

# TDK RF Products for Wireless LAN

3/5/2004

## for 2.4GHz

### Multilayer Band Pass Filter

Start Freq. MHz	Stop Freq. MHz	Ins. Loss dB (MAX)	Atenuation (MIN.)				Size mm (typ.)	Part No.		
			MHz	dB	MHz	dB				
2400	2497	2.0	1990	40	2170	20	4897	30	3.2x2.5x1.3	<a href="#">DEA322448BT-2009</a>
2400	2500	2.3	1250	40	2170	10	4800	35	3.2x1.6x1.3	<a href="#">DEA312450BT-2010A1</a>
2400	2500	1.2	915	35	1785	35	4800	30	2.5x2.0x1.0	<a href="#">DEA252400BT-2027A1</a>
2300	2500	1.4	915	35	1910	35	4800	30	2.5x2.0x1.0	<a href="#">DEA252450BT-2030A1</a>
2400	2500	1.5	915	35	2100	20	4800	23	2.5x2.0x1.0	<a href="#">DEA252450BT-2031A1</a>
2400	2500	2.1	915	45	2170	20	4800	30	2.5x2.0x1.0	<a href="#">DEA252450BT-2024C1</a>
2400	2500	3.0	915	43	2700	25	4800	25	2.5x2.0x1.3	<a href="#">DEA252450BT-2037C1</a>
2400	2500	1.5	1300	22	3600	30	4800	38	2.0x1.2x1.0	<a href="#">DEA202450BT-1213B1</a>
2400	2500	2.3	1250	30	2100	10	4800	25	2.0x1.2x1.0	<a href="#">DEA202450BT-1195A1</a>
2400	2500	3.0	1250	30	1900	30	4800	25	1.6x0.8x0.6	<a href="#">DEA162450BT-1210A2</a>

### Block Band Pass Filter

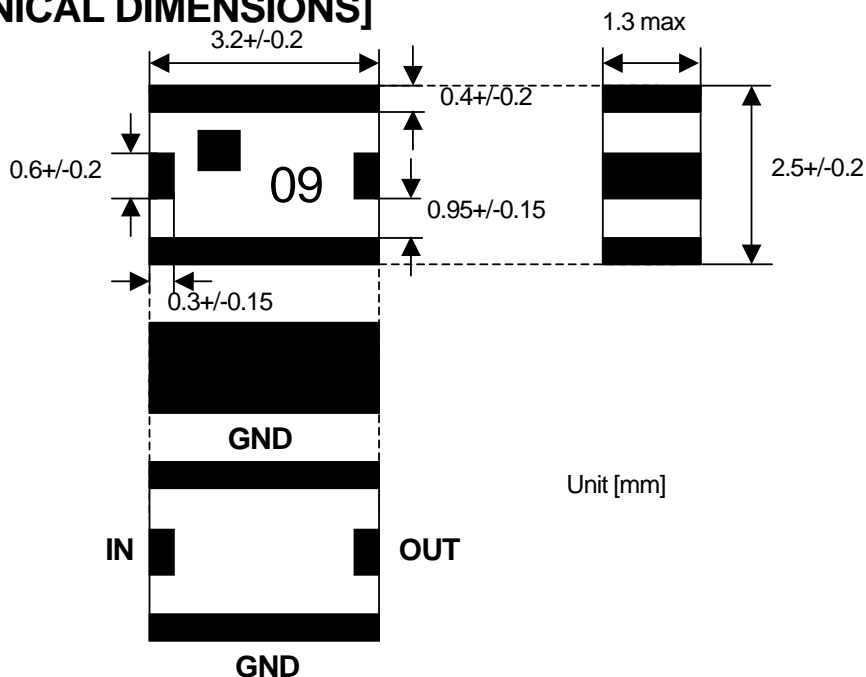
Start Freq. MHz	Stop Freq. MHz	Ins. Loss dB (MAX)	Atenuation (Typ.)				Size mm (typ.)	Part No.		
			MHz	dB	MHz	dB				
2400	2500	1.0	1950	46	2100	21	3000	24	3.2x3.0x1.8	<a href="#">CF61A4601</a>

	Sample Available
	New Products
	Under Developing

## MULTILAYER BANDPASS FILTER SPECIFICATION

P/N: **DEA322448BT-2009**

### [MECHANICAL DIMENSIONS]



### [ELECTRICAL CHARACTERISTICS] $T_a=25\text{ }^\circ\text{C}$

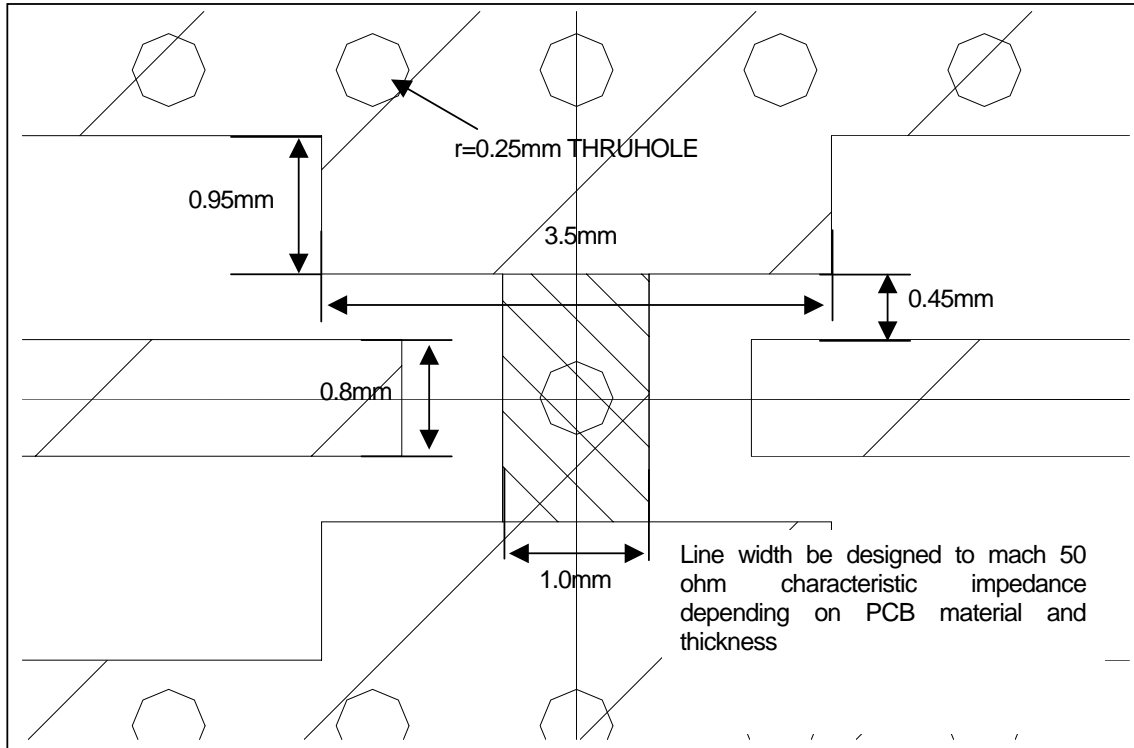
No.	PARAMETER	FREQ (MHz)	SPECIFICATION		UNIT
			Min.	Max.	
1	Insertion Loss	2400-2497	-	2.0	dB
2	Return Loss	2400-2497	9.0	-	dB
3	Attenuation	DC-880	20.0	-	dB
4	Attenuation	880-1250	40.0	-	dB
5	Attenuation	1250-1680	20.0	-	dB
6	Attenuation	1680-1990	40.0	-	dB
7	Attenuation	1990-2170	20.0	-	dB
8	Attenuation	2f <sub>0</sub> & 3f <sub>0</sub>	30.0	-	dB

### [TEMPERATURE RANGE]

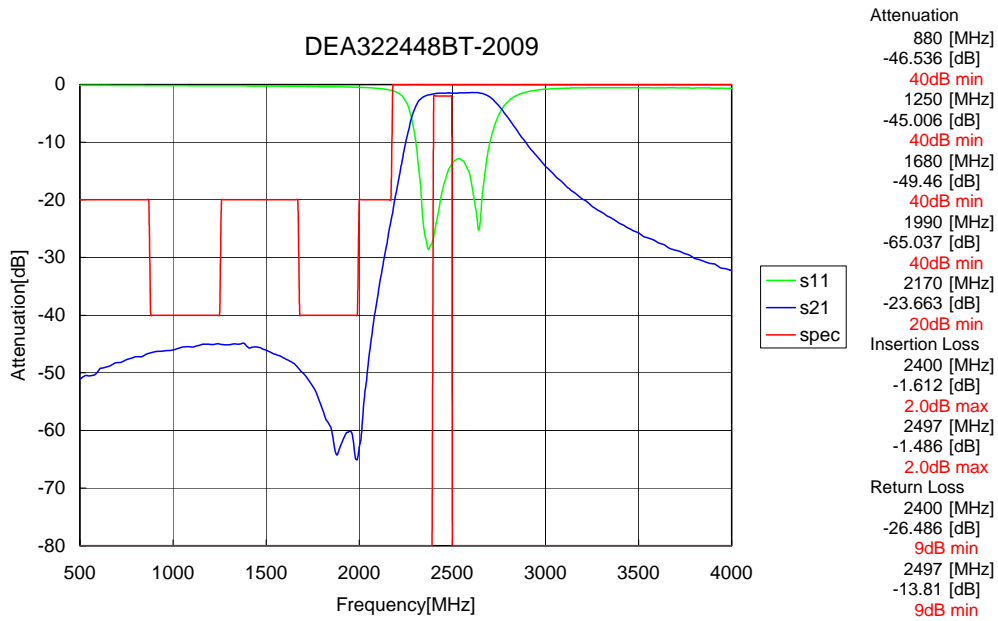
Storage Temperature	-40 ~ +85 °C
Operation Temperature	-40 ~ +85 °C

Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

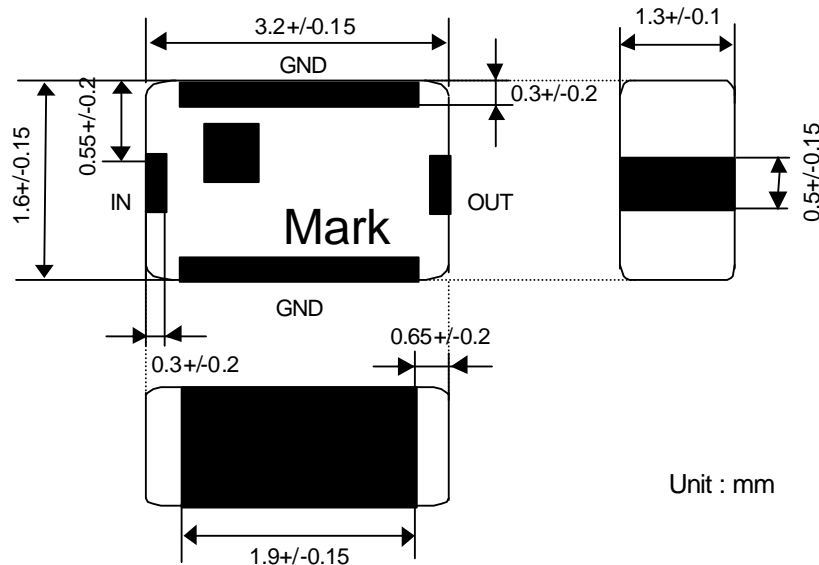
**[ Recommended PCB Pattern ]**



**[ Frequency characteristic ]**



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**MULTILAYER BANDPASS FILTER SPECIFICATION****P/N : DEA312450BT-2010A1****[ MECHANICAL DIMENSIONS ]**

Notes : These samples are marked with a trial sample identification. This applies for these samples only.  
In mass production, this sample marking will be changed to show in the TDK full specification.

**[ ELECTRICAL CHARACTERISTICS at 25 °C ]**

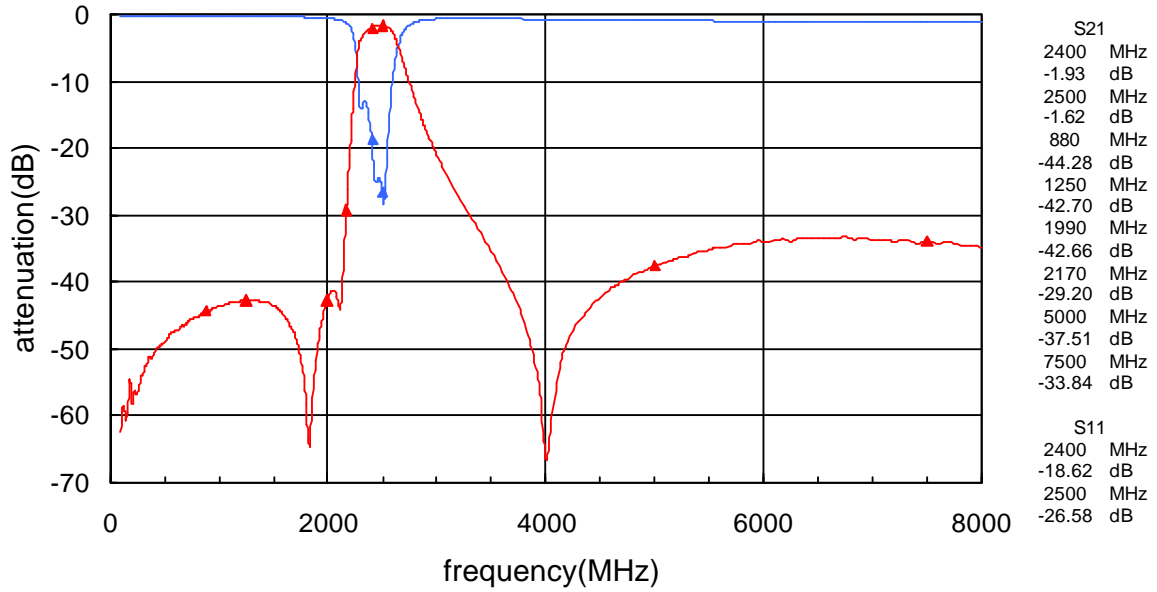
No.	PARAMETER	FREQ. (MHz)	MIN	TYP	MAX	Units
1	CENTER FREQUENCY	2450	-	-	-	dB
2	INSERTION LOSS	2400 - 2500		-	2.3	dB
3	RETURN LOSS	2400 - 2500	9	-		dB
4	ATTENUATION	880 - 1250	40			dB
5	ATTENUATION	1710 - 1990	40	-		dB
6	ATTENUATION	1990 - 2170	10	-		dB
7	ATTENUATION	4800 - 5000	35	-		dB
8	ATTENUATION	7200 - 7500	30	-		dB

**[ TEMPERATURE RANGE ]**

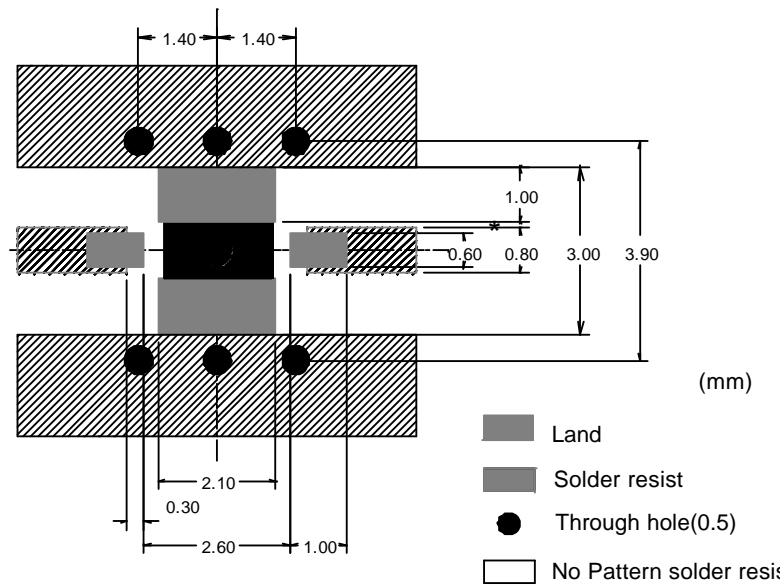
STORAGE TEMPERATURE RANGE : -40 °C ~ +85 °C  
OPERATING TEMPERATURE RANGE : -40 °C ~ +85 °C

Notes : All the technical data and information contained herein are Subject to change without prior notice.

## [ FREQUENCY RESPONSE ]



## [ Recommended PCB Pattern ]



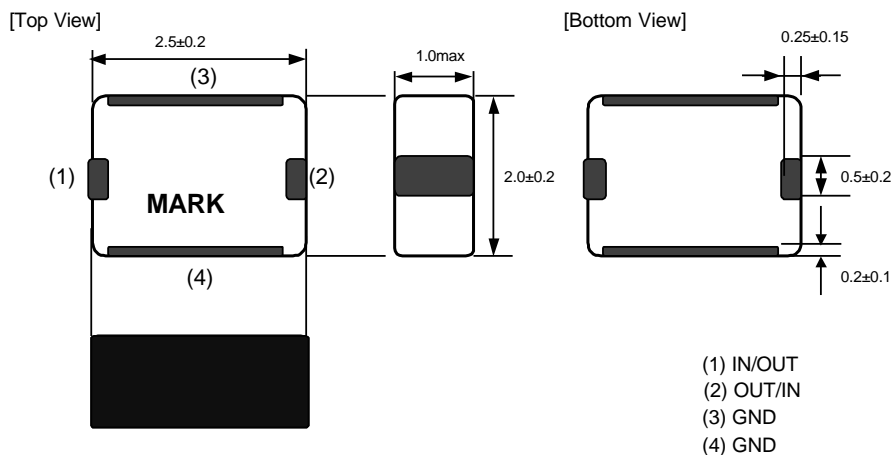
\* Line width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

Notes : All the technical data and information contained herein are Subject to change without prior notice.

# MULTILAYER BANDPASS FILTER SPECIFICATION

P/N: **DEA252450BT-2027A1**

## [MECHANICAL DIMENSIONS]



Unit: mm

## [ELECTRICAL CHARACTERISTICS] $T_a=25\text{ }^\circ\text{C}$

No.	PARAMETER	FREQ (MHz)	SPECIFICATION		UNIT
			Min.	Max.	
1	Insertion Loss	2400-2500	-	1.20	dB
2	Return Loss	2400-2500	10.0	-	dB
3	Attenuation	880-915	35.0	-	dB
4	Attenuation	1710-1785	35.0	-	dB
5	Attenuation	1850-1910	35.0	-	dB
6	Attenuation	4800-5000	30.0	-	dB

## [TEMPERATURE RANGE]

Storage Temperature	-40 ~ +85 °C
Operation Temperature	-40 ~ +85 °C

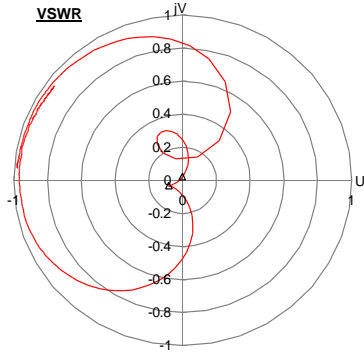
Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

# [FREQUENCY CHARACTERISTICS]

**DEA252450BT-2027A1**

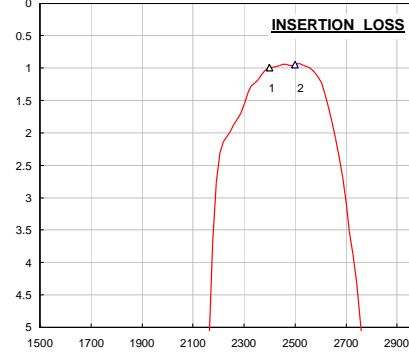
10-Apr-03

S11 POLA REF 1.0 U SCALE 1.0U FS



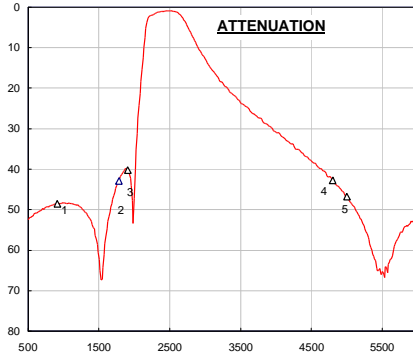
MARKER 1	2400.0 MHz	1.04457
MARKER 2	2500.0 MHz	1.19388
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S21 Log MAG REF 0.0dB SCALE 0.5dB/



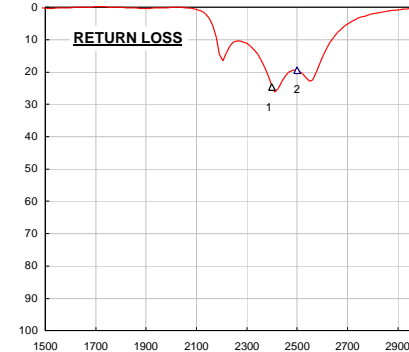
MARKER 1	2400.0 MHz	0.994 dB
MARKER 2	2500.0 MHz	0.947 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S12 Log MAG REF 0.0dB SCALE 10.0dB/



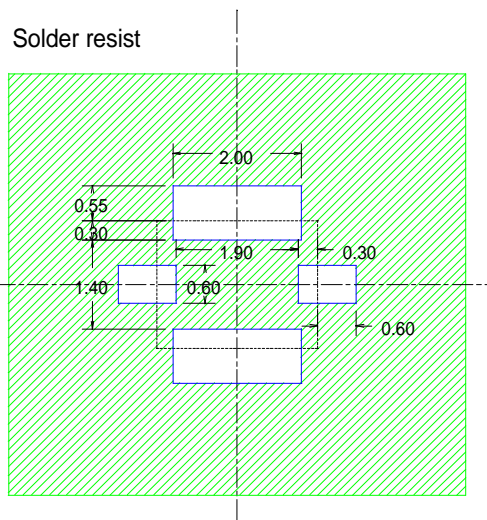
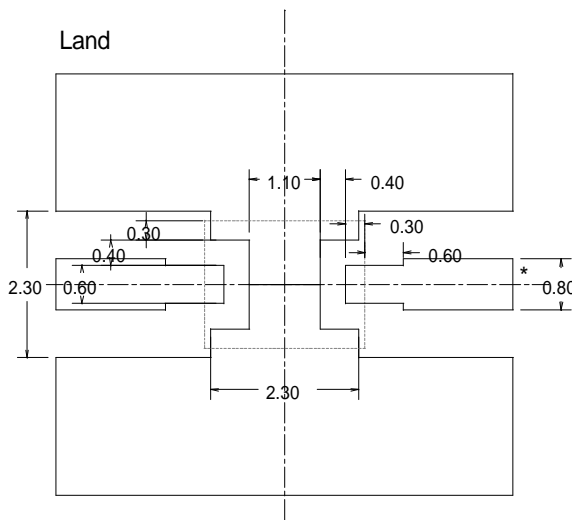
MARKER 1	915.0 MHz	48.604 dB
MARKER 2	1785.0 MHz	42.839 dB
MARKER 3	1910.0 MHz	40.154 dB
MARKER 4	4800.0 MHz	42.742 dB
MARKER 5	5000.0 MHz	46.786 dB
MARKER 6	MHz	

S22 Log MAG REF 0.0dB SCALE 10.0dB/



MARKER 1	2400.0 MHz	24.738 dB
MARKER 2	2500.0 MHz	19.478 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

## [ Recommended PCB Pattern ]



\* Line width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

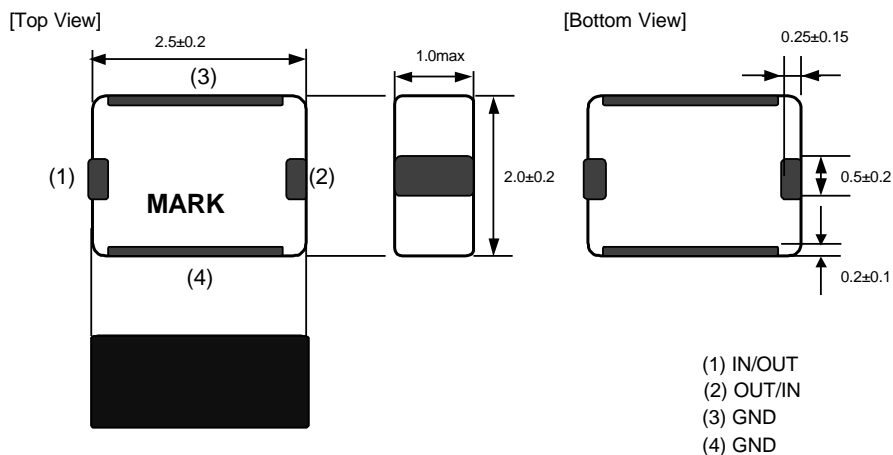
(Unit:mm)

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# MULTILAYER BANDPASS FILTER SPECIFICATION

P/N: **DEA252400BT-2030A1**

## [MECHANICAL DIMENSIONS]



Unit: mm

## [ELECTRICAL CHARACTERISTICS] $T_a = 25 \text{ }^\circ\text{C}$

No.	PARAMETER	FREQ (MHz)	SPECIFICATION		UNIT
			Min.	Max.	
1	Insertion Loss	2300-2500	-	1.4	dB
2	Return Loss	2300-2500	10.0	-	dB
3	Attenuation	880-915	35.0	-	dB
4	Attenuation	1710-1785	35.0	-	dB
5	Attenuation	1850-1910	35.0	-	dB
6	Attenuation	4800-5000	30.0	-	dB

## [TEMPERATURE RANGE]

Storage Temperature	-40 ~ +85 $^\circ\text{C}$
Operation Temperature	-40 ~ +85 $^\circ\text{C}$

Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

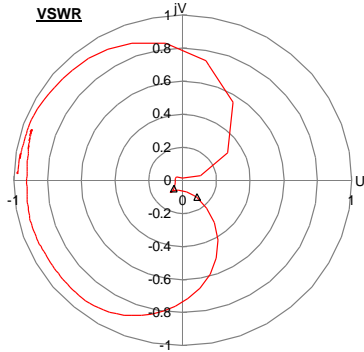


# [FREQUENCY CHARACTERISTICS]

**DEA252400BT-2030A1**

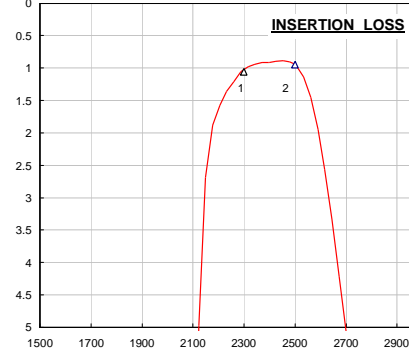
10-Apr-03

S11 POLA REF 1.0 U SCALE 1.0U FS



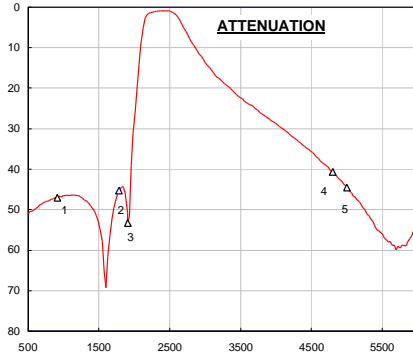
MARKER 1	2300.0 MHz	1.15051
MARKER 2	2500.0 MHz	1.30547
MARKER 3	MHz	dB
MARKER 4	MHz	dB
MARKER 5	MHz	dB
MARKER 6	MHz	dB

S21 Log MAG REF 0.0dB SCALE 0.5dB/



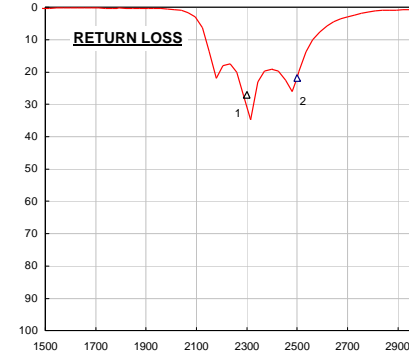
MARKER 1	2300.0 MHz	1.058 dB
MARKER 2	2500.0 MHz	0.943 dB
MARKER 3	MHz	dB
MARKER 4	MHz	dB
MARKER 5	MHz	dB
MARKER 6	MHz	dB

S12 Log MAG REF 0.0dB SCALE 10.0dB/



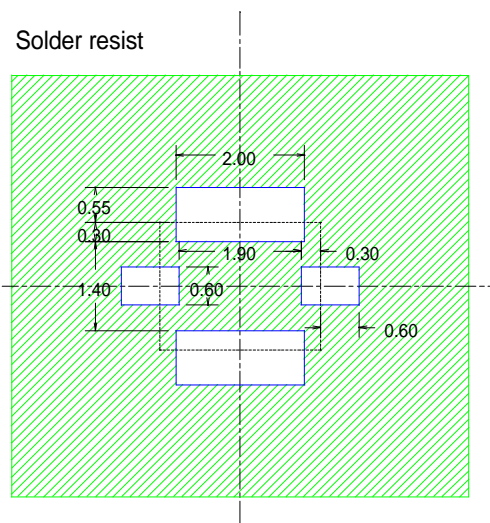
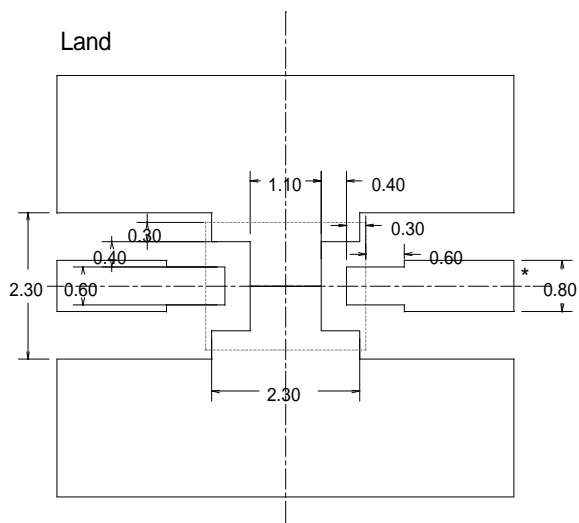
MARKER 1	915.0 MHz	47.006 dB
MARKER 2	1785.0 MHz	45.335 dB
MARKER 3	1910.0 MHz	53.297 dB
MARKER 4	4800.0 MHz	40.660 dB
MARKER 5	5000.0 MHz	44.506 dB
MARKER 6	MHz	dB

S22 Log MAG REF 0.0dB SCALE 10.0dB/



MARKER 1	2300.0 MHz	27.140 dB
MARKER 2	2500.0 MHz	21.893 dB
MARKER 3	MHz	dB
MARKER 4	MHz	dB
MARKER 5	MHz	dB
MARKER 6	MHz	dB

## [ Recommended PCB Pattern ]



\* Line width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

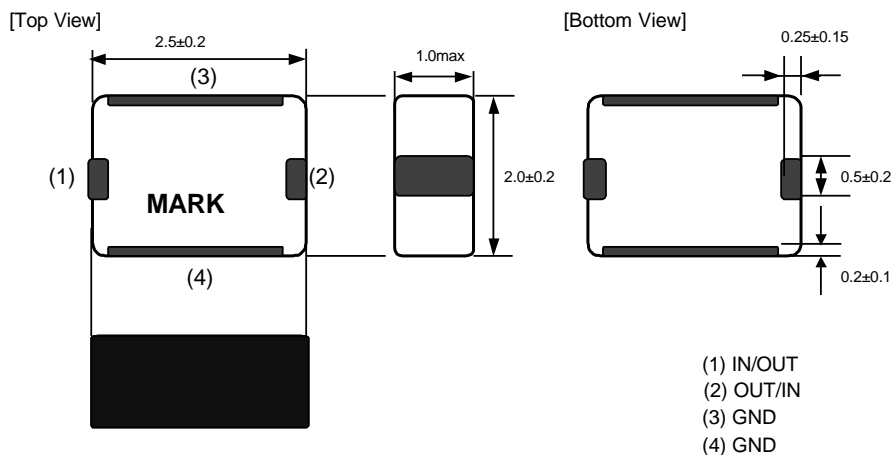
(Unit:mm)

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# MULTILAYER BANDPASS FILTER SPECIFICATION

P/N: **DEA252450BT-2031A1**

## [MECHANICAL DIMENSIONS]



Unit: mm

## [ELECTRICAL CHARACTERISTICS] $T_a = 25 \text{ }^\circ\text{C}$

No.	PARAMETER	FREQ (MHz)	SPECIFICATION		UNIT
			Min.	Max.	
1	Insertion Loss	2400-2500	-	1.50	dB
2	Return Loss	2400-2500	10.0	-	dB
3	Attenuation	915	35.0	-	dB
4	Attenuation	1750	30.0	-	dB
5	Attenuation	2100	20.0	-	dB
6	Attenuation	4800-5000	23.0	-	dB

## [TEMPERATURE RANGE]

Storage Temperature	-40 ~ +85 $^\circ\text{C}$
Operation Temperature	-40 ~ +85 $^\circ\text{C}$

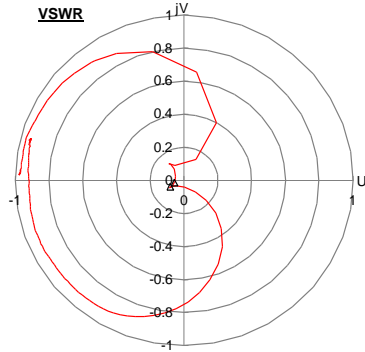
Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

# [FREQUENCY CHARACTERISTICS]

**DEA252450BT-2031A1**

10-Apr-03

S11 POLA REF 1.0 U SCALE 1.0U FS



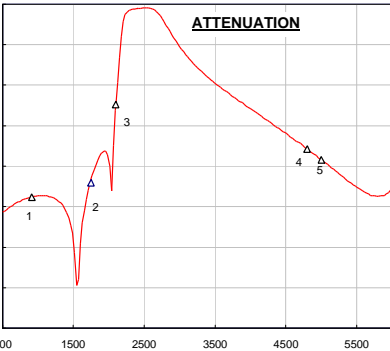
MARKER 1	2400.0 MHz	-1.1224
MARKER 2	2500.0 MHz	-1.1966
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S21 Log MAG REF 0.0dB SCALE 0.5dB/



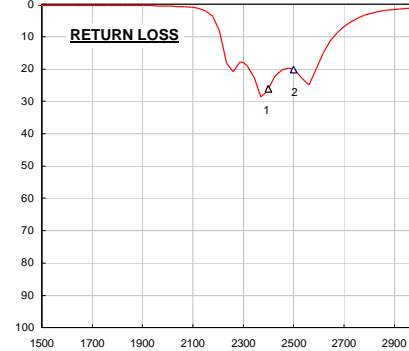
MARKER 1	2400.0 MHz	1.038 dB
MARKER 2	2500.0 MHz	0.943 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S12 Log MAG REF 0.0dB SCALE 10.0dB/



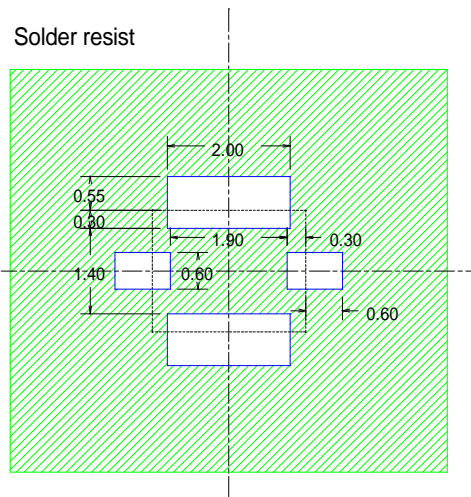
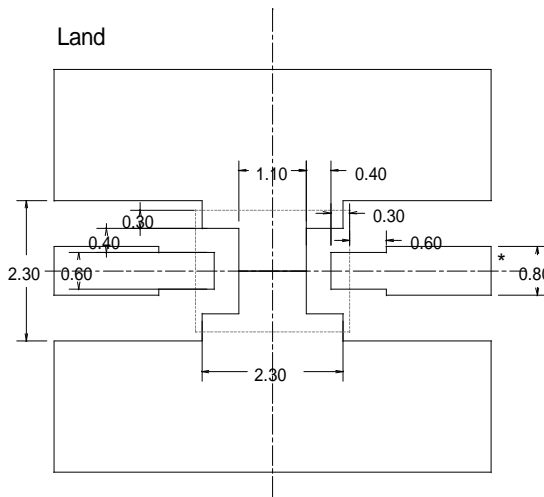
MARKER 1	915.0 MHz	47.591 dB
MARKER 2	1750.0 MHz	44.040 dB
MARKER 3	2100.0 MHz	24.814 dB
MARKER 4	4800.0 MHz	35.737 dB
MARKER 5	5000.0 MHz	38.426 dB
MARKER 6	MHz	

S22 Log MAG REF 0.0dB SCALE 10.0dB/



MARKER 1	2400.0 MHz	26.192 dB
MARKER 2	2500.0 MHz	20.169 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

## [ Recommended PCB Pattern ]



\* Line width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

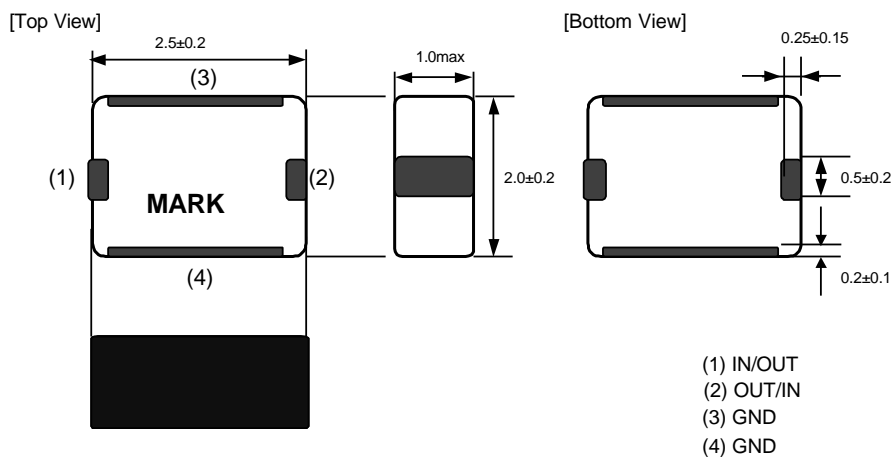
(Unit:mm)

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## MULTILAYER BANDPASS FILTER SPECIFICATION

P/N: **DEA252450BT-2024C1**

### [MECHANICAL DIMENSIONS]



Unit: mm

### [ELECTRICAL CHARACTERISTICS]

No.	PARAMETER	FREQ (MHz)	SPECIFICATION		UNIT
			Min.	Max.	
	Center Frequency	2450	-	-	
1	Insertion Loss	2400-2500	-	2.1	dB
2	Return Loss	2400-2500	10.0	-	dB
3	Attenuation	880-915	45.0	-	dB
4	Attenuation	1710-1990	48.0	-	dB
5	Attenuation	2110-2170	20.0		
6	Attenuation	4800-5000	30.0	-	dB

### [TEMPERATURE RANGE]

Storage Temperature	-40 ~ +85 °C
Operation Temperature	-40 ~ +85 °C

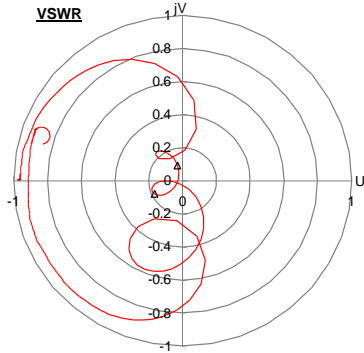
Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

# [FREQUENCY CHARACTERISTICS]

DEA252450BT-2024C1

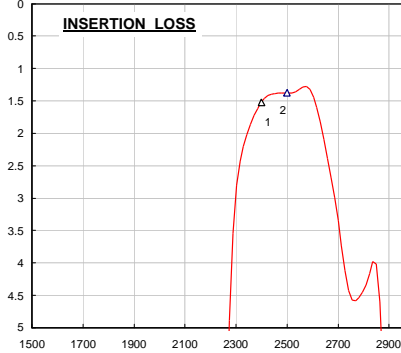
12-Oct-02

S11 POLA REF 1.0 U SCALE 1.0U FS



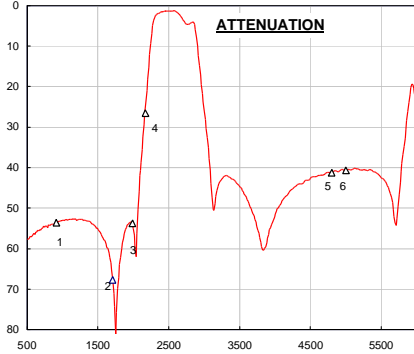
MARKER 1	2400.0 MHz	1.21408
MARKER 2	2500.0 MHz	1.44606
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S21 Log MAG REF 0.0dB SCALE 0.5dB/



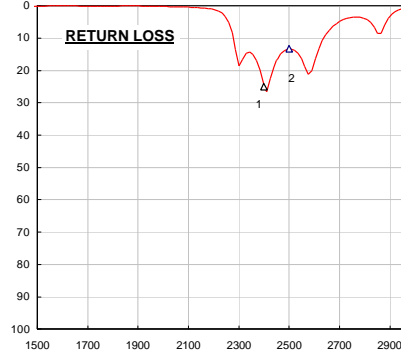
MARKER 1	2400.0 MHz	1.519 dB
MARKER 2	2500.0 MHz	1.368 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S12 Log MAG REF 0.0dB SCALE 10.0dB/



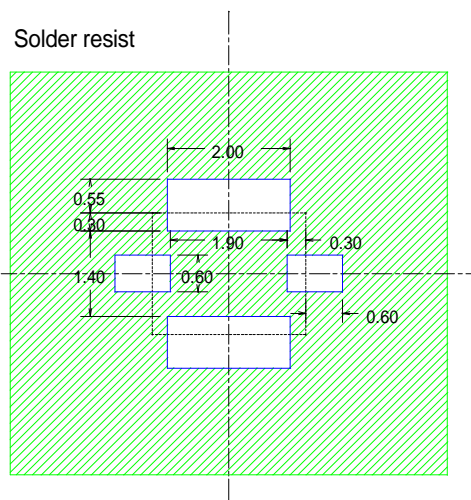
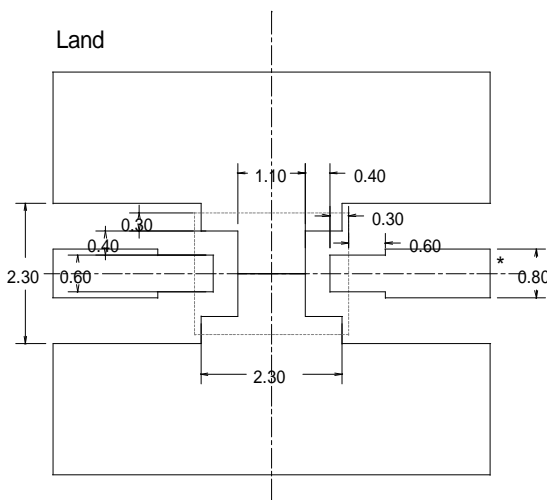
MARKER 1	915.0 MHz	53.585 dB
MARKER 2	1710.0 MHz	67.668 dB
MARKER 3	1990.0 MHz	53.706 dB
MARKER 4	2170.0 MHz	26.614 dB
MARKER 5	4800.0 MHz	41.259 dB
MARKER 6	5000.0 MHz	40.699 dB

S22 Log MAG REF 0.0dB SCALE 10.0dB/



MARKER 1	2400.0 MHz	25.052 dB
MARKER 2	2500.0 MHz	13.361 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

## [ Recommended PCB Pattern ]



\* Line width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

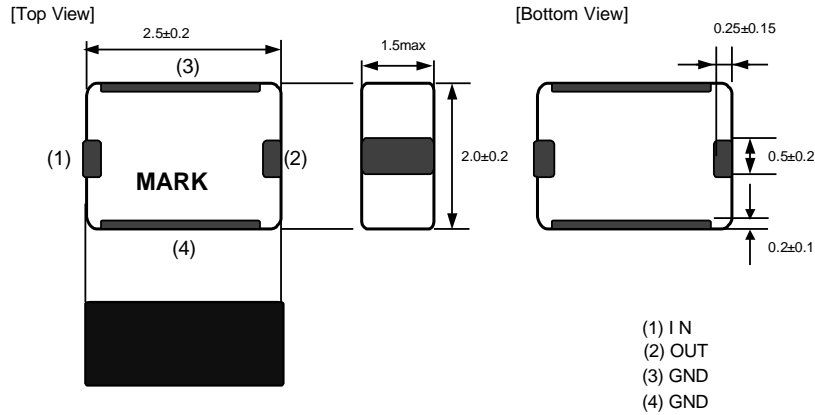
(Unit:mm)

Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

## MULTILAYER BANDPASS FILTER SPECIFICATION

P/N: **DEA252450BT-2037C1**

### [MECHANICAL DIMENSIONS]



Unit: mm

### [ELECTRICAL CHARACTERISTICS] $T_a=25\text{ }^\circ\text{C}$

No.	PARAMETER	FREQ (MHz)	SPECIFICATION		UNIT
			Min.	Max.	
	Center Frequency	2450	-	-	
1	Insertion Loss	2400-2500	-	3.0	dB
2	Return Loss	2400-2500	10.0	-	dB
3	Attenuation	880-915	43.0	-	dB
4	Attenuation	1710-1990	24.0	-	dB
5	Attenuation	2110-2170	14.0	-	dB
6	Attenuation	2700	25.0	-	dB
7	Attenuation	4800-5000	25.0	-	dB

### [TEMPERATURE RANGE]

Storage Temperature	-40 ~ +85 °C
Operation Temperature	-40 ~ +85 °C

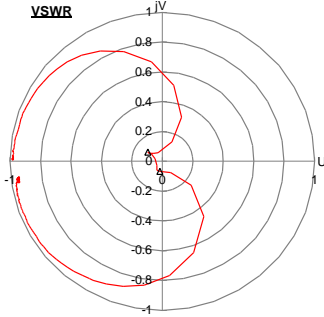
Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

# [FREQUENCY CHARACTERISTICS]

DEA252450BT-2037C1

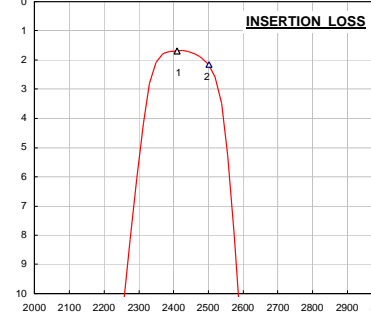
13-Jun-03

S11 POLA REF 1.0 U SCALE 1.0U FS



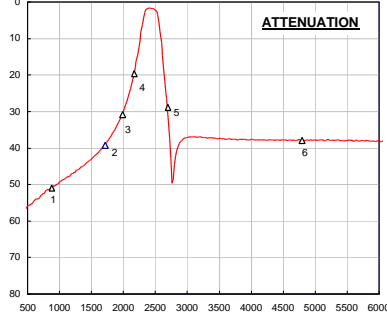
MARKER 1	2410.0 MHz	1.251
MARKER 2	2502.0 MHz	1.148
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S21 Log MAG REF 0.0dB SCALE 1.0dB/



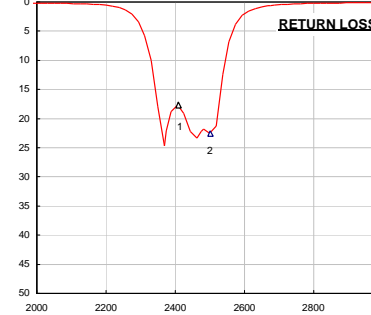
MARKER 1	2400.0 MHz	1.682 dB
MARKER 2	2500.0 MHz	2.155 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

S21 Log MAG REF 0.0dB SCALE 10.0dB/



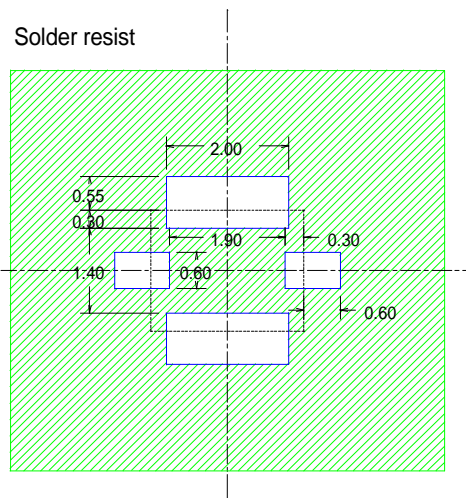
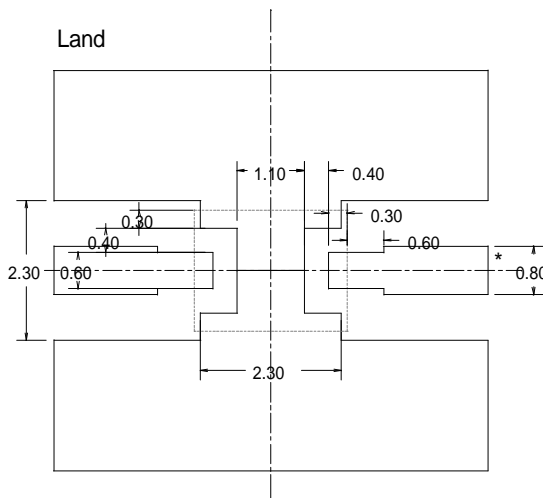
MARKER 1	880.0 MHz	51.04 dB
MARKER 2	1710.0 MHz	39.30 dB
MARKER 3	1990.0 MHz	30.81 dB
MARKER 4	2170.0 MHz	19.64 dB
MARKER 5	2700.0 MHz	28.86 dB
MARKER 6	4800.0 MHz	37.95 dB

S11 Log MAG REF 0.0dB SCALE 5.0dB/



MARKER 1	2410.0 MHz	17.62 dB
MARKER 2	2502.0 MHz	22.55 dB
MARKER 3	MHz	
MARKER 4	MHz	
MARKER 5	MHz	
MARKER 6	MHz	

## [ Recommended PCB Pattern ]



\* Line width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

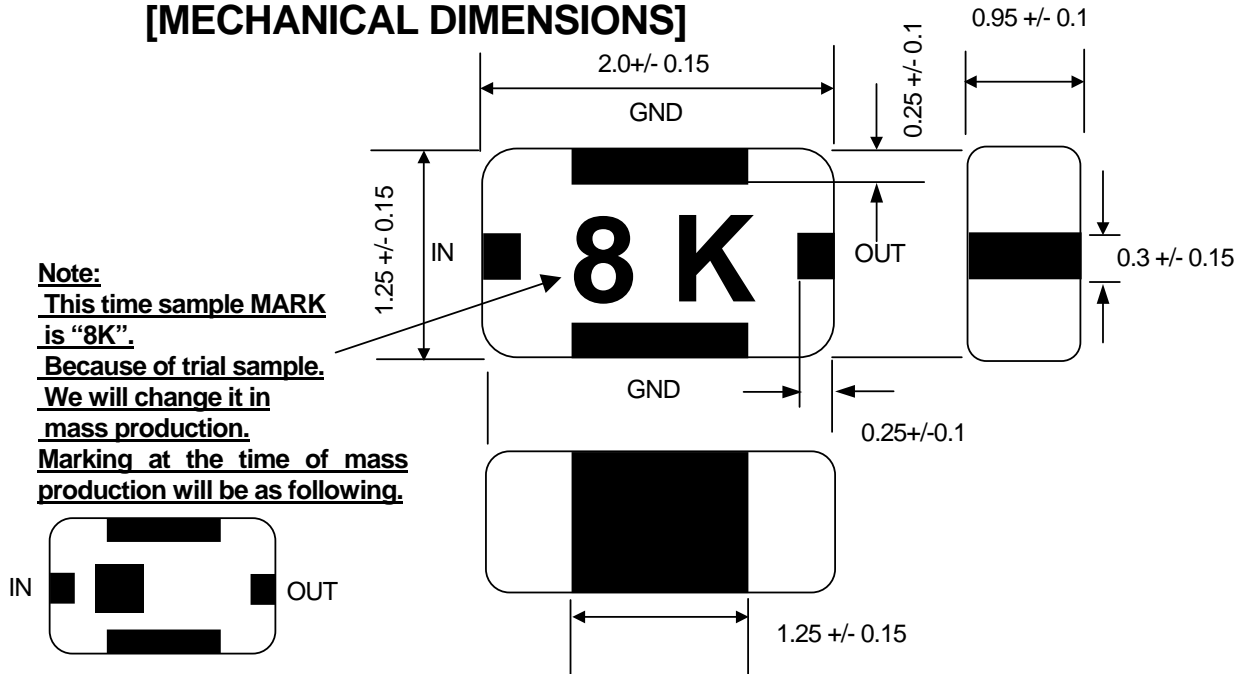
(Unit:mm)

Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

## MULTILAYER BANDPASS FILTER SPECIFICATION

P/N: **DEA202450BT-1213C1**

### [MECHANICAL DIMENSIONS]



### [ELECTRICAL CHARACTERISTICS] $T_a=25\text{ }^\circ\text{C}$

No.	PARAMETER	FREQ (MHz)	SPECIFICATION		UNIT
			Min.	Max.	
1	Insertion Loss	2400-2500	-	1.5	dB
2	Return Loss	2400-2500	10.0	-	dB
3	Attenuation	1200-1300	25.0	-	dB
4	Attenuation	2000	10.0	-	dB
5	Attenuation	3000	12.0	-	dB
6	Attenuation	3600-3800	30.0	-	dB
7	Attenuation	4800-5000	34.0	-	dB

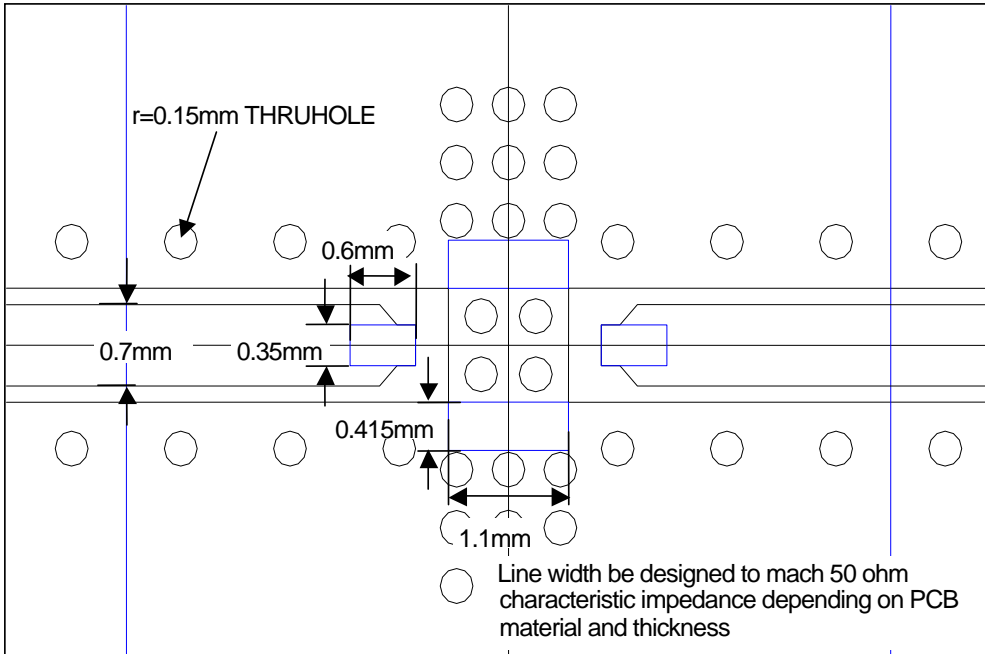
### [TEMPERATURE RANGE]

Storage Temperature	-40 ~ +85 °C
Operation Temperature	-40 ~ +85 °C

Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.



**[ Recommended PCB Pattern ]**



**[ Frequency characteristic ]**

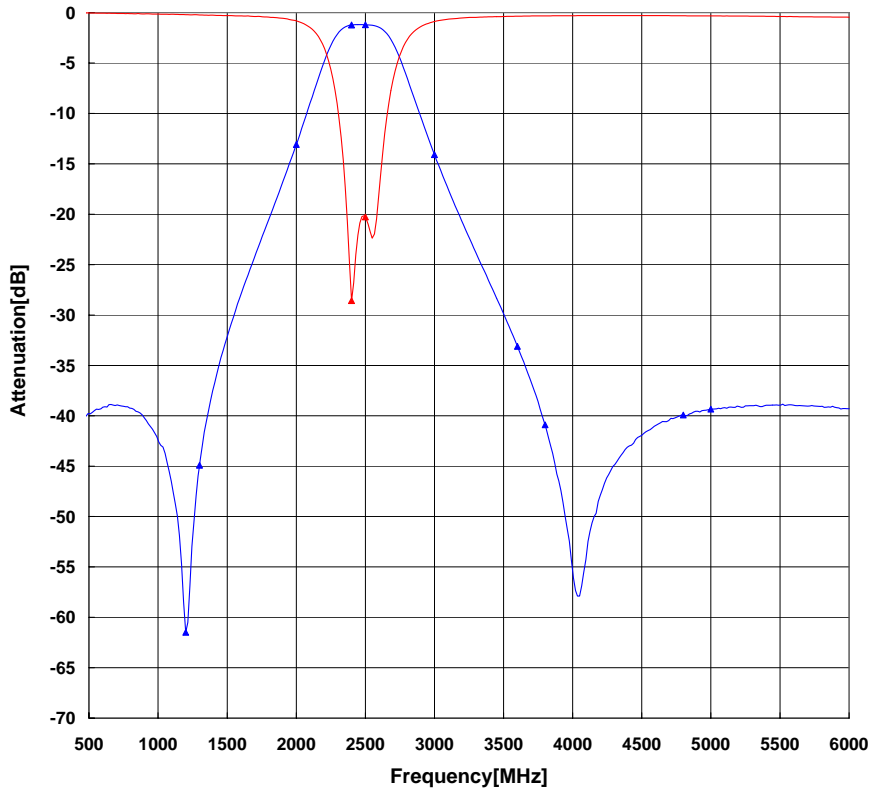
**DEA202450BT-1213C1**

Mark:8K

measurement Frequency : 300MHz - 6000MHz  
N.W.A : HP8510 CAL : OSLT

TDK Corporation

Date : 2003/11/19



**Insertion Loss**  
2400 [MHz]  
-1.221 [dB]

2500 [MHz]  
-1.202 [dB]

**Return Loss**  
2400 [MHz]  
-28.573 [dB]

2500 [MHz]  
-20.283 [dB]

**Attenuation**  
1200 [MHz]  
-61.487 [dB]

1300 [MHz]  
-44.918 [dB]

2000 [MHz]  
-13.083 [dB]

3000 [MHz]  
-14.092 [dB]

3600 [MHz]  
-33.109 [dB]

3800 [MHz]  
-40.9 [dB]

4800 [MHz]  
-39.925 [dB]

5000 [MHz]  
-39.346 [dB]

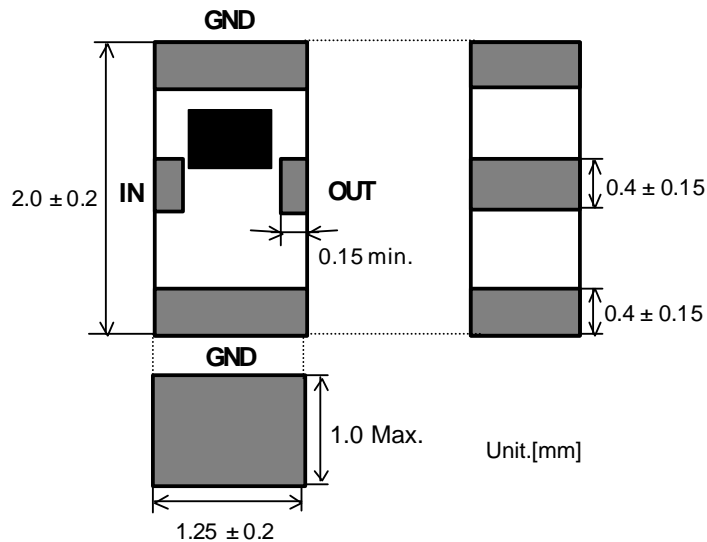
Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.

**MULTILAYER BANDPASS FILTER SPECIFICATION**

Ver.6

P/N : **DEA202450BT-1195A1**

## [MECHANICAL DIMENSIONS]



Note : These samples are marked with a trial sample identification. This applies for these samples only.  
In mass production, this sample marking will be changed to show in the TDK full specification.

## [ ELECTRICAL CHARACTERISTICS ] at 25 °C

No.	PARAMETER	FREQ. (MHz)	MIN	TYP	MAX	Units
1	CENTER FREQUENCY	2450	-	-	-	dB
2	INSERTION LOSS	2400 - 2500	-	-	2.3	dB
3	RETURN LOSS	2400 - 2500	9	-	-	dB
4	ATTENUATION	880 - 915	40	-	-	dB
5	ATTENUATION	915 - 1250	30	-	-	dB
6	ATTENUATION	1710 - 1990	23	-	-	dB
7	ATTENUATION	1990 - 2100	10	-	-	dB
8	ATTENUATION	4800 - 5000	25	-	-	dB
9	ATTENUATION	7200 - 7500	13	-	-	dB

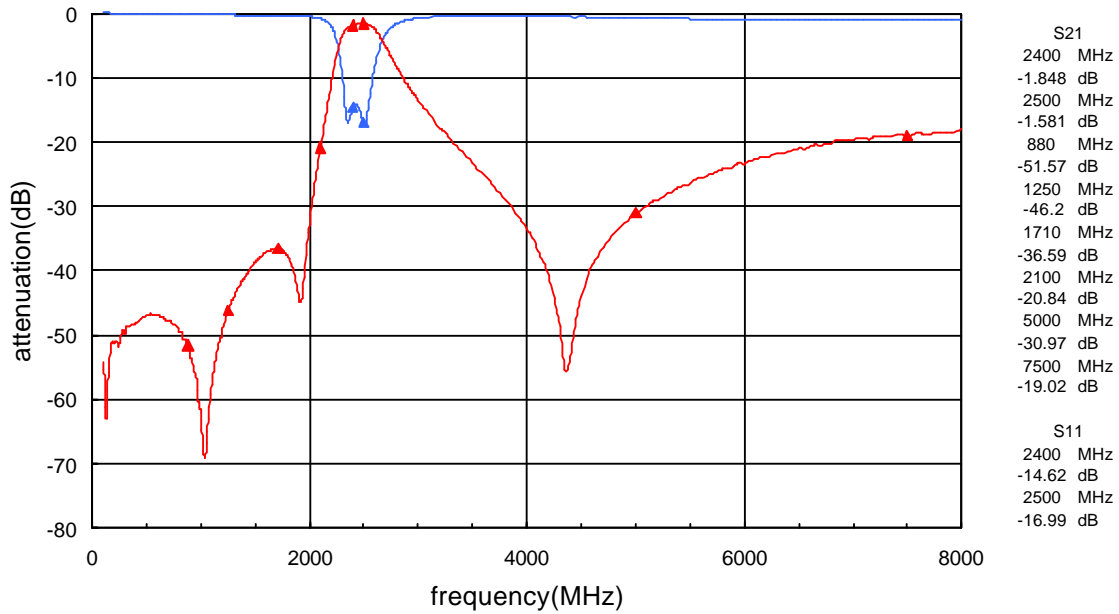
## [TEMPERATURE RANGE]

STORAGE TEMPERATURE RANGE : -40 °C ~ +85 °C

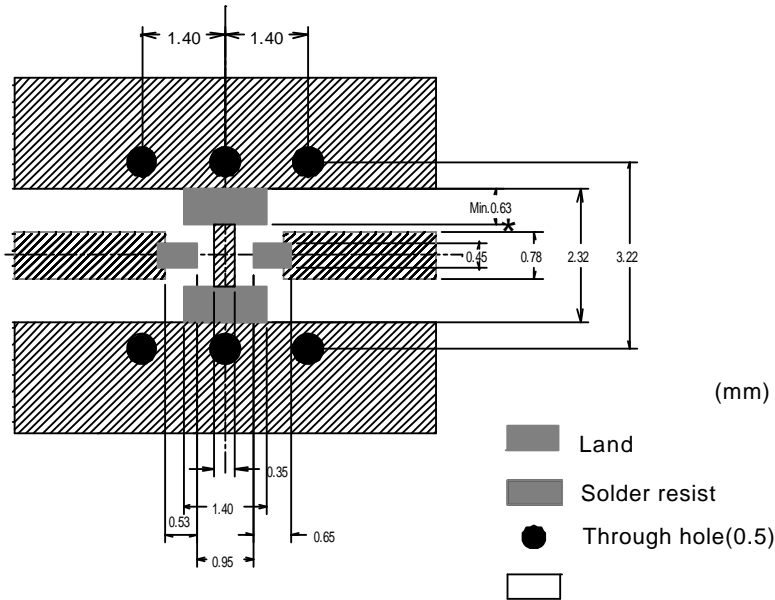
OPERATING TEMPERATURE RANGE : -40 °C ~ +85 °C

Notes : All the technical data and information contained herein are subject to change without prior notice.

[ FREQUENCY RESPONSE ]



[ Recommended PCB Pattern ]



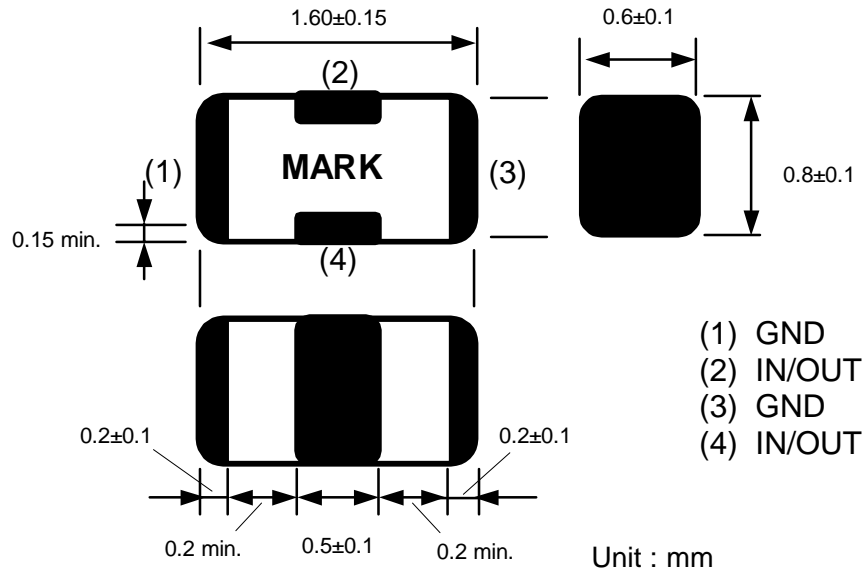
\* : Line width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

Notes : All the technical data and information contained herein are subject to change without prior notice.

## MULTILAYER BAND PASS FILTER

P/N: **DEA162450BT-1210A2**

### MECHANICAL DIMENSIONS



Note: These samples are marked with a trial sample identification. This applies for these samples only.  
In mass production, this sample marking will be changed to show in the TDK full specification.

### ELECTRICAL CHARACTERISTICS (at 25 °C)

No.	PARAMETER	Frequency (MHz)	MIN.	TYP.	MAX.	Unit
1	CENTER FREQUENCY	2450	-	-	-	
2	INSERTION LOSS	2400 - 2500	-	-	3.0	dB
3	RETURN LOSS	2400 - 2500	7	-	-	dB
4	ATTENUATION	880 - 915	32	-	-	dB
5	ATTENUATION	915 - 1250	30	-	-	dB
6	ATTENUATION	1710 - 1900	30	-	-	dB
7	ATTENUATION	1900 - 2000	20	25	-	dB
8	ATTENUATION	4800 - 5000	25	-	-	dB

### TEMPERATURE RANGE

Storage Temperature	-40 ~ +85 °C
Operating Temperature	-40 ~ +85 °C

Note: This document is PRELIMINARY. All specifications are subject to change and are not guaranteed.



# TDK Compact Filter

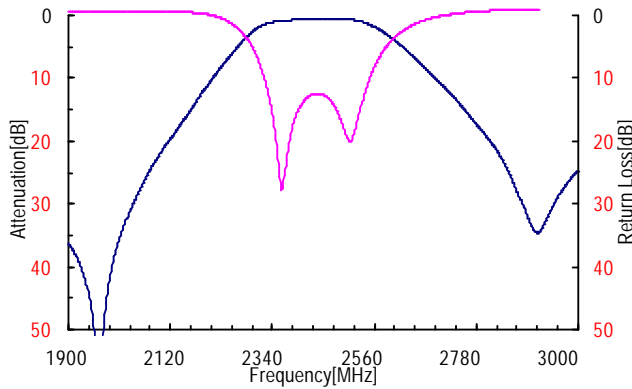


**Sample Part No. CF61A4601**

## Feature

1. Compact and High performance 2pole filter
2. High reliability (Ceramic block filter)
3. SMD type

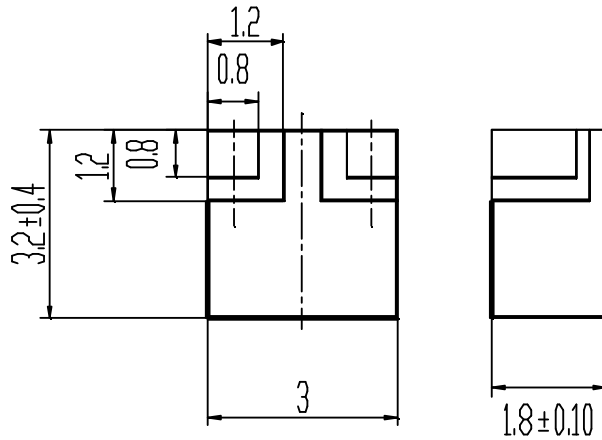
## Frequency Characteristics



## Electrical Characteristic

Sample Part No.		S0400
Center Frequency	[MHz]	2450
Band Width	[MHz]	100
Insertion Loss	[dB]Max.	1.00
Return Loss	[dB]Min.	10.0
Attenuation	1950MHz	[dB] Min. 40.0

## Dimensions



Tolerance unless otherwise specified ±0.20

Unit:mm