

Multilayer Band Pass Filters(Balance Output Type)

For 2.4GHz W-LAN/Bluetooth

DEA Series

Type: **DEA252450BT-7012D1 (2.5×2.0×1.0mm max.)**
 DEA252450BT-7014D1 (2.5×2.0×1.0mm max.)
 DEA252450BT-7022B1 (2.5×2.0×1.0mm max.)

Issue date: November 2010

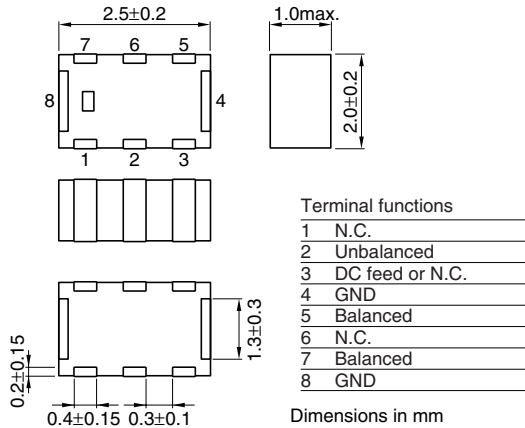
- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

Multilayer Chip Band Pass Filters(Balance Output Type) Conformity to RoHS Directive

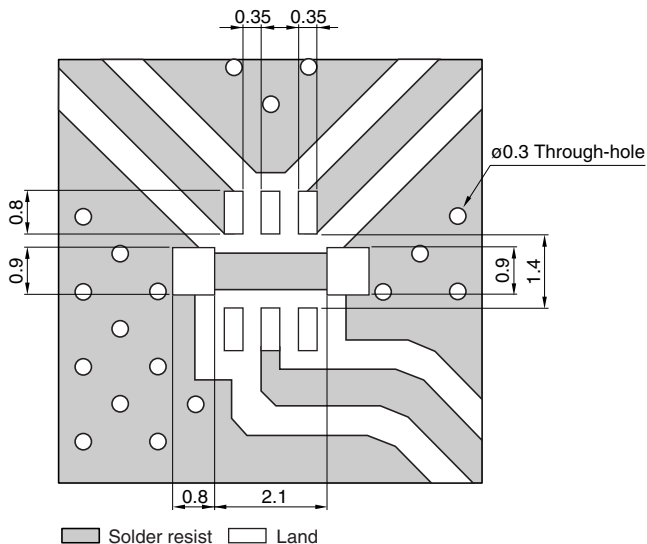
For Bluetooth & 2.4GHz W-LAN

DEA Series DEA252450BT-7012D1

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS



Line width be designed to mach 50Ω characteristic impedance depending on PCB material and thickness

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Typical value	
Frequency range (Pass band)	2400 to 2500MHz	—
Unbalanced impedance	50Ω (Nominal)	—
Balanced impedance	100Ω (Nominal)	—
Insertion loss	[+25°C]	1.9dB max.
	[-40 to +85°C]	2.2dB max.
Attenuation	[880 to 960MHz]	40dB min.
	[1710 to 1910MHz]	32dB min.
	[4800 to 5000MHz]	30dB min.
Unbalanced port return loss	10dB min.	14dB
Phase difference at balanced port	180±12deg	188deg
Amplitude imbalance at balanced port	0±1.0dB	0dB
Temperature range	Operating	-40 to +85°C
	Storage	-40 to +85°C

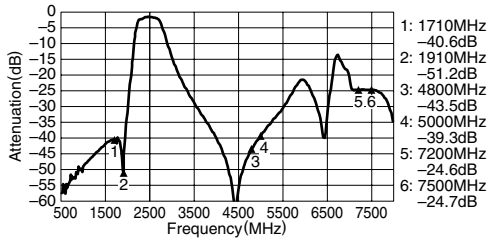
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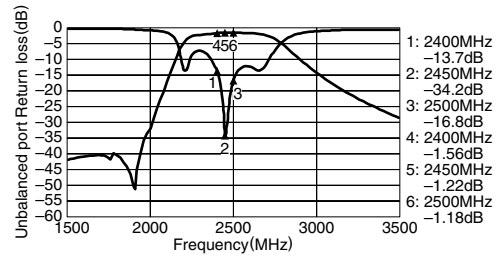
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

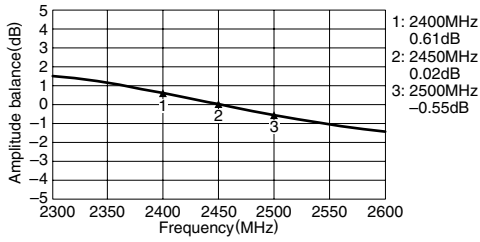
ATTENUATION



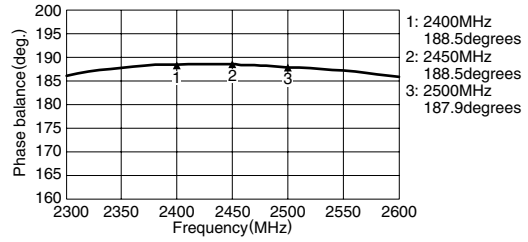
UNBALANCED PORT RETURN LOSS



AMPLITUDE BALANCE



PHASE BALANCE



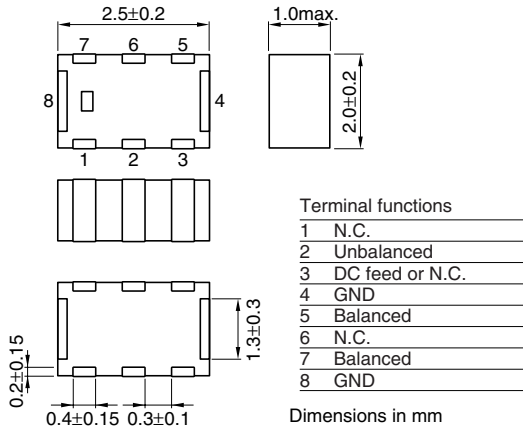
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Multilayer Chip Band Pass Filters(Balance Output Type) Conformity to RoHS Directive

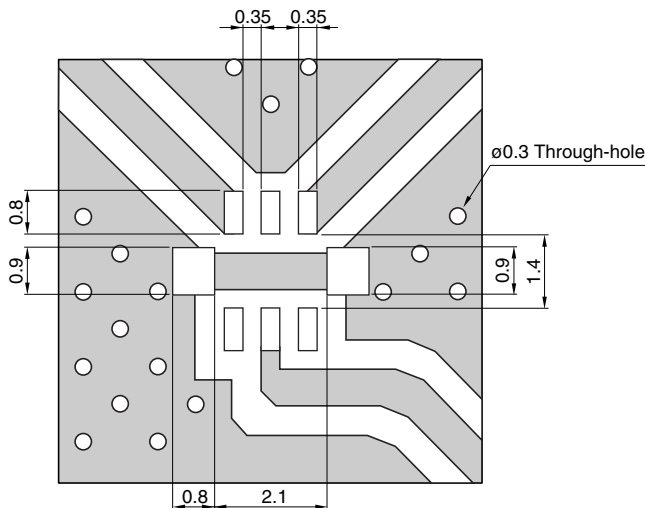
For Bluetooth & 2.4GHz W-LAN

DEA Series DEA252450BT-7014D1

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS



Line width be designed to match 50Ω characteristic impedance depending on PCB material and thickness

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Item	Typical value	
Frequency range (Pass band)	2400 to 2500MHz	
Unbalanced impedance	50Ω (Nominal)	
Balanced impedance	50Ω (Nominal)	
Insertion loss	[+25°C]	1.7dB max.
	[-40 to +85°C]	2.0dB max.
Attenuation	[880 to 960MHz]	40dB min.
	[1710 to 1910MHz]	32dB min.
	[4800 to 5000MHz]	30dB min.
Unbalanced port return loss	10dB min.	
Phase difference at balanced port	180±15deg	
Amplitude imbalance at balanced port	0±1.0dB	
Temperature range	Operating	-40 to +85°C
	Storage	-40 to +85°C

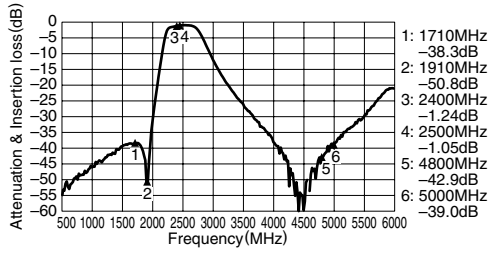
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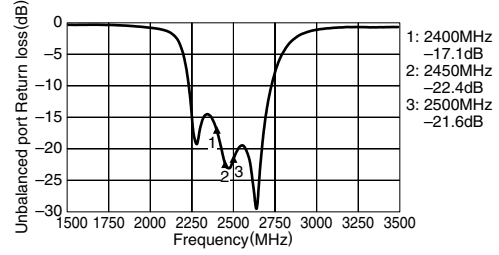
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

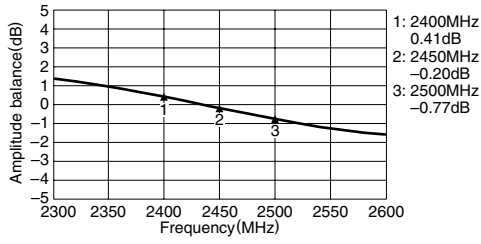
ATTENUATION vs. INSERTION LOSS



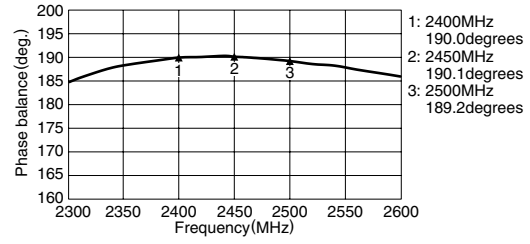
UNBALANCED PORT RETURN LOSS



AMPLITUDE BALANCE



PHASE BALANCE



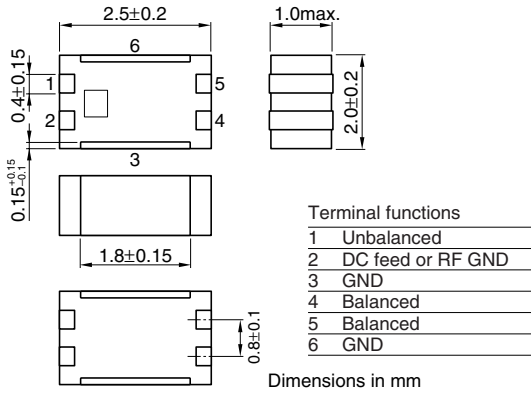
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Multilayer Chip Band Pass Filters(Balance Output Type) Conformity to RoHS Directive

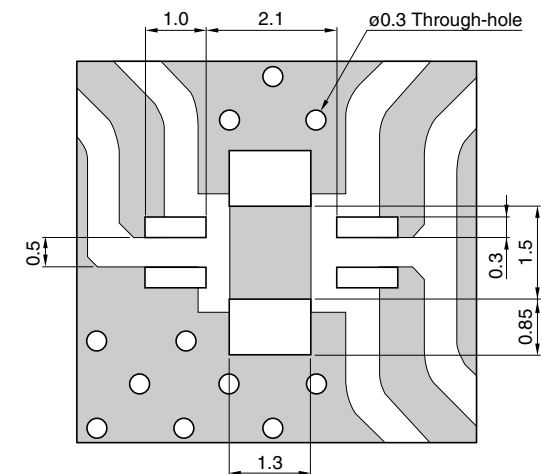
For Bluetooth & 2.4GHz W-LAN

DEA Series DEA252450BT-7022B1

SHAPES AND DIMENSIONS



RECOMMENDED PC BOARD PATTERNS



Solder resist
 Land

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

Dimensions in mm

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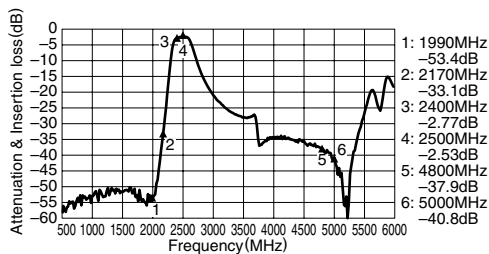
ELECTRICAL CHARACTERISTICS

Item	Typical value		
Frequency range (Pass band)	2400 to 2500MHz	—	
Unbalanced impedance	50Ω (Nominal)	—	
Balanced impedance	100Ω (Nominal)	—	
Unbalanced port return loss	9.5dB min.	—	
Insertion loss (Pass band)	[+25°C]	3.0dB max.	2.7dB
	[-40 to +85°C]	3.3dB max.	3.0dB
Ripple (Pass band)		1.0dB max.	0.2dB
	[880 to 960MHz]	48dB min.	52dB
Attenuation	[1710 to 1880MHz]	45dB min.	51dB
	[1880 to 1980MHz]	40dB min.	54dB
	[2110 to 2170MHz]	25dB min.	33dB
	[4800 to 5000MHz]	30dB min.	38dB
Amplitude imbalance at balanced port	1.0dB max.	-0.2dB	
Phase difference at balanced port	[25°C]	180±8deg	183deg
	[-40 to +85°C]	180±10deg	—
Temperature range	Operating	-40 to +85°C	
	Storage	-40 to +85°C	

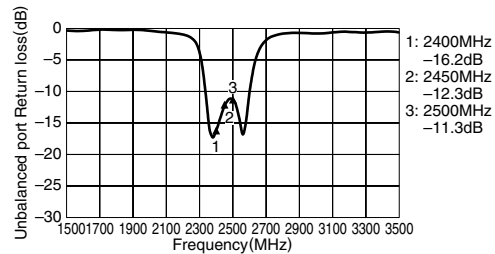
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

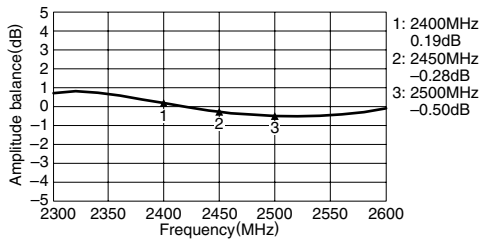
ATTENUATION & INSERTION LOSS



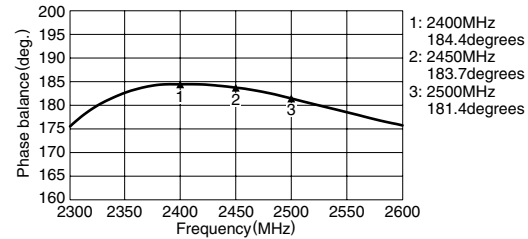
UNBALANCED PORT RETURN LOSS



AMPLITUDE BALANCE



PHASE BALANCE



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