

APPROVAL SHEET

RF Dielectric Resonator Filter Series – RoHS Compliance

5925 ~ 7125 MHz Working Frequency

P/N: WDBPF6525600K24T

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

- 5925 ~ 7125 MHz Working Frequency
- Halogen Free / RoHS Compliant Product
- For FCC

Technical drawing of the W6525 component showing three views: Top View, Side View, and Bottom View. Dimensions are in mm.

- Top View:** Shows a rectangular component with a total width of 9.40 mm and a total height of 4.10 mm [4.6MAX]. The component features a central rectangular area with a width of 7.90 mm and a height of 1.65 mm. The central area is divided into three sections: a left section (1), a middle section (3), and a right section (2). The left section (1) has a width of 1.4 mm and a height of 1.5 mm. The middle section (3) has a width of 4.00 mm and a height of 1.65 mm. The right section (2) has a width of 1.55 mm and a height of 1.65 mm. The component also has a central circular feature with a diameter of 1.0 mm and a central rectangular feature with a width of 1.4 mm and a height of 1.5 mm. The component is labeled "W6525" and "G".
- Side View:** Shows the component from the side, with a total height of 3.00 mm and a total width of 1.0 mm.
- Bottom View:** Shows the component from the bottom, with a total width of 9.40 mm and a total height of 2.90 mm. The component features a central rectangular area with a width of 7.90 mm and a height of 1.65 mm. The central area is divided into three sections: a left section (1), a middle section (3), and a right section (2). The left section (1) has a width of 1.4 mm and a height of 1.5 mm. The middle section (3) has a width of 4.00 mm and a height of 1.65 mm. The right section (2) has a width of 1.55 mm and a height of 1.65 mm. The component also has a central circular feature with a diameter of 1.0 mm and a central rectangular feature with a width of 1.4 mm and a height of 1.5 mm. The component is labeled "W6525" and "G".

Tolerance: ± 0.2
Unit: mm

Pin Assignment		
Number	Name	Description
1	I/O Port1	Input/Output
2	I/O Port2	Input/Output
3,4,5,6	GND	Ground

*Monthly Code

2021/2023/2025/2027		2022/2024/2026/2028	
MONTH	CODE	MONTH	CODE
JAN	A	JAN	N
FEB	B	FEB	P
MAR	C	MAR	Q
APR	D	APR	R
MAY	E	MAY	S
JUN	F	JUN	T
JUL	G	JUL	U
AUG	H	AUG	V
SEP	J	SEP	W
OCT	K	OCT	X
NOV	L	NOV	Y
DEC	M	DEC	Z

ELECTRICAL CHARACTERISTICS

WDBPF6525600K24T	Specification
Frequency range	5925 ~ 7125MHz
Insertion Loss	3.5 dB typ / 4.0 dB max @5925 ~ 5945MHz 3.0 dB typ / 3.5 dB max @5945 ~ 7125MHz
Pass Band Ripple	1.5 dB typ / 2.0 dB max @5925 ~ 5945MHz 2.0 dB typ / 2.5 dB max @5945 ~ 7125MHz
Attenuation	50 dB min / 60 dB typ @0 ~ 5640MHz 45 dB min / 50 dB typ @5640 ~ 5835MHz 4 dB min / 6 dB typ @11850 ~ 14250MHz 10 dB min / 25 dB typ @17775 ~ 21375MHz
VSWR	1.8 typ / 2.3 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 ~ +100°C

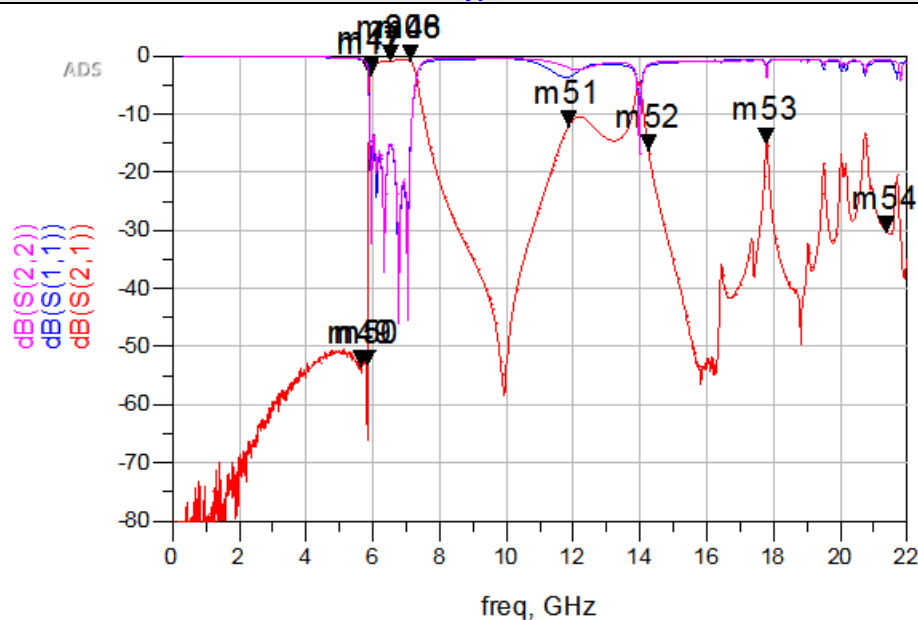
Storage Temperature Range: -40°C ~ +85°C

Storage Condition before Soldering (Included packaging material)

Storage Temperature Range: +5 ~ +40 °C

Humidity: 30 to 70% relative humidity

Typical Electrical Chart



m17
freq=5.925GHz
dB(S(2,1))=-3.530

m20
freq=6.525GHz
dB(S(2,1))=-0.915

m46
freq=7.125GHz
dB(S(2,1))=-0.896

m47
freq=5.945GHz
dB(S(2,1))=-2.758

m48
freq=7.125GHz
dB(S(2,1))=-0.896

m49
freq=5.640GHz
dB(S(2,1))=-53.306

m50
freq=5.835GHz
dB(S(2,1))=-53.282

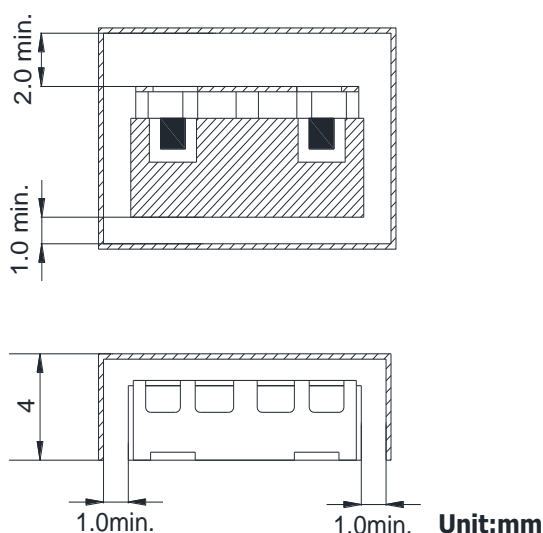
m51
freq=11.85GHz
dB(S(2,1))=-12.085

m52
freq=14.25GHz
dB(S(2,1))=-16.248

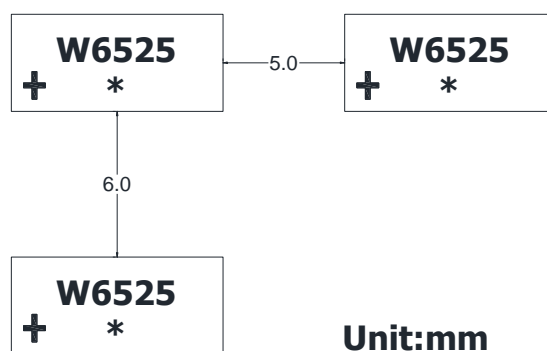
m53
freq=17.77GHz
dB(S(2,1))=-15.026

m54
freq=21.37GHz
dB(S(2,1))=-30.339

Shielding case layout guide



The distance between each DR Filter

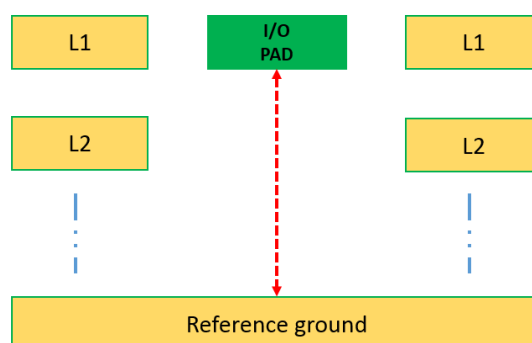


PCB RECOMMENDED PATTERN FOR FILTER

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 **1.0 mm** between I/O pads and reference ground to avoid large capacitance appear



RELIABILITY TEST

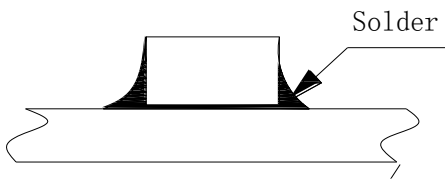
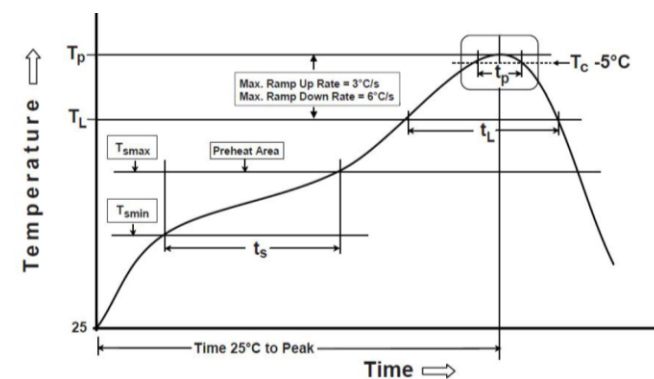
No.	Item	Test Condition	Remark
5.1	Humidity Test	The device is subjected to 90%~95% relative humidity $40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ for 96h~98h, then dry out at $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ and less than 65% relative humidity for 2h~4h. After dry out the device shall satisfy 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 $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 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 $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 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 $260^{\circ}\text{C}\pm 5^{\circ}\text{C}$ for 10 ± 1 seconds.	Mechanical damage shall not occur.
5.7	Solder Ability	Dipped in $260^{\circ}\text{C}\pm 5^{\circ}\text{C}$ solder bath for $3\text{s}\pm 0.5\text{s}$ 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 $10\text{s}\pm 1\text{s}$ 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 Change dB max	± 0.3
Return loss. dB max	± 2.0
Attenuation Change dB max	± 4.0
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,

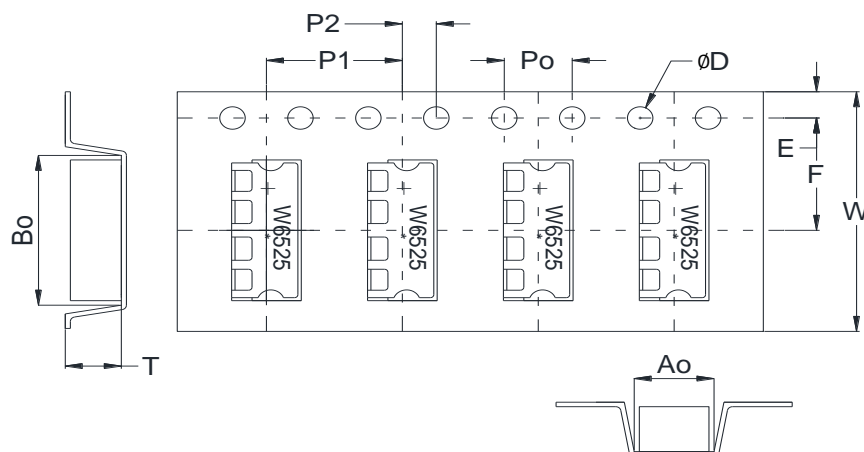
**Fig 2. Infrared soldering profile**

Phase	Profile features	Pb-Free Assembly
PREHEAT	-Temperature Min (Tmin) -Temperature Max (Tmax) -Time (ts)	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 (TL) -Total Time above 220°C (tL)	220°C 30-100 seconds
PEAK	-Temperature (TP) -Time (tp)	260°C 25 seconds
RAMP-DOWN	Rate (From TP to TL)	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

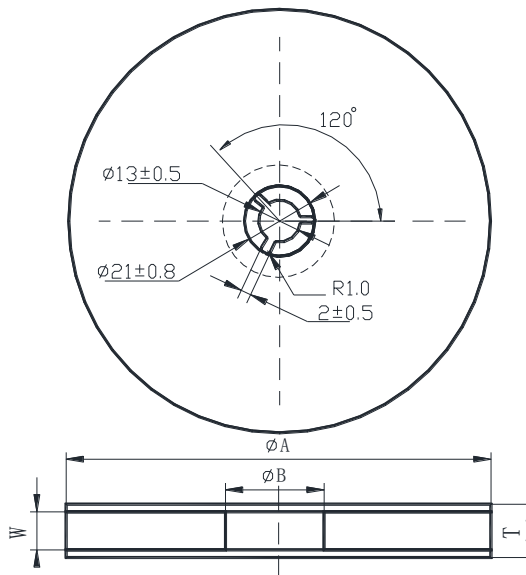
WD	BPF	6525	600	K	24	T
Walsin RF module	Module type Dielectric Filter	Frequency 6525: Center Freq. (6525MHz)	Bandwidth 600: Bandwidth (600MHz)	Application K:5150 ~ 7125 MHz	Serial Number Design Code	Packing T : Reeled

Minimum Ordering Quantity: 1000 pcs per reel.

PACKAGING

Index	Ao	Bo	ΦD	T	W
Dimension (mm)	4.7 ± 0.1	10.0 ± 0.2	1.50 ± 0.1	3.3 ± 0.1	24.0 ± 0.2
Index	E	F	Po	P1	P2
Dimension (mm)	1.75 ± 0.1	11.5 ± 0.15	4.0 ± 0.1	12.0 ± 0.1	2.0 ± 0.1

Reel dimensions



φA	φB	W	T	Pieces per reel	Carrier tape size
330±3	80min	24min	26max	1000typ.	24

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