

TDK RF Products for Wireless LAN

02/01/05

for 2.4GHz

Multilayer BalBPF

Start Freq. MHz	Stop Freq. MHz	Ins. Loss dB (MAX)	Bal. imped. ohm	Atenuation (MIN.)				Size mm (typ.)	Part No.
				MHz	dB	MHz	dB		
2400	2500	2.4	50	1920	25	4800	15	2.5x2.0x0.9	DEA252450BT-7001B1
2400	2500	1.7	50	1910	32	4800	30	2.5x2.0x0.9	DEA252450BT-7014D1
2400	2500	1.5	100	1910	32	4800	30	2.5x2.0x0.9	DEA252450BT-7012D1
2400	2500	3.0	18+j28	1990	40	4800	30	2.5x2.0x0.9	DEA252450BT-7030B1
2400	2500	3.3	34+j72	2170	30	4800	25	2.5x2.0x0.9	DEA252450BT-7035B2

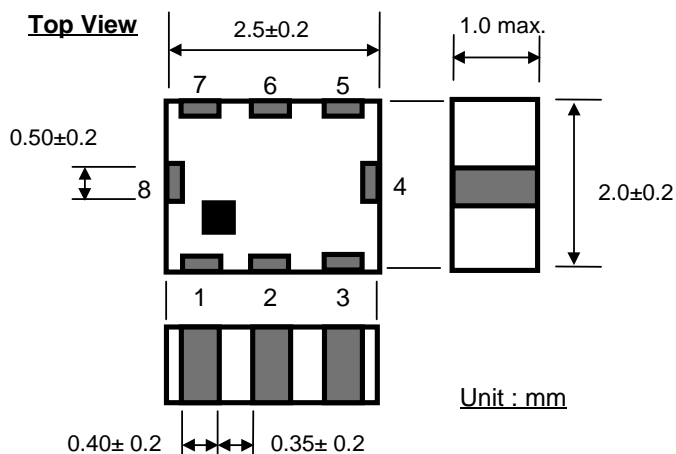
	Sample Available
	New Lineup
	Under Developing

Multilayer Band Pass Filter (Balance Output type)

P/N : **DEA252450BT-7001B1**

For Bluetooth & 2.4GHz W-LAN

MECHANICAL DIMENSIONS



PIN CONFIGURATION

PIN ASSIGNMENT	PIN No.
Unbalanced	4
Balanced	1
Balanced	2
GND or DC feed	6
GND	3,5,7,8

ELECTRICAL CHARACTERISTICS

Unbalanced Port Characteristics Impedance	50 ohm (Nominal)
Balanced Port Characteristics Impedance	50 ohm (Nominal)
Frequency Range (Pass Band)	2400 – 2500 MHz
Insertion Loss (+25 degree C)	2.4 dB max.
Insertion Loss (-40 ~ +85 degree C)	2.7 dB max.
Attenuation (1710 – 1920 MHz)	25 dB min.
Attenuation (4800 – 5000 MHz)	15 dB min.
Unbalanced Port Return Loss	10 dB min.
Phase Difference at Balanced Ports	180 ± 20 deg.
Amplitude Imbalance at Balanced Ports	0 ± 2.0 dB

TEMPERATURE RANGE

Storage Temperature : -40 ~ +85 degree C

Operating Temperature : -40 ~ +85 degree C

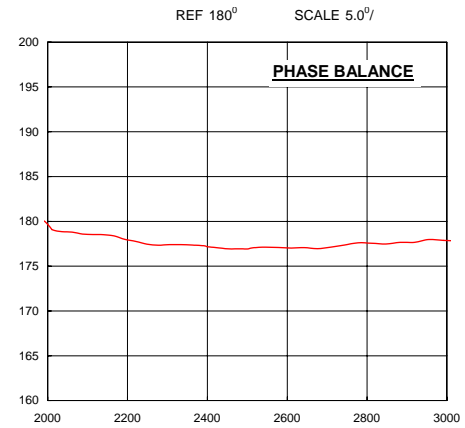
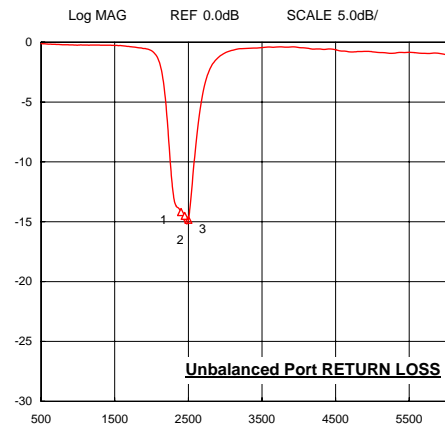
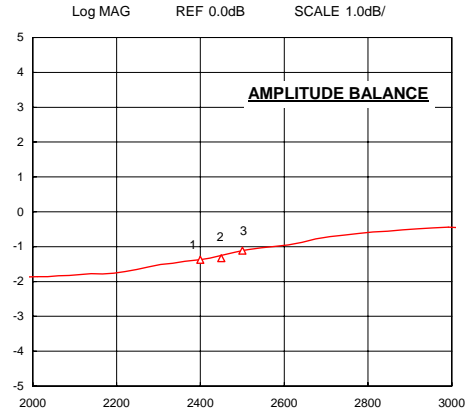
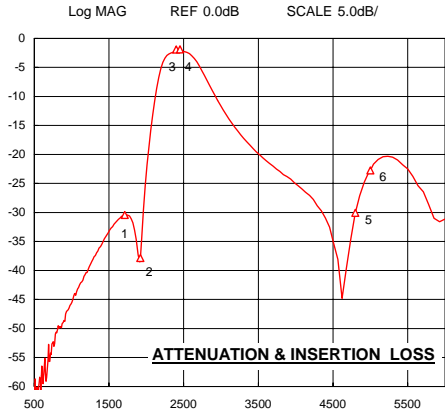
Note: All specifications are subject to change and are not guaranteed.

FREQUENCY RESPONSE

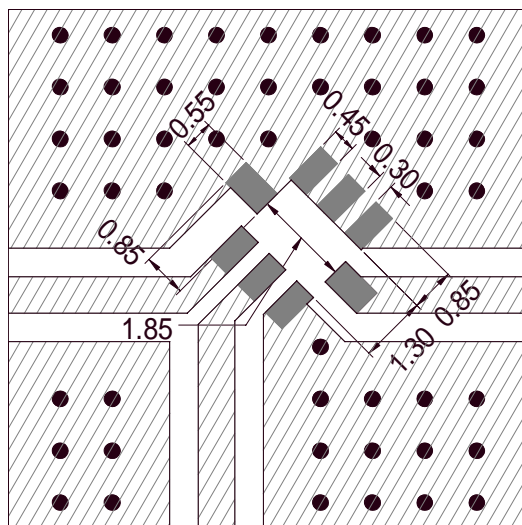
DEA252450BT-7001B1

Unbalance Side : Z= 50 ohm
Balance Side : Z= 50 ohm

29/Jan/2003
TDK Corporation



RECOMMENDED LAND PATTERN



- Unit : mm
- Land
 - Solder Resist
 - No pattern and Solder Resist
 - Through Hole (0.3mm)

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

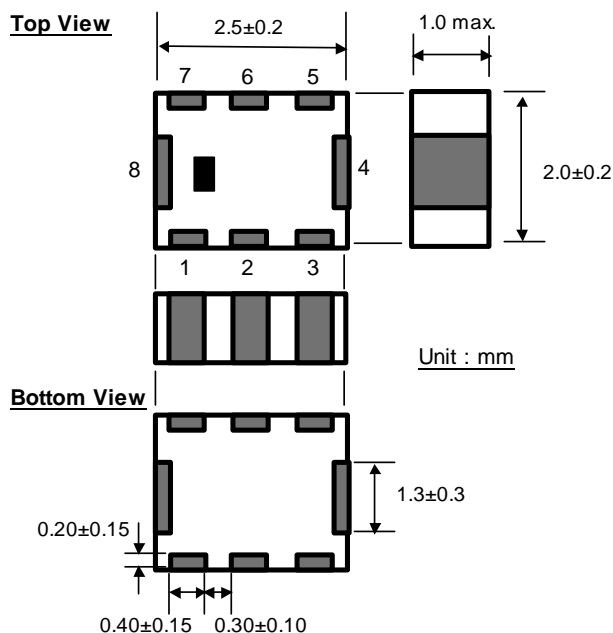
Note: All specifications are subject to change and are not guaranteed.

Multilayer Band Pass Filter (Balance output type)

P/N : **DEA252450BT-7014D1**

For Bluetooth & 2.4GHz W-LAN

MECHANICAL DIMENSIONS



PIN CONFIGURATION

PIN ASSIGNMENT	PIN No.
Unbalanced	2
Balanced	5
Balanced	7
GND	4,8
DC feed or N.C.	3
N.C.	1,6

ELECTRICAL CHARACTERISTICS

Parameter	Specification	Typical Value	Unit	
Unbalanced Port Characteristics Impedance	50 (Nominal)	-	ohm	
Balanced Port Characteristics Impedance	50 (Nominal)	-	ohm	
Frequency Range (Pass Band)	2400 – 2500	-	MHz	
Insertion Loss	+25 degree C	1.7 max.	1.2	dB
	-40 ~ +85 degree C	2.0 max.	-	dB
Attenuation	880 – 960 MHz	40 min.	48	dB
	1710 – 1910 MHz	32 min.	38	dB
	4800 – 5000 MHz	30 min.	39	dB
Unbalanced Port Return Loss	10 min.	17	dB	
Phase Difference at Balanced Port	180 ± 15	190	deg.	
Amplitude Imbalance at Balanced Port	0 ± 1.0	- 0.2	dB	

TEMPERATURE RANGE

Storage Temperature : -40 ~ +85 degree C
 Operating Temperature : -40 ~ +85 degree C

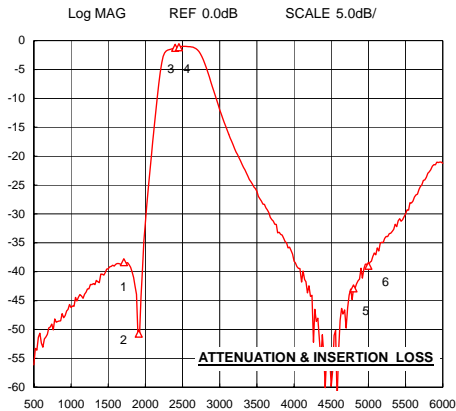
Note: All specifications are subject to change and are not guaranteed.

FREQUENCY RESPONSE

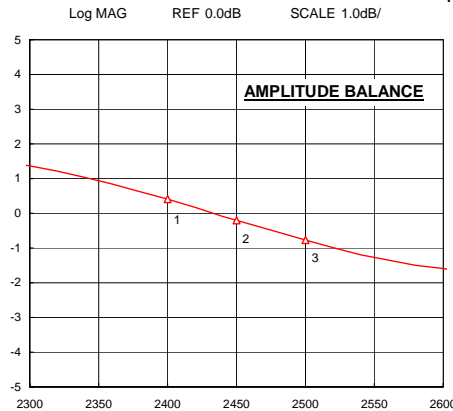
DEA252450BT-7014D1

Unbalance Side : Z= 50 ohm
Balance Side : Z= 50 ohm
SCALE 5.0dB/

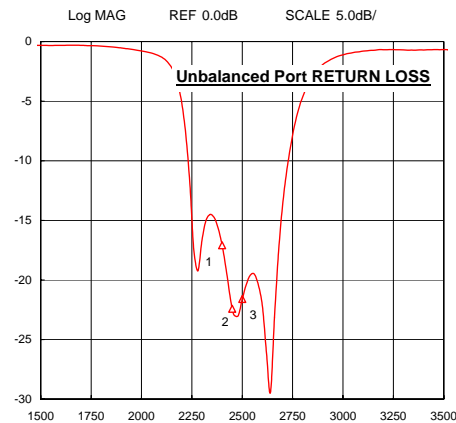
27/Nov/2003
TDK Corporation



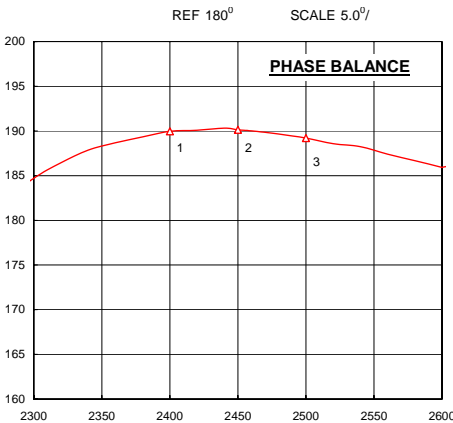
MARKER	Freq (MHz)	Mag (dB)
MARKER 1	1710	-38.3
MARKER 2	1910	-50.8
MARKER 3	2400	-1.24
MARKER 4	2500	-1.05
MARKER 5	4800	-42.9
MARKER 6	5000	-39.0



MARKER	Freq (MHz)	Mag (dB)
MARKER 1	2400	0.41
MARKER 2	2450	-0.20
MARKER 3	2500	-0.77
MARKER 4	MHz	dB
MARKER 5	MHz	dB
MARKER 6	MHz	dB

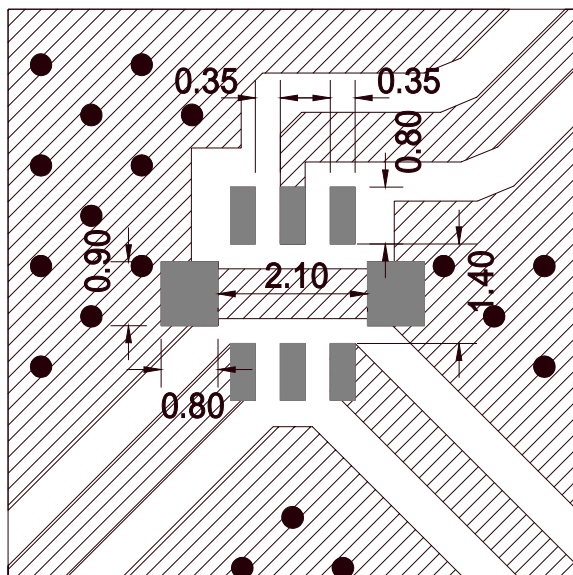


MARKER	Freq (MHz)	Mag (dB)
MARKER 1	2400	-17.1
MARKER 2	2450	-22.4
MARKER 3	2500	-21.6
MARKER 4	MHz	dB
MARKER 5	MHz	dB
MARKER 6	MHz	dB



MARKER	Freq (MHz)	Phase (degrees)
MARKER 1	2400	190.0
MARKER 2	2450	190.1
MARKER 3	2500	189.2
MARKER 4	MHz	degrees
MARKER 5	MHz	degrees
MARKER 6	MHz	degrees

RECOMMENDED PCB PATTERN



- Unit : mm
- Land
 - Solder Resist
 - No pattern and Solder Resist
 - Through Hole (0.3mm)

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

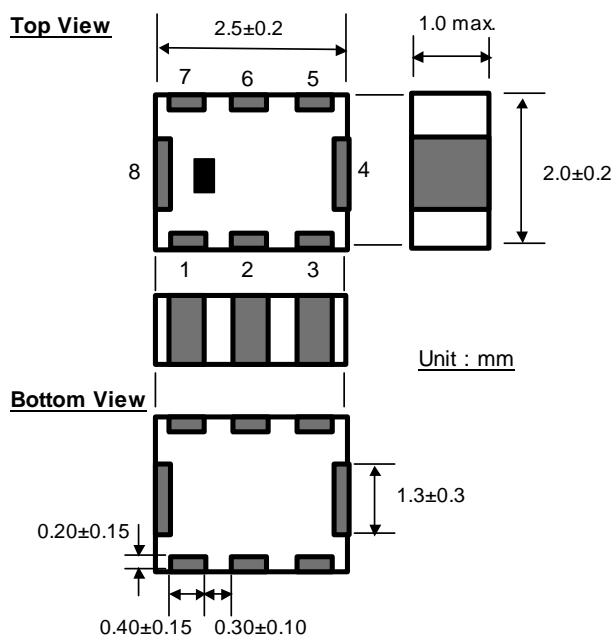
Note: All specifications are subject to change and are not guaranteed.

Multilayer Band Pass Filter (Balance output type)

P/N : **DEA252450BT-7012D1**

For Bluetooth & 2.4GHz W-LAN

MECHANICAL DIMENSIONS



PIN CONFIGURATION

PIN ASSIGNMENT	PIN No.
Unbalanced	2
Balanced	5
Balanced	7
GND	4,8
DC feed or N.C.	3
N.C.	1,6

ELECTRICAL CHARACTERISTICS

Parameter	Specification	Typical Value	Unit	
Unbalanced Port Characteristics Impedance	50 (Nominal)	-	ohm	
Balanced Port Characteristics Impedance	100 (Nominal)	-	ohm	
Frequency Range (Pass Band)	2400 – 2500	-	MHz	
Insertion Loss	+25 degree C	1.9 max.	1.5	dB
	-40 ~ +85 degree C	2.2 max.	-	dB
Attenuation	880 – 960 MHz	40 min.	50	dB
	1710 – 1910 MHz	32 min.	42	dB
	4800 – 5000 MHz	30 min.	40	dB
Unbalanced Port Return Loss	10 min.	14	dB	
Phase Difference at Balanced Port	180 ± 12	188	deg.	
Amplitude Imbalance at Balanced Port	0 ± 1.0	0	dB	

TEMPERATURE RANGE

Storage Temperature : -40 ~ +85 degree C

Operating Temperature : -40 ~ +85 degree C

Note: All specifications are subject to change and are not guaranteed.

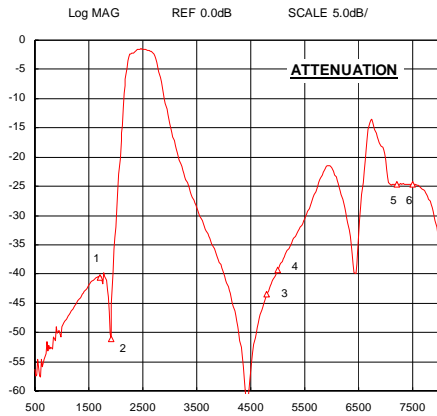
FREQUENCY RESPONSE

DEA252450BT-7012D1

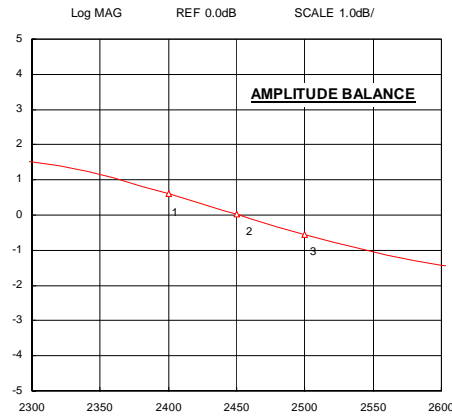
Unbalance Side : Z= 50 ohm
Balance Side : Z= 100 ohm

8/Jul/2004

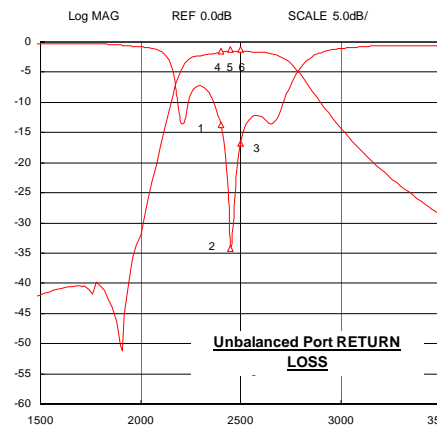
TDK Corporation



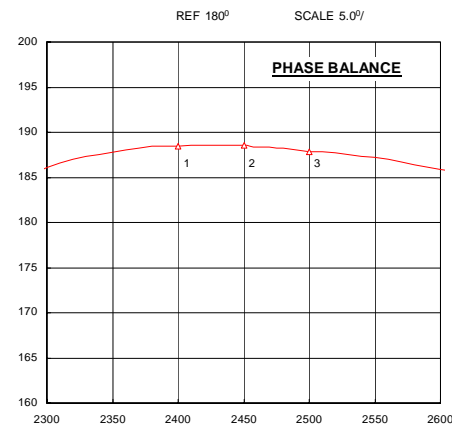
MARKER 1	1710 MHz	-40.6 dB
MARKER 2	1910 MHz	-51.2 dB
MARKER 3	4800 MHz	-43.5 dB
MARKER 4	5000 MHz	-39.3 dB
MARKER 5	7200 MHz	-24.6 dB
MARKER 6	7500 MHz	-24.7 dB



MARKER 1	2400 MHz	0.61 dB
MARKER 2	2450 MHz	0.02 dB
MARKER 3	2500 MHz	-0.55 dB
MARKER 4	MHz	dB
MARKER 5	MHz	dB
MARKER 6	MHz	dB

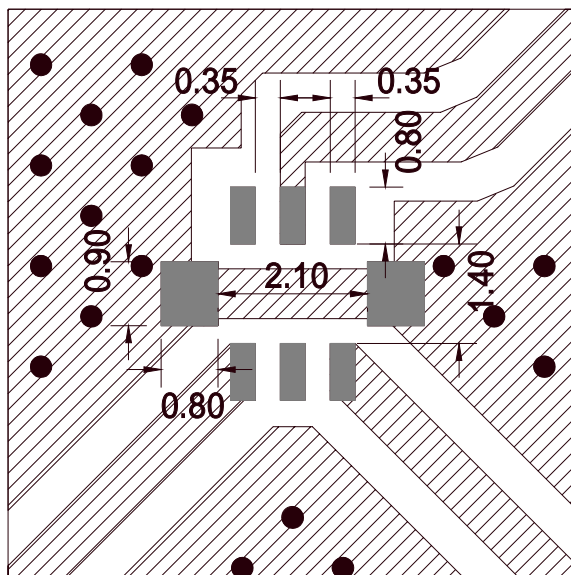


MARKER 1	2400 MHz	-13.7 dB
MARKER 2	2450 MHz	-34.2 dB
MARKER 3	2500 MHz	-16.8 dB
MARKER 4	2400 MHz	-1.56 dB
MARKER 5	2450 MHz	-1.22 dB
MARKER 6	2500 MHz	-1.18 dB



MARKER 1	2400 MHz	188.5 °
MARKER 2	2450 MHz	188.5 °
MARKER 3	2500 MHz	187.9 °
MARKER 4	MHz	°
MARKER 5	MHz	°
MARKER 6	MHz	°

RECOMMENDED PCB PATTERN



- Unit : mm
- Land
 - Solder Resist
 - No pattern and Solder Resist
 - Through Hole (0.3mm)

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

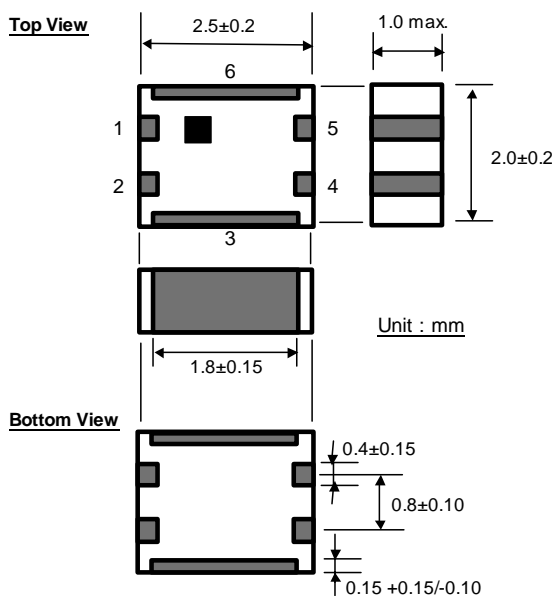
Note: All specifications are subject to change and are not guaranteed.

Multilayer Band Pass Filter (Balance output type)

P/N : **DEA252450BT-7030B1**

For Bluetooth and 2.4GHz W-LAN

MECHANICAL DIMENSIONS



PIN CONFIGURATION

PIN ASSIGNMENT	PIN No.
Unbalanced	1
Balanced	4,5
GND	3,6
DC feed or RF GND	2

Note : Internal DC path from Pin 2 to balanced ports.

ELECTRICAL CHARACTERISTICS

Parameter	Specification	Typ. Value	Unit	
Frequency Range (Pass Band)	2400 – 2500	-	MHz	
Unbalanced Port Characteristics Impedance	50 (Nominal)	-	ohm	
Balanced Port Characteristics Impedance	18+j28 (Nominal)	-	ohm	
Unbalanced Port Return Loss	6.0 min.	10	dB	
Insertion Loss (Pass Band)	+25 degree C	3.3 max.	3.1	dB
	-40 ~ +85 degree C	3.6 max.	3.4	dB
Ripple (Pass Band)	1.0 max.	0.3	dB	
Attenuation	880 - 960 MHz	48 min.	57	dB
	1710 - 1990 MHz	40 min.	43	dB
	3900 - 4100 MHz	30 min.	37	dB
	4800 - 5000 MHz	30 min.	50	dB
Amplitude Imbalance at Balanced Port	1.8 max.	1.4	dB	
Phase Difference at Balanced Port	+25 degree C	180 ± 7	183	deg
	-40 ~ +85 degree C	180 ± 10	-	deg

Note: All specifications are subject to change and are not guaranteed.

TEMPERATURE RANGE

Storage Temperature : -40 ~ +85 degree C
 Operating Temperature : -40 ~ +85 degree C

FREQUENCY RESPONSE

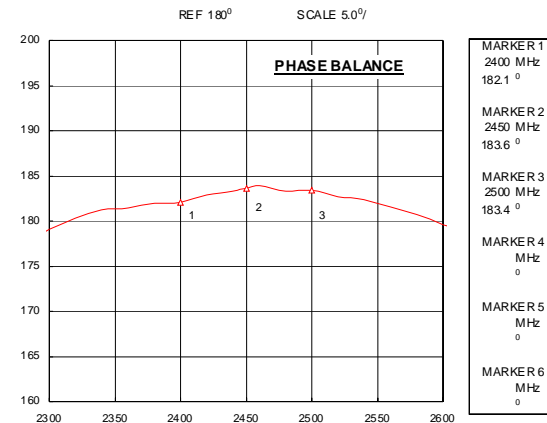
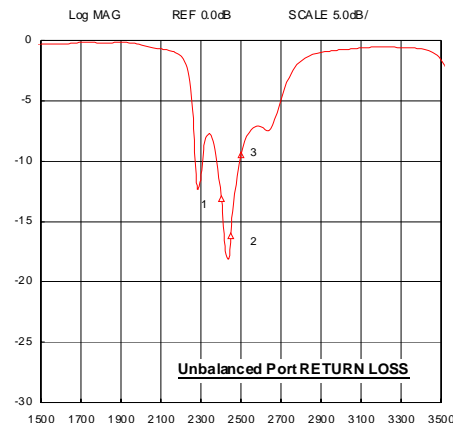
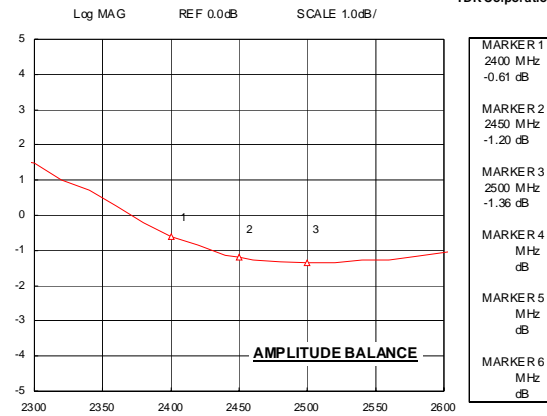
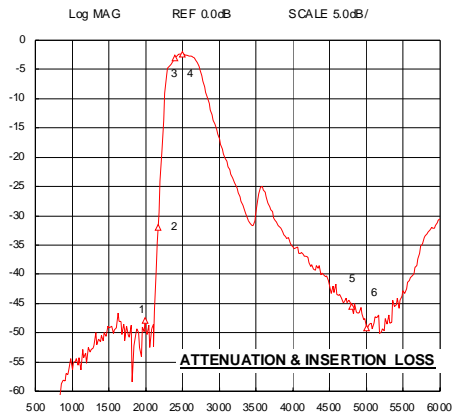
DEA252450BT-7030B

Unbalance Side : Z₀ = 50 ohm
 Balance Side : Z₀ = 18+j28 ohm

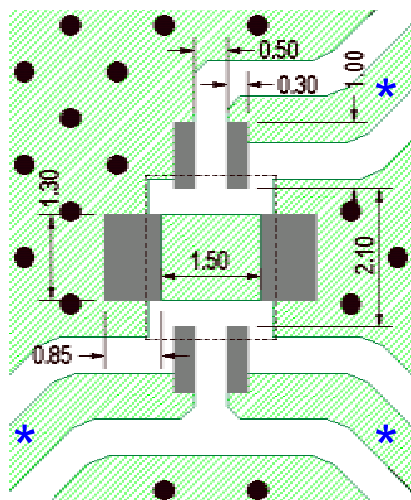
s15k

27/Feb/2004

TDK Corporation



RECOMMENDED PCB PATTERN



Unit : mm

- Land
- Solder Resist
- No pattern and Solder Resist
- Through Hole (0.3mm)

* Coplanar waveguide (Line width and Gap of Line to GND) to be designed to match 50ohm characteristic impedance , depending on PCB material and thickness.

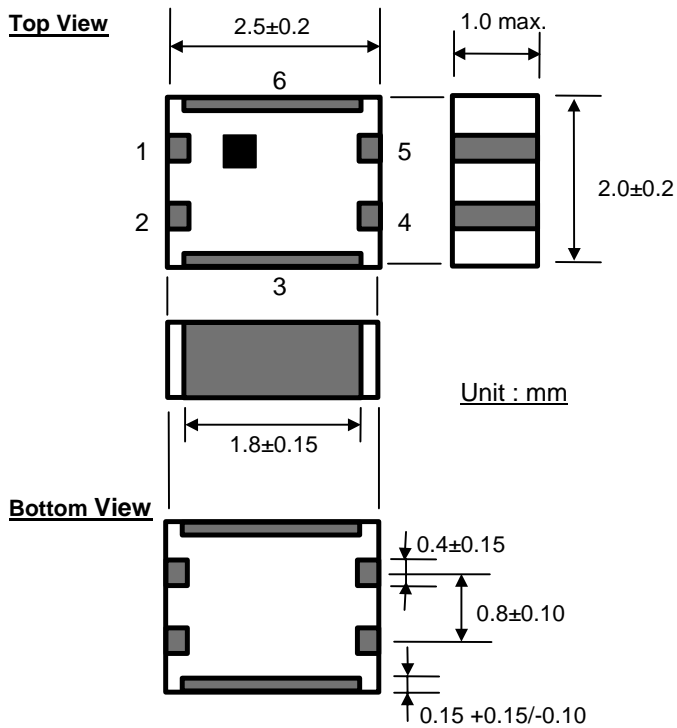
Note: All specifications are subject to change and are not guaranteed.

Multilayer Band Pass Filter (Balance output type)

P/N : **DEA252450BT-7035B2**

For Bluetooth

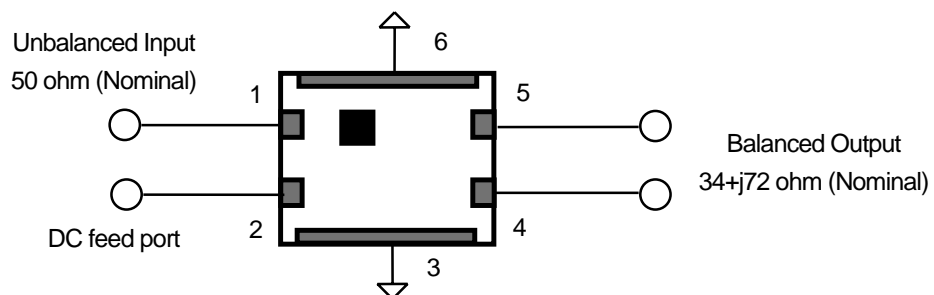
MECHANICAL DIMENSIONS



PIN CONFIGURATION

PIN ASSIGNMENT	PIN No.
Unbalanced	1
Balanced	4,5
GND	3,6
DC feed or RF GND	2

Note : Internal DC path from Pin 2 to balanced ports.



Note: All specifications are subject to change and are not guaranteed.

ELECTRICAL CHARACTERISTICS

Parameter		Specification	Typical Value	Unit
Frequency Range (Pass Band)		2400 – 2500	-	MHz
Unbalanced Port Characteristics Impedance		50 (Nominal)	-	ohm
Balanced Port Characteristics Impedance		34+j72 (Nominal)	-	ohm
Unbalanced Port Return Loss		8.0 min.	10.9	dB
Insertion Loss (Pass Band)	-40 ~ +85 degree C	3.6 max.	3.1	dB
Ripple (Pass Band)		1.0 max.	0.2	dB
Attenuation	880 - 960 MHz	50 min.	62	dB
	1710 - 1880 MHz	48 min.	53	dB
	1880 - 1990 MHz	38 min.	43	dB
	2110 - 2170 MHz	30 min.	38	dB
	4800 - 5000 MHz	25 min.	32	dB
	7200 - 7500 MHz	20 min.	35	dB
Amplitude Imbalance at Balanced Port		1.0 max.	0.3	dB
Phase Difference at Balanced Port	+25 degree C	180 ± 8	180 ± 4	deg.
	-40 ~ +85 degree C	180 ± 10	-	deg.

TEMPERATURE RANGE

Storage Temperature : -40 ~ +85 degree C

Operating Temperature : -40 ~ +85 degree C

Note: All specifications are subject to change and are not guaranteed.

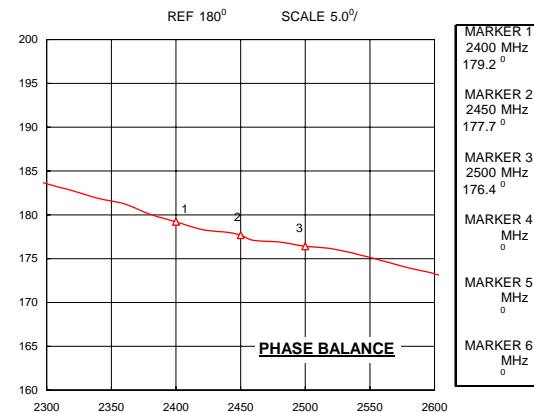
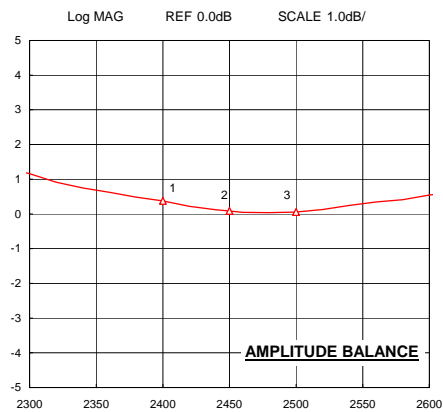
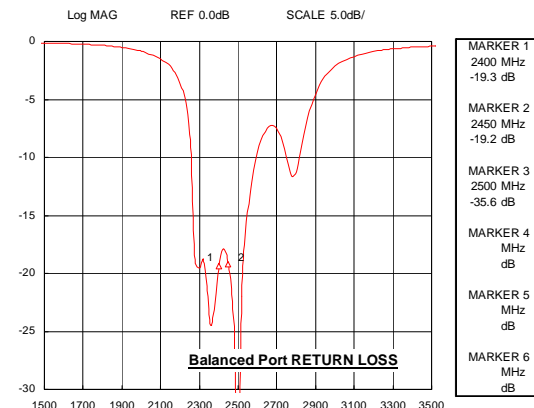
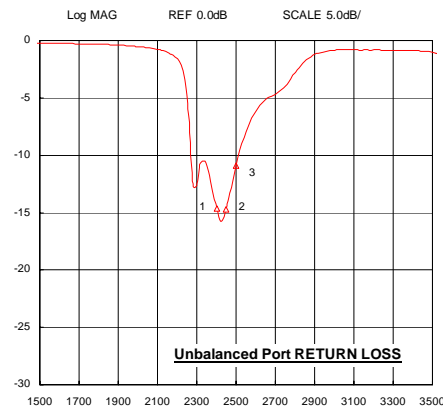
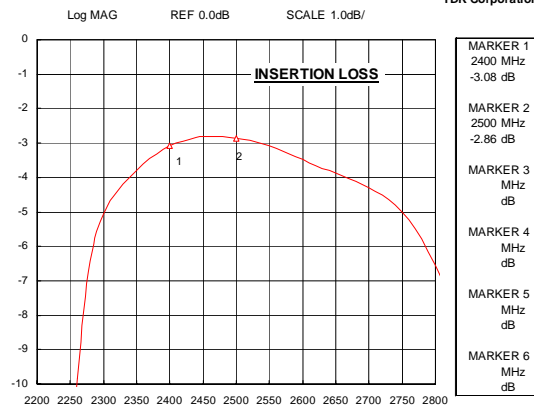
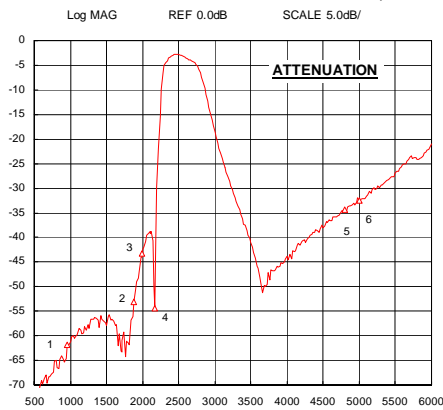
FREQUENCY RESPONSE

DEA252450BT-7035B

Unbalance Side : $Z = 50 \text{ ohm}$
 Balance Side : $Z = 34 + j72.2 \text{ ohm}$

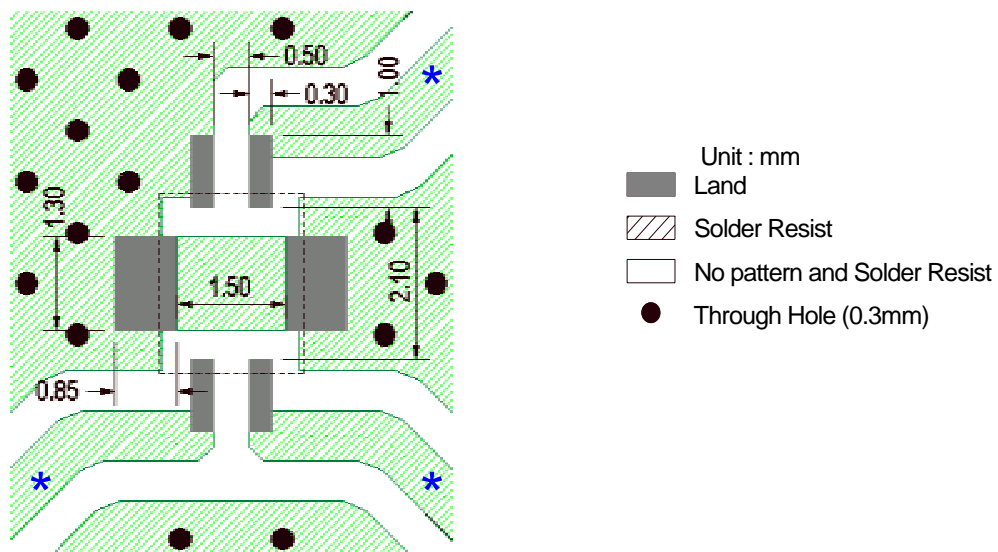
s23e

20/May/2004
 TDK Corporation



Note: All specifications are subject to change and are not guaranteed.

RECOMMENDED PCB PATTERN



* Coplanar waveguide (Line width and Gap of Line to GND) to be designed to match 50ohm characteristic impedance , depending on PCB material and thickness.

Note: All specifications are subject to change and are not guaranteed.