

APPROVAL SHEET

RF Dielectric Resonator Filter Series – RoHS Compliance

5150 ~ 5330 MHz Working Frequency

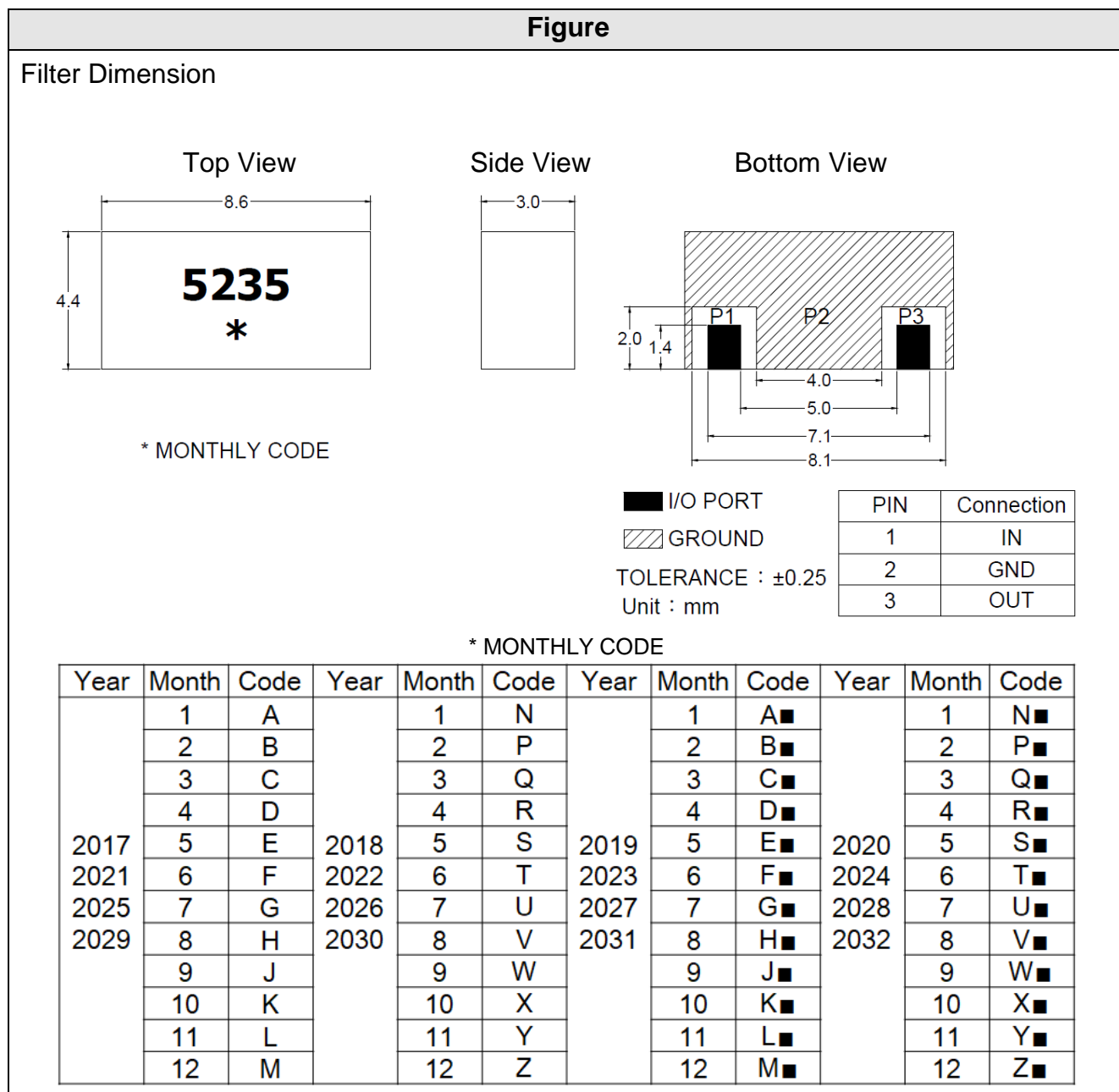
P/N: WDBPF5235180K9T

*Contents in this sheet are subject to change without prior notice.

APPLICATIONS

1. 5150 ~ 5330 MHz Working Frequency

DIMENSIONS



ELECTRICAL CHARACTERISTICS

WDBPF5235180K9T	Specification
Frequency range	5150 ~ 5330 MHz
Insertion Loss	2.5 dB max.
Pass Band Ripple	1.3 dB max.
Attenuation	38.0 dB min. @ 30~2700MHz 16.0 dB min. @ 3453~3547 MHz 33.0 dB min. @ 3667~3883 MHz 50.0 dB min. @ 5490~5850 MHz 20.0 dB min. @ 7200~7500 MHz
VSWR	2.0 max.
Power Capacity	1W max.
Impedance	50 Ω
Moisture sensitivity levels	MSL is LEVEL 3 (Refer to : IPC/JEDEC J-STD-020)

Operating & Storage Condition (Component)

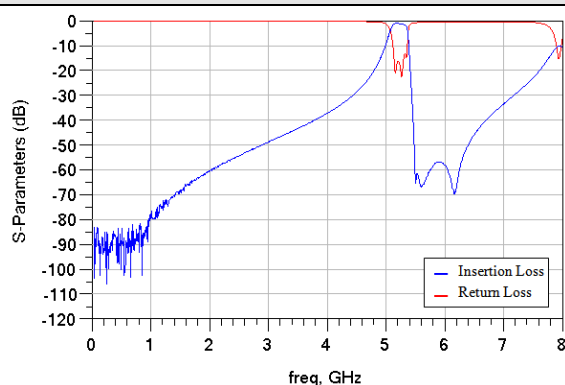
Operation Temperature Range: -40°C ~ +105°C

Storage Temperature Range: -40°C ~ +85°C

Storage Condition before Soldering (Included packaging material)

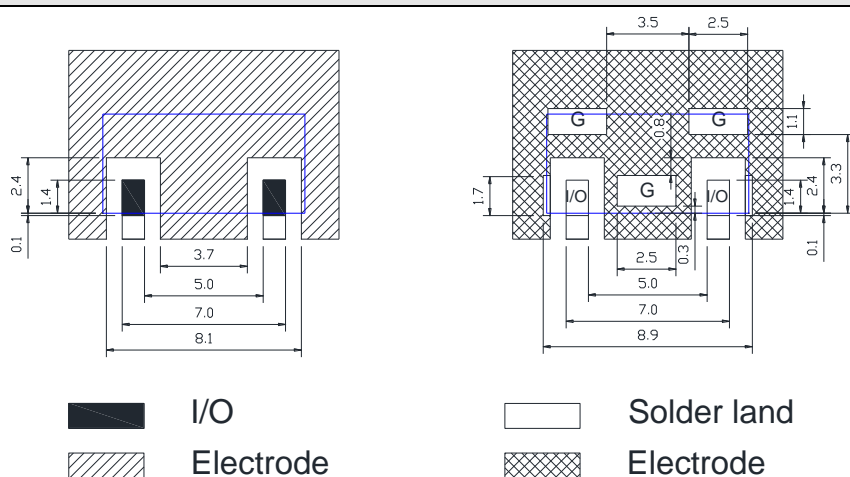
Storage Temperature Range: 0°C ~ +40 °C

Humidity: 80% relative humidity or less

Typical Electrical Chart

LAND PATTERN

Figure

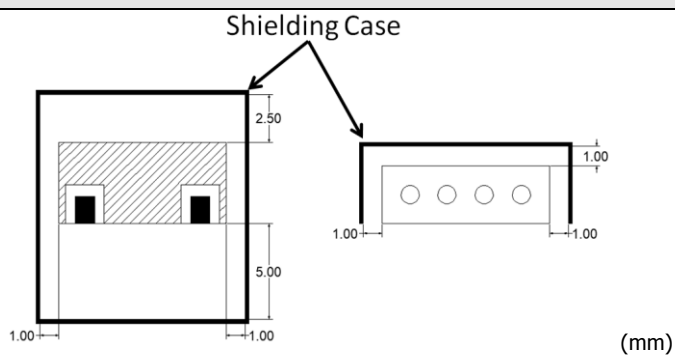


I/O Pads must be connected to 50Ω impedance

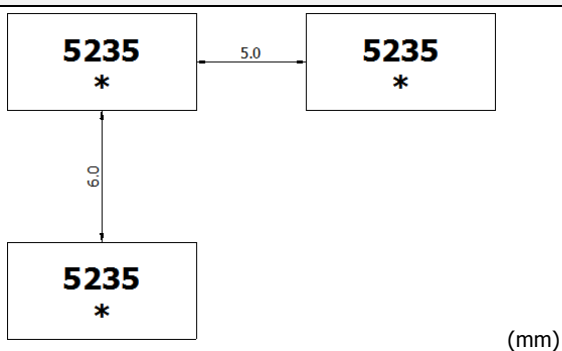
Recommend metal mask thickness : 0.1mm

Note : Suggesting the thickness of I/O pads to ground layer are greater than 0.5mm

Shielding case layout guide



The distance between each DR filter

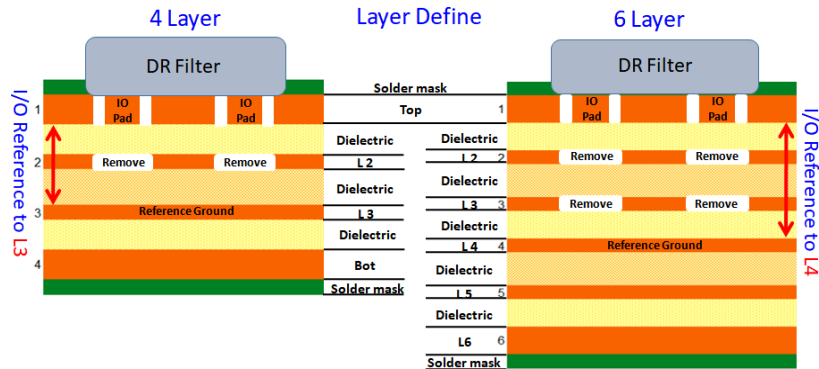


PCB RECOMMENDED PATTERN FOR FILTER

Note:

Clearance area location in L2 (4, 6 layer PCB), L3 (6 layer PCB) is right under top layer's clearance area and the size is the same.

It should keep a distance over **0.5mm** between I/O pads and reference ground to avoid large capacitance appear



RELIABILITY TEST

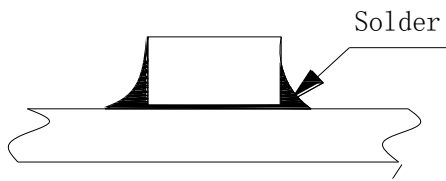
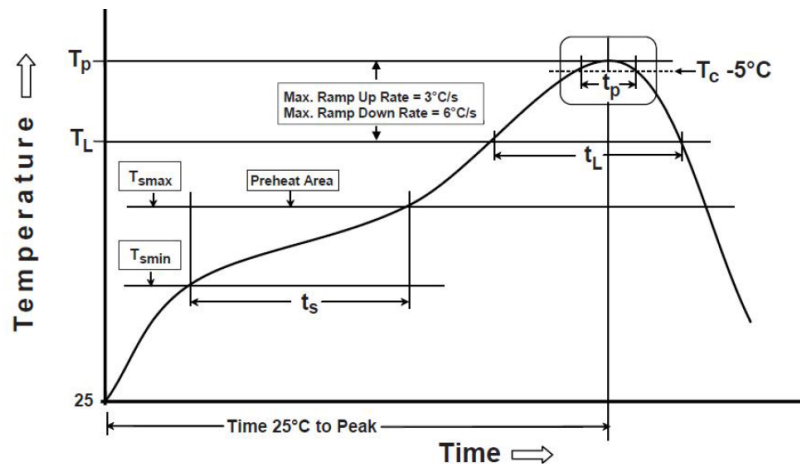
No.	Item	Test Condition	Remark
5.1	Humidity Test	The device is subjected to 90%~95% relative humidity 40 °C±2°C for 96h~98h, then dry out at 25°C±5°C and less than 65% relative humidity for 2h~4h. After dry out the device shall satisfy the specification in table 1.	It shall fulfill the specifications in Table 1.
5.2	High Temperature Exposure	The device shall satisfy the specification in table 1 after leaving at 105°C for 16h, provided it would be measured after 2h~4h leaving in 25°C±5°C and less than 65% relative humidity.	It shall fulfill the specifications in Table 1.
5.3	Low Temperature	The device shall satisfy the specification in table 1 after leaving at -40°C for 16h, provided it would be measured after 2h~4h leaving in 25°C±5°C and less than 65% relative humidity.	It shall fulfill the specifications in Table 1.
5.4	Temperature Cycle	Subject the device to -25°C for 30 min. followed by a high temperature of 105°C for 30 min cycling shall be repeated 5 times. At the room temperature for 1h~4h prior to the measurement.	It shall fulfill the specifications in Table 1.
5.5	Vibration	Subject the device to vibration for 2h each in x、y and z axis with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10Hz~55Hz.	It shall fulfill the specifications in Table 1.
5.6	Soldering Test	The device should be satisfied after preheating at 120°C ~150°C for 60seconds and dipping in soldering Sn an 260°C±5°C for 10±1 seconds.	Mechanical damage shall not occur.
5.7	Solder Ability	Dipped in 260°C±5°C solder bath for 3s±0.5 s with rosin flux (25wt% ethanol solution.)	The terminals shall be at least 95% covered by solder.
5.8	Terminal Pressure Strength	 <p>The device is subjected to be soldered to be soldered on test PCB. Then apply 5N of force for 10s±1s in the direction of the arrow.</p>	Mechanical damage such as breaks shall not occur.

Table 1

Item	Characteristics after test
Insertion Loss Change dB max	±0.3
Ripple dB max	±0.3
Attenuation Change dB min	±2.0
Note: The limits in the above table are referenced to the initial measurements.	

SOLDERING CONDITION

Typical examples of soldering processes that provide reliable joints without any damage are given in Fig 2,

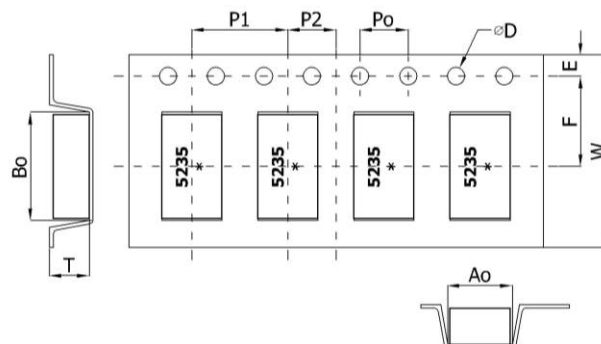

Fig 2. Infrared soldering profile

Phase	Profile features	Pb-Free Assembly
PREHEAT	-Temperature Min (T _{smin}) -Temperature Max (T _{smax}) -Time (t _s)	150°C 200°C 60-120 seconds
RAMP-UP	Avg. Ramp-up Rate (From 200°C to 260°C)	3°C/second(max)
REFLOW	-Temperature (T _L) -Total Time above 220°C (t _L)	220°C 30-100 seconds
PEAK	-Temperature (T _p) -Time (t _p)	260°C 25 seconds
RAMP-DOWN	Rate (From T _p to T _L)	2-6°C/second
Time from 25°C to Peak Temperature		8 minutes max
Composition of solder paste		Ag3.0/Cu0.5/ Sn96.5

ORDERING CODE

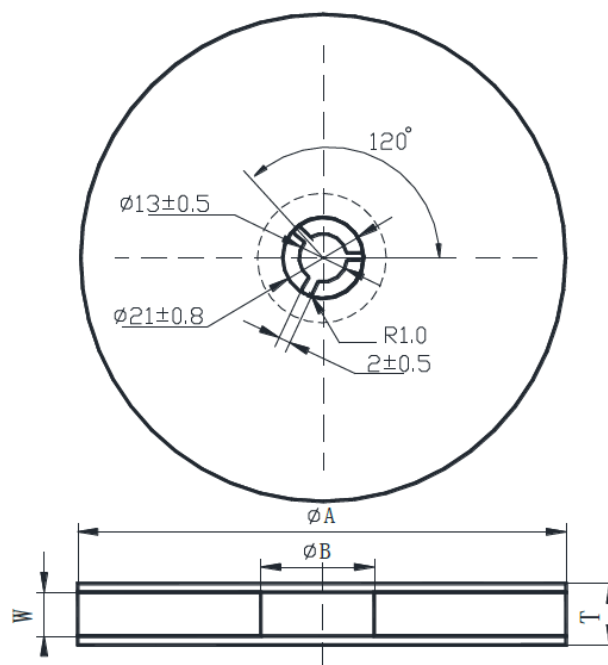
WD	BPF	5235	180	K	9	T
Walsin RF module	Module type Dielectric Filter	Frequency 5235: Center Freq. (5235MHz)	Bandwidth 180: Bandwidth (180MHz)	Application ISM 5.2/ 5.8 Dual Band	Serial Number Design Code	Packing T : Reeled

Minimum Ordering Quantity: 2000 pcs per reel.

PACKAGING


Index	Ao	Bo	ΦD	T	W
Dimension (mm)	4.6 ± 0.1	9.0 ± 0.2	1.55 ± 0.05	3.3 ± 0.1	16.0 ± 0.2
Index	E	F	Po	P1	P2
Dimension (mm)	1.75 ± 0.1	7.5 ± 0.1	4.0 ± 0.1	8.0 ± 0.1	4.0 ± 0.1

Reel dimensions



ϕA	ϕB	W	T	Pieces per reel	Carrier tape size
330 ± 3	80min	16.4min	22.4max	2000typ.	16

Others

1 Caution

1.1 Don't apply excess mechanical stress to the component and terminals at soldering. Do not use this product with bend.

1.2 Do not clean or wash the component for it is not hermetically sealed.

1.3 Do not use strong acidity flux , more than 0.2wt% chlorine content , in flow soldering.

1.4 Don't be close to fire.

1.5 This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit

1.6 Expire date (Shelf life) of the products is six months after delivery under the conditions of a sealed and an unopened package. Please use the products within six months after delivery. If you store the products for a long time (more than six months), use carefully because the products may be degraded in the solder ability or rusty. Please confirm solder ability and characteristics for the products regularly.

1.7 Please contact us before using the product as automobile electronic component.

2 Notice

2.1 Please return one of these specifications after your signature of acceptance.

2.2 When something gets doubtful with this specification, we shall jointly work to get an agreement



化學實驗室-高雄 Chemical Laboratory - Kao., SGS Taiwan Ltd.

試驗報告

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Test Report

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 014762-94-8)	mg/kg	參考BS EN 14582:2016, 以離子層析儀分析. / With reference to BS EN 14582:2016. Analysis was performed by IC.	50	n.d.
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 022537-15-1)	mg/kg		50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 010097-32-2)	mg/kg		50	n.d.
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 014362-44-8)	mg/kg		50	n.d.