-4. Tearing Off Force



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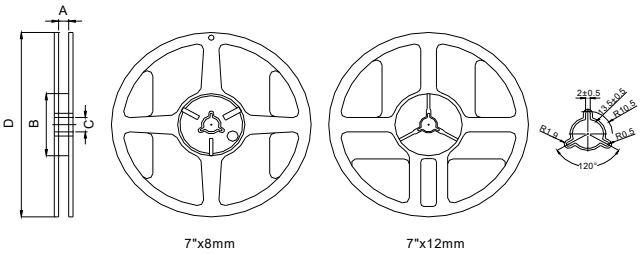

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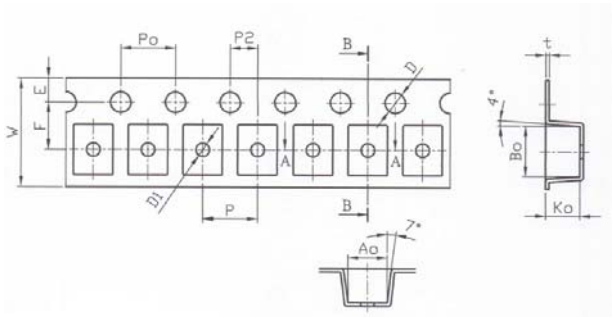
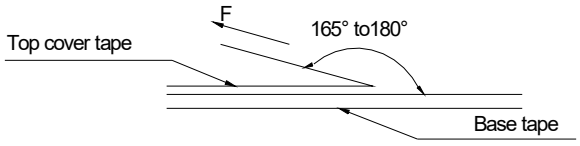


Series	W(mm)	P(mm)	E(mm)	F(mm)	P2(mm)	D(mm)	D1(mm)	P0(mm)	A0(mm)	B0(mm)	K0(mm)	t(mm)
WCM3225F2S	8.00±0.10	4.00±0.10	1.75±0.10	3.50±0.05	2.00±0.05	1.50+0.10/-0.00	1.00±0.10	4.00±0.10	2.88±0.10	3.72±0.10	2.50±0.10	0.26±0.05

9-3. Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
WCM3225F2S	2000	10000	50000	100000

9-4. Tearing Off Force



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9. Packaging Information

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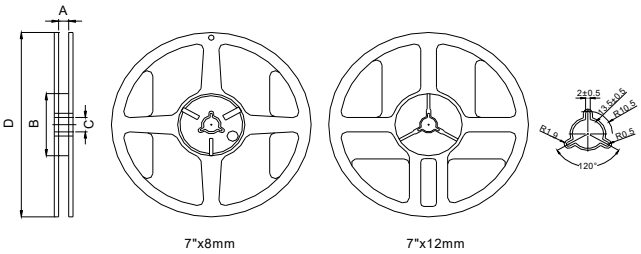

Type	A(mm)	B(mm)	C(mm)	D(mm)
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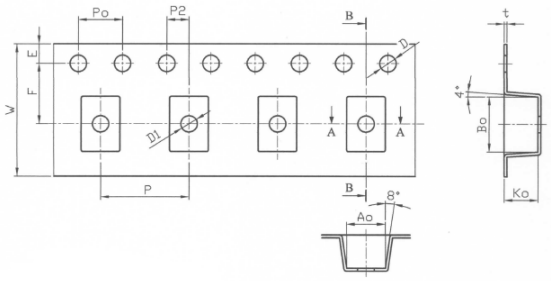
9-2. Tape Dimension / 12mm

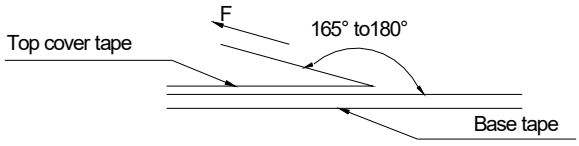


Series	P(mm)	Po(mm)	P2(mm)	Bo(mm)	Ao(mm)	Ko(mm)	D(mm)	E(mm)	F(mm)	W(mm)	t(mm)	D1(mm)
WCM4532F2S	8.00±0.10	4.00±0.10	2.00±0.05	4.90±0.10	3.60±0.10	3.00±0.10	1.50+0.10/-0.00	1.75±0.10	5.50±0.05	12.00±0.10	0.26±0.05	1.50±0.10

9-3. Packaging Quantity

Chip size	Chip/Reel	Inner Box	Middle Box	Carton
WCM4532F2S	500	2000	10000	20000

9-4. Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

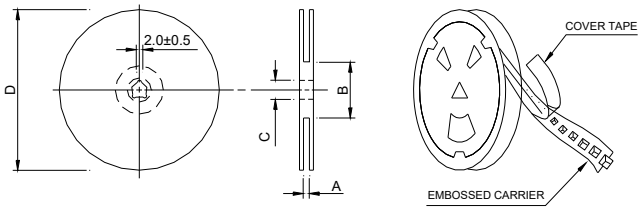
Application Notice

- Storage Conditions(component level)
  To maintain the solderability of terminal electrodes:
  1. TAI-TECH products meet IPC/JEDEC J-STD-020E standard-MSL, level 1.
  2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.

- Transportation
  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

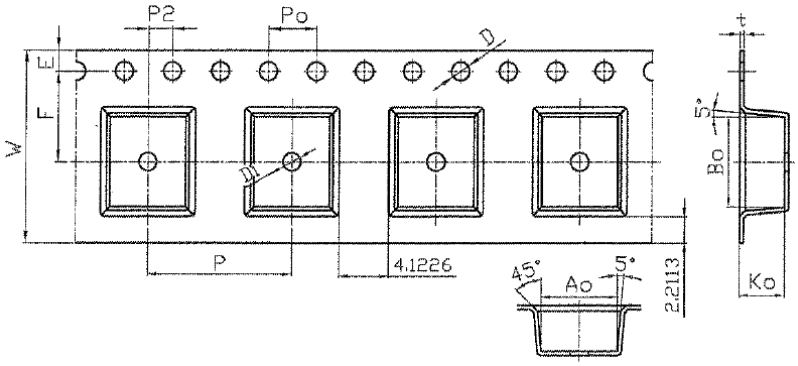
9. Packaging Information

9-1. Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
13"x16mm	16.0±0.5	100.0±2.0	13.5±0.5	330

9-2. Tape Dimension

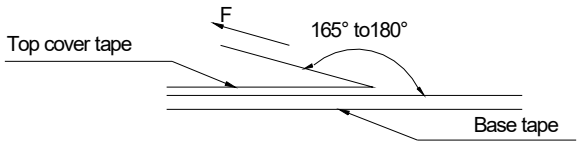


Series	W(mm)	Bo(mm)	Ao(mm)	Ko(mm)	D(mm)	D1(mm)	Ko(mm)	P0(mm)	P2(mm)	F(mm)	E(mm)	P(mm)	t(mm)
WCM7060	16.00+0.3/-0.1	7.50±0.1	6.3±0.1	3.8±0.1	1.50+0.10/-0.00	1.50±0.1	3.8±0.1	4.0±0.1	2.0±0.1	7.5±0.1	1.75±0.1	12.0±0.1	0.35±0.05

9-3. Packaging Quantity

Size	Reel
WCM7060	1500

9-4. Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

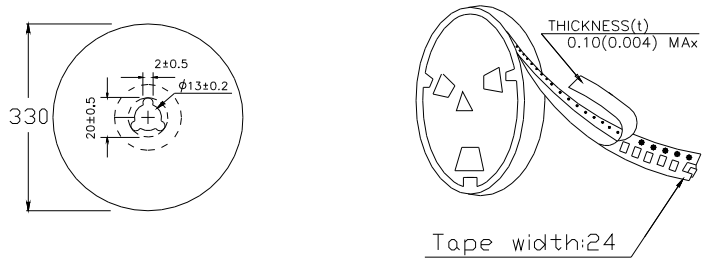
Application Notice

- Storage Conditions(component level)
  To maintain the solderability of terminal electrodes:
  1. TAI-TECH products meet IPC/JEDEC J-STD-020E standard-MSL, level 1.
  2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.

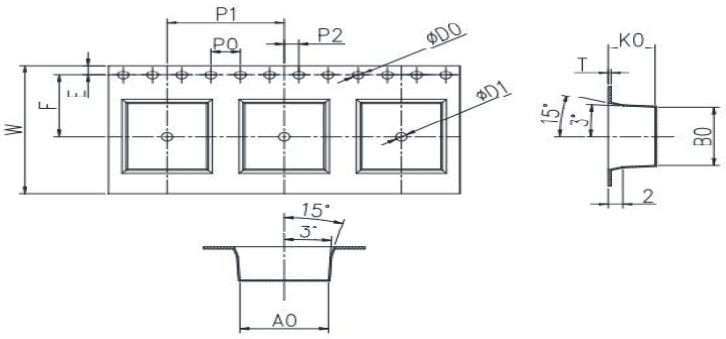
- Transportation
  1.Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

9. Packaging Information

9-1. Reel Dimension



9-2. Tape Dimension

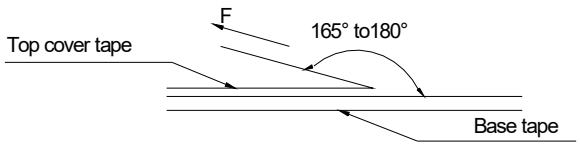


Series	W(mm)	E(mm)	F(mm)	P0(mm)	P2(mm)	P1(mm)	B0(mm)	T(mm)	A0(mm)	K0(mm)	D0(mm)	D1(mm)
WCM9070	24.00±0.3	1.75±0.1	11.50±0.1	4.00±0.1	2.00±0.1	16.00±0.1	9.60±0.1	0.40±0.05	7.60±0.1	5.10±0.1	1.50±0.1	1.50±0.1

9-3. Packaging Quantity

Size	Reel
WCM9070	700

9-4. Tearing Off Force



The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions(referenced ANSI/EIA-481-C-2003 of 4.11 stadnard).

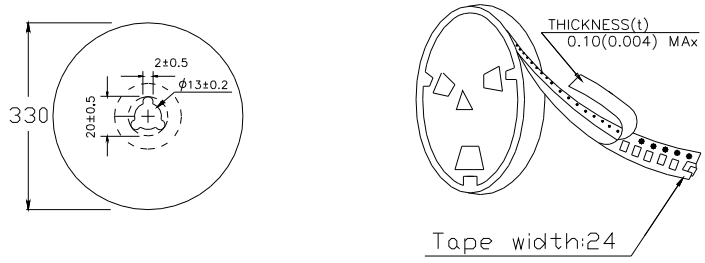
Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Application Notice

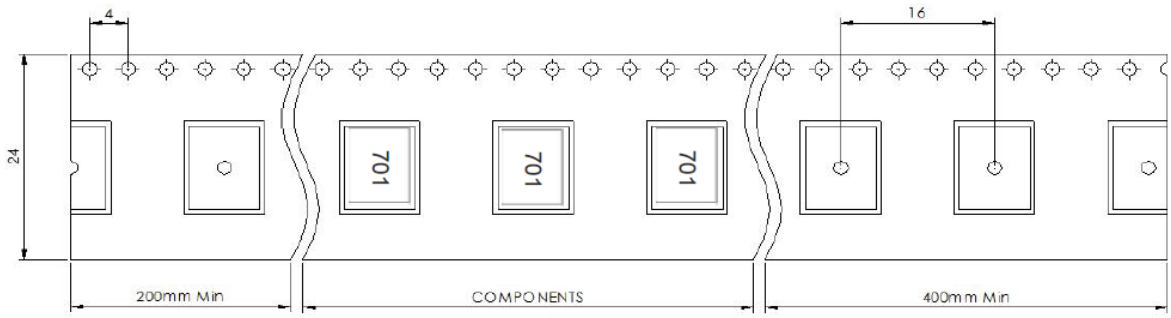
- Storage Conditions(component level)
  To maintain the solderability of terminal electrodes:
  1. TAI-TECH products meet IPC/JEDEC J-STD-020E standard-MSL, level 1.
  2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.
- Transportation
  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

9. Packaging Information

9-1. Reel Dimension



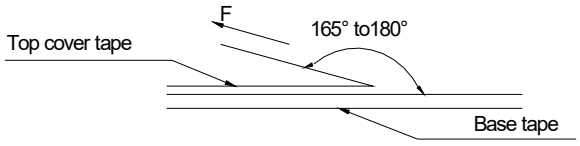
9-2. Tape Dimension



9-3. Packaging Quantity

Size	Reel
WCM1211	500

9-4. Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

Application Notice

・Storage Conditions(component level)
To maintain the solderability of terminal electrodes:
1. TAI-TECH products meet IPC/JEDEC J-STD-020E standard-MSL, level 1.
2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
3. Recommended products should be used within 12 months form the time of delivery.
4. The packaging material should be kept where no chlorine or sulfur exists in the air.

・Transportation
1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

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