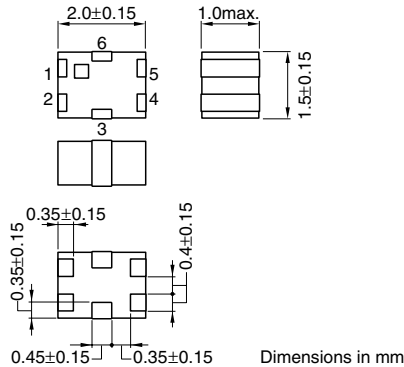


Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA212450BT-7042A1 for Bluetooth & 2.4GHz W-LAN

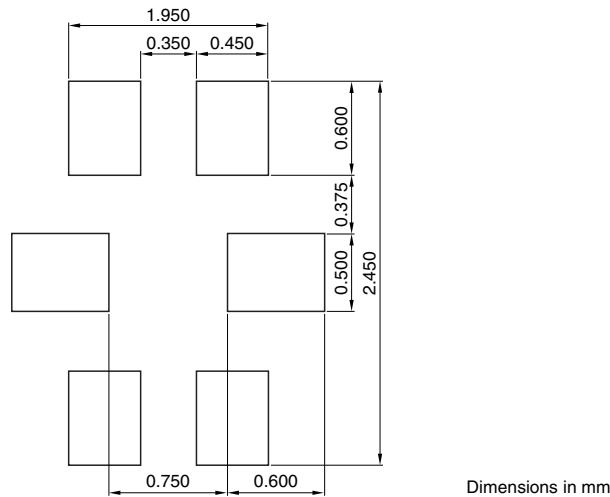
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|-----------------------|
| 1 | Unbalanced port |
| 2 | Balanced port DC feed |
| 3 | GND |
| 4 | Balanced port |
| 5 | Balanced port |
| 6 | GND |

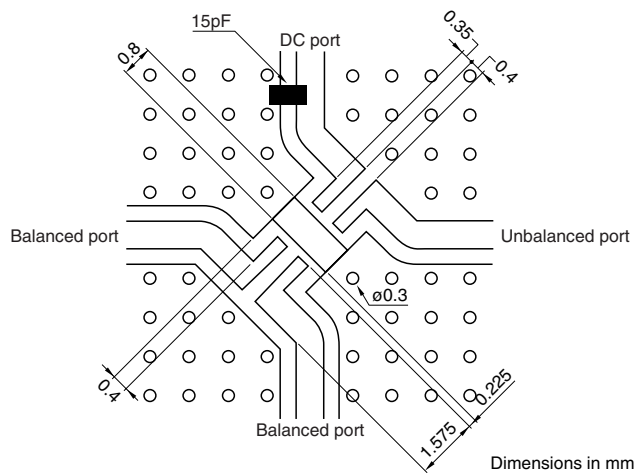
RECOMMENDED PC BOARD PATTERN



ELECTRICAL CHARACTERISTICS

| | | |
|--|-------------------|-----------------|
| Frequency range | | 2400 to 2500MHz |
| RF input power | [2400 to 2500MHz] | 8dBm max. |
| Insertion loss | [-30 to +85°C] | 3.1dB max. |
| Single ended port characteristic impedance | | 50Ω(Nominal) |
| Balanced port differential characteristics Impedance | | 50Ω(Nominal) |
| Single ended Return Loss | [2400 to 2500MHz] | 9.5dB min. |
| Balanced Return Loss | [2400 to 2500MHz] | 9.5dB min. |
| Ripple | [2400 to 2500MHz] | 1dB max. |
| Attenuation | [500 to 960MHz] | 40dB min. |
| | [1570 to 1580MHz] | 26dB min. |
| | [1710 to 1850MHz] | 33dB min. |
| | [1850 to 1910MHz] | 39dB min. |
| | [1920 to 1990MHz] | 39dB min. |
| Phase difference at balanced port | [2110 to 2170MHz] | 12dB min. |
| | [4800 to 5000MHz] | 20dB min. |
| Phase difference at balanced port | | 180±15deg |
| Amplitude impedance at balanced port | | 0±2.0dB |
| Temperature range | Operating | -30 to +85°C |
| | Storage | -30 to +85°C |

EVALUATION BOARD

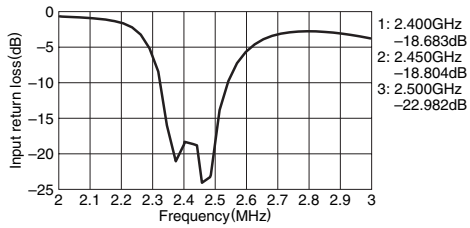


• All specifications are subject to change without notice.

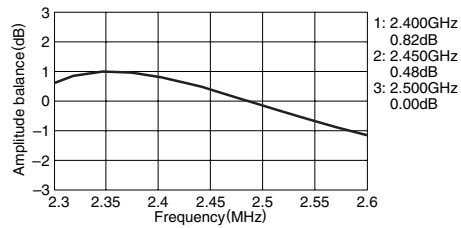
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

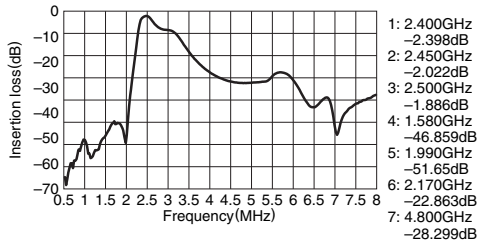
INPUT RETURN LOSS



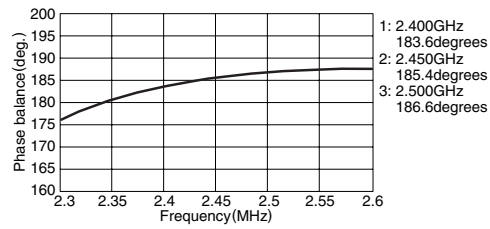
AMPLITUDE BALANCE



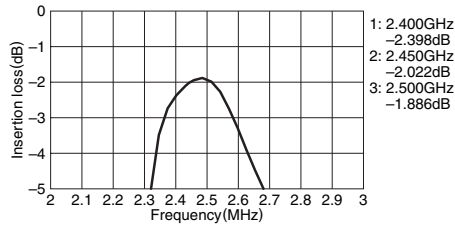
ATTENUATION



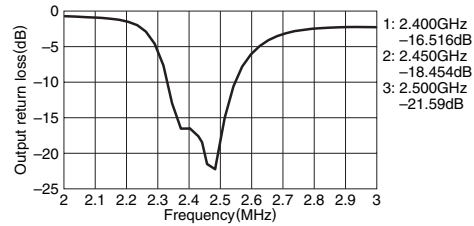
PHASE BALANCE



INSERTION LOSS



OUTPUT RETURN LOSS

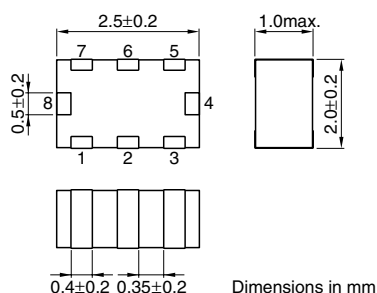


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA252450BT-7001B1 for Bluetooth & 2.4GHz W-LAN

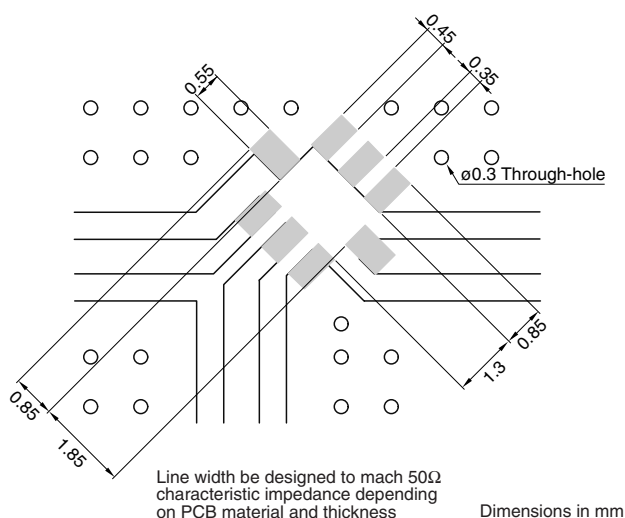
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|----------------|
| 1 | Balanced |
| 2 | Balanced |
| 3 | GND |
| 4 | Unbalanced |
| 5 | GND |
| 6 | GND or DC feed |
| 7 | GND |
| 8 | GND |

RECOMMENDED PC BOARD PATTERN



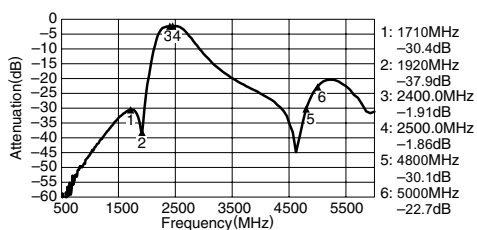
ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-------------------|--------------|
| Unbalanced impedance | 50Ω(Nominal) | |
| Balanced impedance | 50Ω(Nominal) | |
| Frequency range | 2400 to 2500MHz | |
| Insertion loss | [+25°C] | 2.4dB max. |
| | [-40 to +85°C] | 2.7dB max. |
| Attenuation | [1710 to 1920MHz] | 25dB min. |
| | [4800 to 5000MHz] | 15dB min. |
| Unbalanced port return loss | 10dB min. | |
| Phase difference at balanced port | 180±20deg | |
| Amplitude impedance at balanced port | 0±2.0dB | |
| Temperature range | Operating | -40 to +85°C |
| | Storage | -40 to +85°C |

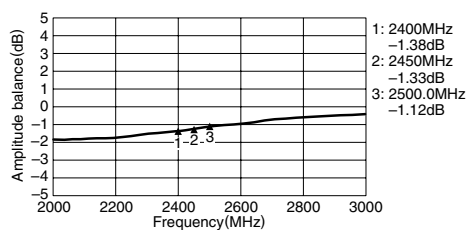
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

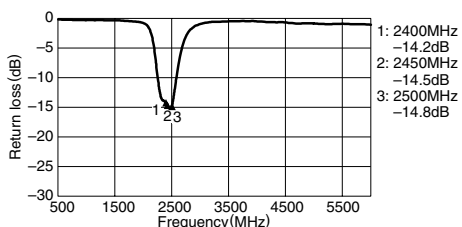
ATTENUATION vs. INSERTION LOSS



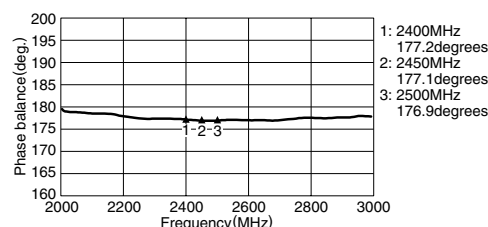
AMPLITUDE BALANCE



UNBALANCED PORT RETURN LOSS



PHASE BALANCE

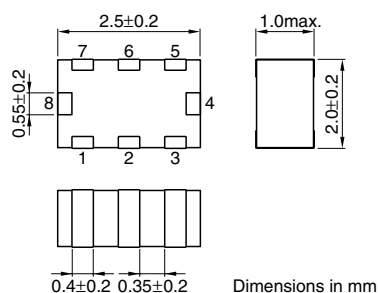


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA252450BT-7004B1 for Bluetooth & 2.4GHz W-LAN

SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|----------------|
| 1 | Balanced |
| 2 | Balanced |
| 3 | GND |
| 4 | Unbalanced |
| 5 | GND |
| 6 | GND or DC feed |
| 7 | GND |
| 8 | GND |

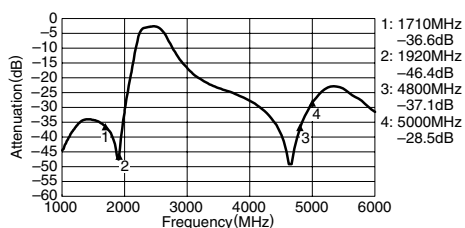
ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-------------------|--------------|
| Unbalanced impedance | 50Ω nom. | |
| Balanced impedance | 200Ω nom. | |
| Frequency range | 2400 to 2500MHz | |
| Insertion loss | [+25°C] | 3.0dB max. |
| | [-40 to +85°C] | 3.3dB max. |
| Attenuation | [1710 to 1920MHz] | 25dB min. |
| | [4800 to 5000MHz] | 15dB min. |
| Unbalanced port return loss | 5dB min. | |
| Phase difference at balanced port | 180±10deg | |
| Amplitude impedance at balanced port | 0±2.0dB | |
| Temperature range | Operating | -40 to +85°C |
| | Storage | -40 to +85°C |

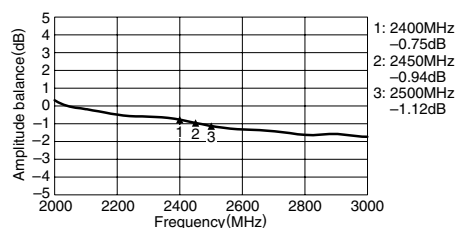
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

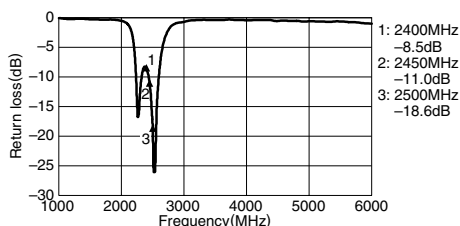
ATTENUATION vs. INSERTION LOSS



AMPLITUDE BALANCE

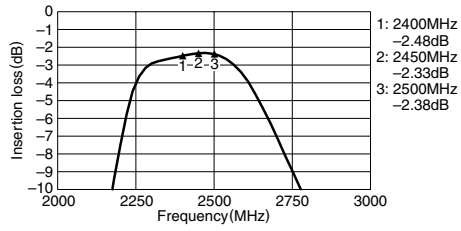


RETURN LOSS

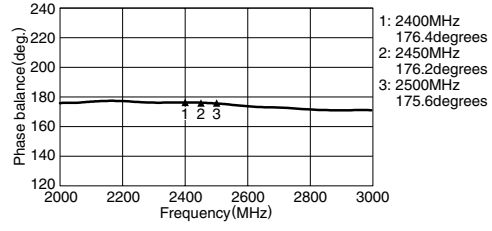


• All specifications are subject to change without notice.

INSERTION LOSS



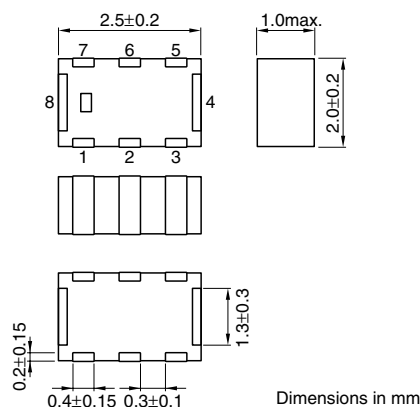
PHASE BALANCE



Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA252450BT-7012D1 for Bluetooth & 2.4GHz W-LAN

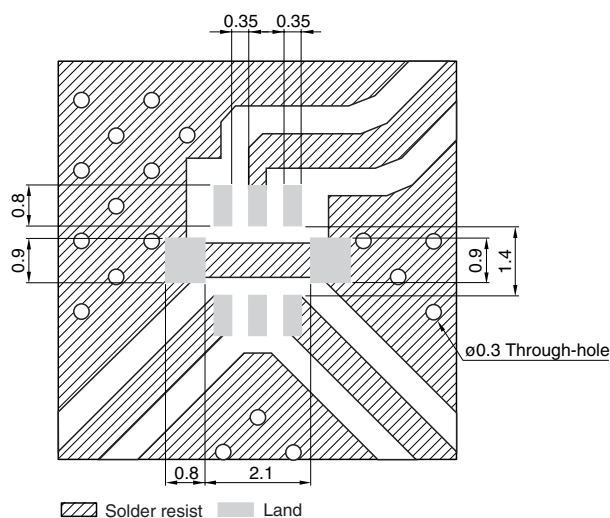
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|----------------|
| 1 | N.C. |
| 2 | Unbalanced |
| 3 | DC feed or GND |
| 4 | GND |
| 5 | Balanced |
| 6 | N.C. |
| 7 | Balanced |
| 8 | GND |

RECOMMENDED PC BOARD PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

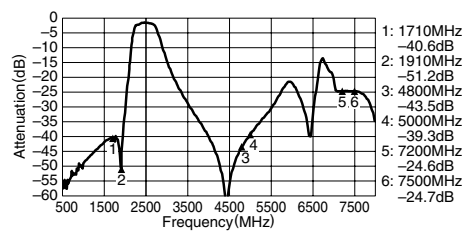
| Item | Typical value | | |
|--------------------------------------|-------------------|--------------|-------|
| Unbalanced impedance | 50Ω(Nominal) | — | |
| Balanced impedance | 100Ω(Nominal) | — | |
| Frequency range (Pass Band) | 2400 to 2500MHz | — | |
| Insertion loss | [+25°C] | 1.9dB max. | 1.5dB |
| | [−40 to +85°C] | 2.2dB max. | — |
| Attenuation | [880 to 960MHz] | 40dB min. | 50dB |
| | [1710 to 1910MHz] | 32dB min. | 42dB |
| | [4800 to 5000MHz] | 30dB min. | 40dB |
| Unbalanced port return loss | 10dB min. | 14dB | |
| Phase difference at balanced port | 180±12deg | 188deg | |
| Amplitude impedance at balanced port | 0±1.0dB | 0dB | |
| Temperature range | Operating | −40 to +85°C | |
| | Storage | −40 to +85°C | |

• All specifications are subject to change without notice.

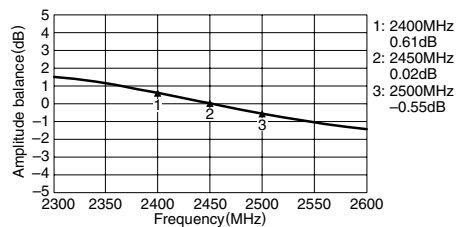
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

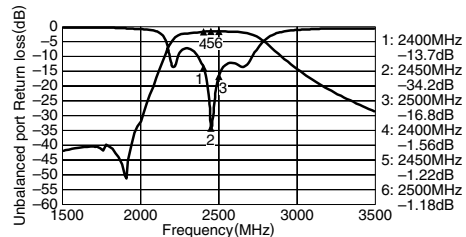
ATTENUATION



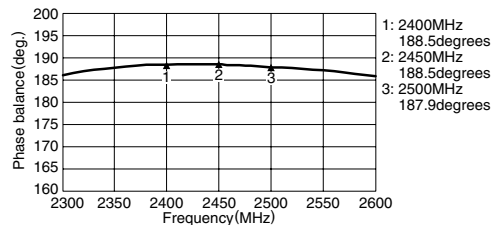
AMPLITUDE BALANCE



UNBALANCED PORT RETURN LOSS



PHASE BALANCE

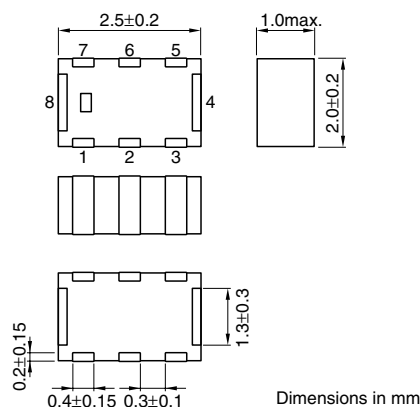


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA252450BT-7014D1 for Bluetooth & 2.4GHz W-LAN

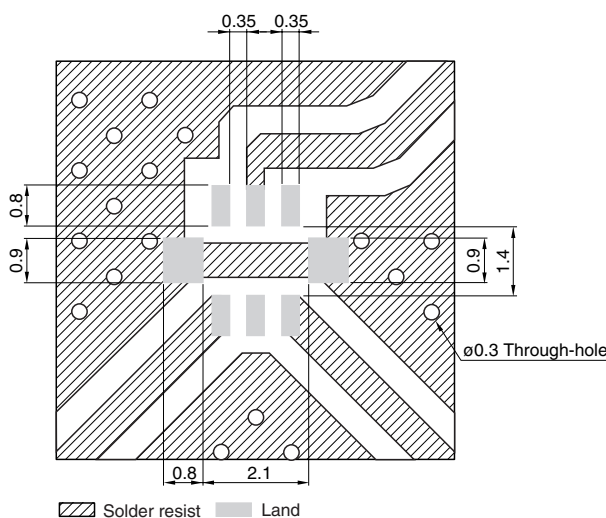
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|----------------|
| 1 | N.C. |
| 2 | Unbalanced |
| 3 | DC feed or GND |
| 4 | GND |
| 5 | Balanced |
| 6 | N.C. |
| 7 | Balanced |
| 8 | GND |

RECOMMENDED PC BOARD PATTERN



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

Dimensions in mm

ELECTRICAL CHARACTERISTICS

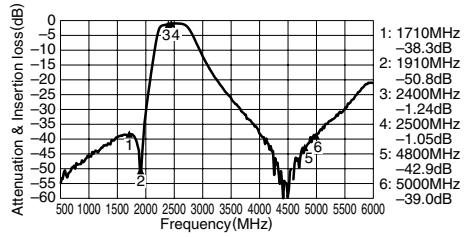
| Item | Typical value | |
|--------------------------------------|-------------------|--------------|
| Unbalanced impedance | 50Ω(Nominal) | — |
| Balanced impedance | 50Ω(Nominal) | — |
| Frequency range (Pass Band) | 2400 to 2500MHz | — |
| Insertion loss | [+25°C] | 1.7dB max. |
| | [−40 to +85°C] | 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. | 17dB |
| Phase difference at balanced port | 180±15deg | 190deg |
| Amplitude impedance at balanced port | 0±1.0dB | 0.2dB |
| Temperature range | Operating | −40 to +85°C |
| | Storage | −40 to +85°C |

• All specifications are subject to change without notice.

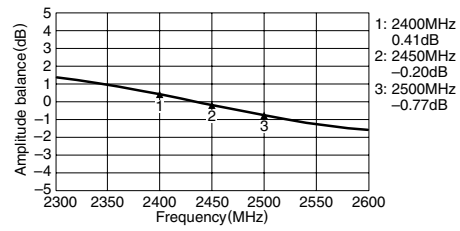
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

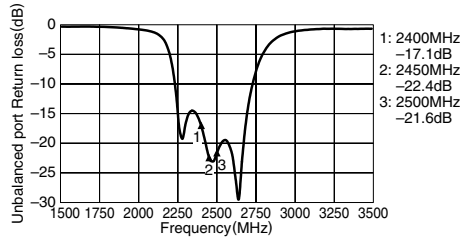
ATTENUATION vs. INSERTION LOSS



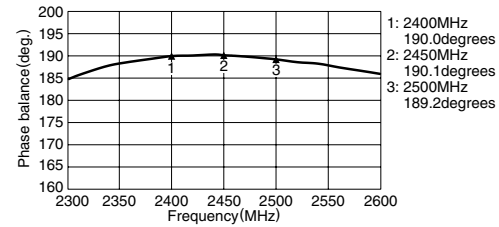
AMPLITUDE BALANCE



UNBALANCED PORT RETURN LOSS



PHASE BALANCE

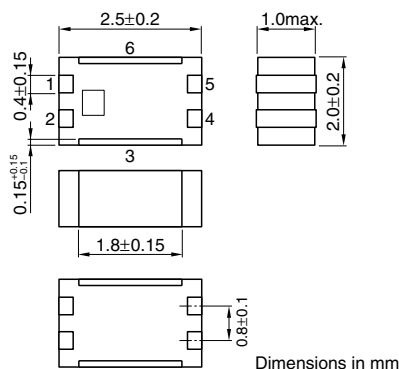


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA252450BT-7022B1 for Bluetooth & 2.4GHz W-LAN

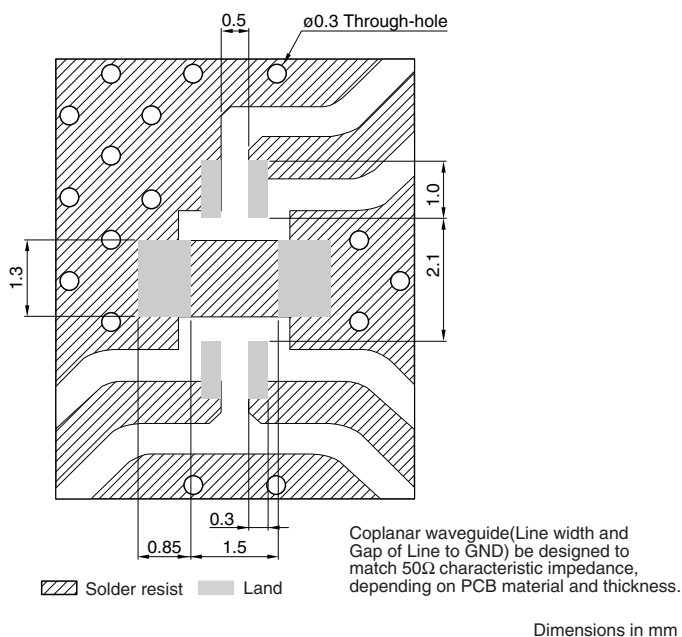
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|-------------------|
| 1 | Unbalanced |
| 2 | DC feed or RF GND |
| 3 | GND |
| 4 | Balanced |
| 5 | Balanced |
| 6 | GND |

RECOMMENDED PC BOARD PATTERN



ELECTRICAL CHARACTERISTICS

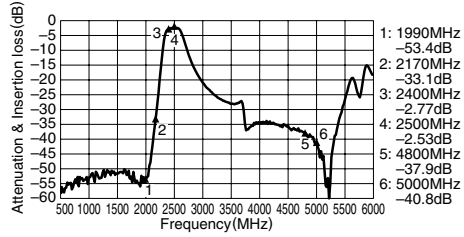
| Item | Typical value | | |
|--------------------------------------|-------------------|--------------|--------|
| Frequency range (Pass Band) | 2400 to 2500MHz | | |
| Unbalanced impedance | 50Ω(Nominal) | | |
| Balanced impedance | 100Ω(Nominal) | | |
| Unbalanced port return loss | 9.5dB min. | | |
| Insertion loss (Pass Band) | [+25°C] | 3.0dB max. | 2.7dB |
| | [-40 to +85°C] | 3.3dB max. | 3.0dB |
| Ripple (Pass Band) | [880 to 960MHz] | 48dB min. | 52dB |
| | [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 impedance 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 | |

• All specifications are subject to change without notice.

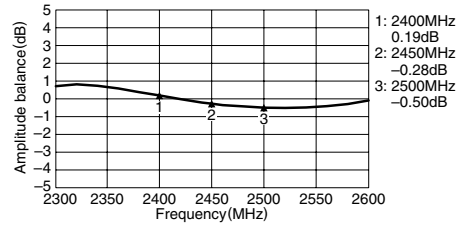
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

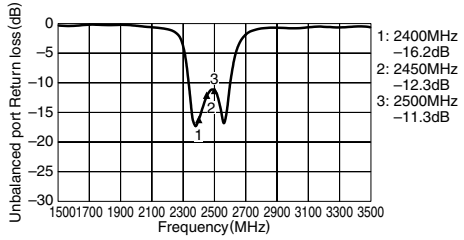
ATTENUATION vs. INSERTION LOSS



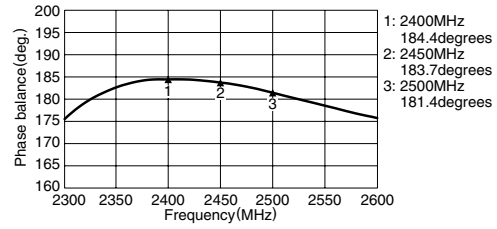
AMPLITUDE BALANCE



UNBALANCED PORT RETURN LOSS



PHASE BALANCE

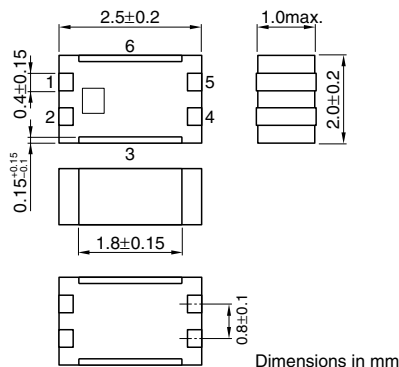


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA252450BT-7030B1 for Bluetooth & 2.4GHz W-LAN

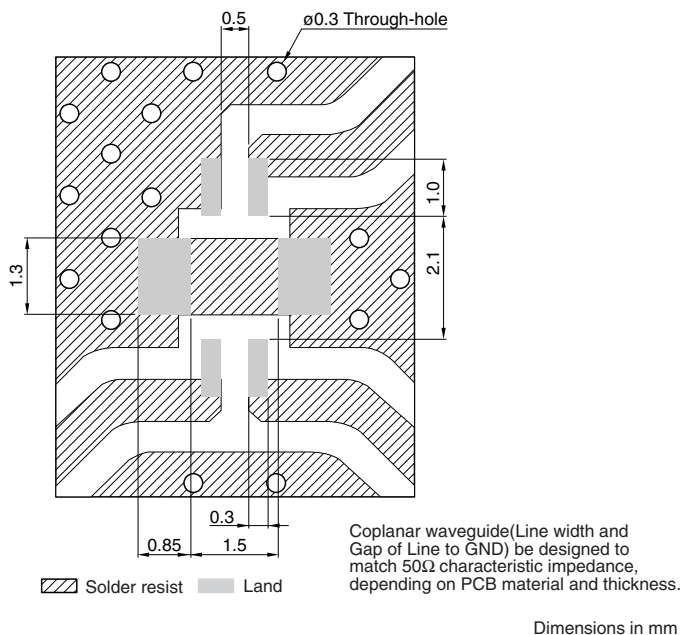
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|-------------------|
| 1 | Unbalanced |
| 2 | DC feed or RF GND |
| 3 | GND |
| 4 | Balanced |
| 5 | Balanced |
| 6 | GND |

RECOMMENDED PC BOARD PATTERN



ELECTRICAL CHARACTERISTICS

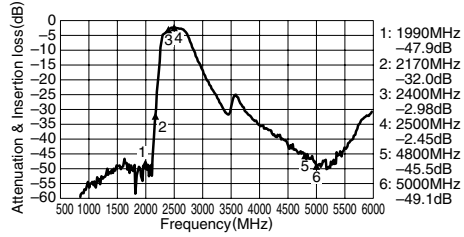
| Item | Typical value | | |
|--------------------------------------|-------------------|--------------|--------|
| Frequency range (Pass Band) | 2400 to 2500MHz | | |
| Unbalanced impedance | 50Ω(Nominal) | | |
| Balanced impedance | 18+j28Ω(Nominal) | | |
| Unbalanced port return loss | 6.0dB min. | 10dB | |
| Insertion loss (Pass Band) | [+25°C] | 3.3dB max. | 3.1dB |
| | [-40 to +85°C] | 3.6dB max. | 3.4dB |
| Ripple (Pass Band) | | 1.0dB max. | 0.3dB |
| | [880 to 960MHz] | 48dB min. | 57dB |
| | [1710 to 1990MHz] | 40dB min. | 43dB |
| | [3900 to 4100MHz] | 30dB min. | 37dB |
| Attenuation | [4800 to 5000MHz] | 30dB min. | 50dB |
| | | 1.8dB max. | 1.4dB |
| Amplitude impedance at balanced port | | 1.8dB max. | 1.4dB |
| Phase difference at balanced port | [25°C] | 180±7deg | 183deg |
| | [-40 to +85°C] | 180±10deg | — |
| Temperature range | Operating | -40 to +85°C | |
| | Storage | -40 to +85°C | |

• All specifications are subject to change without notice.

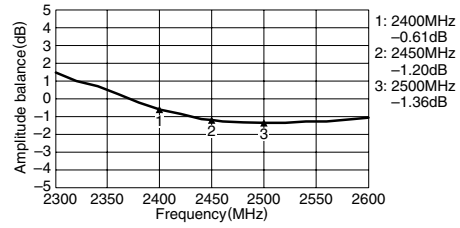
FREQUENCY CHARACTERISTICS

Unbalance 50Ω /Balance $18+j28\Omega$

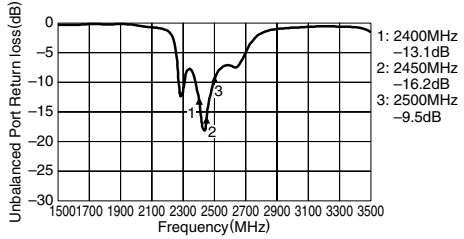
ATTENUATION & INSERTION LOSS



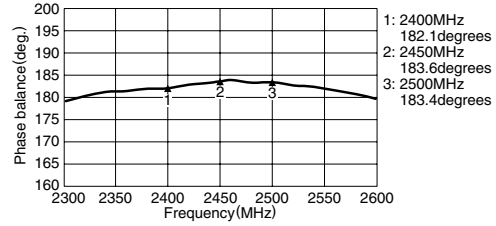
AMPLITUDE BALANCE



UNBALANCED PORT RETURN LOSS



PHASE BALANCE

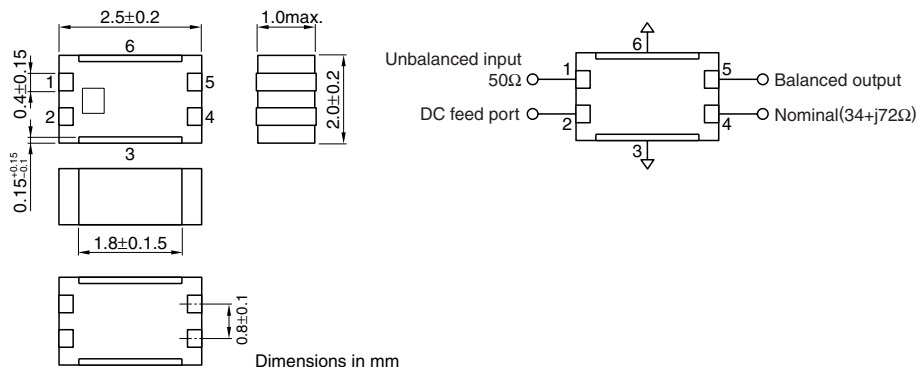


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA252450BT-7035B2 for for Bluetooth

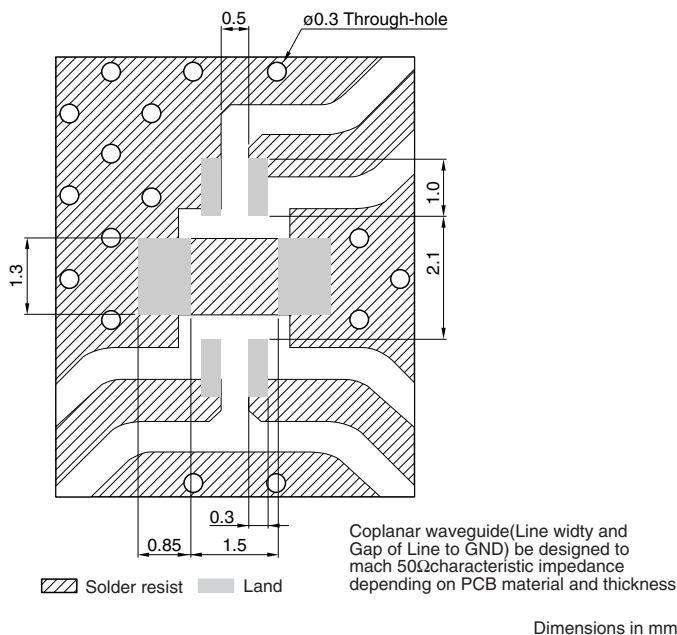
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-------------------|
| 1 | Unbalanced |
| 2 | DC feed or RF GND |
| 3 | GND |
| 4 | Balanced |
| 5 | Balanced |
| 6 | GND |

RECOMMENDED PC BOARD PATTERN



ELECTRICAL CHARACTERISTICS

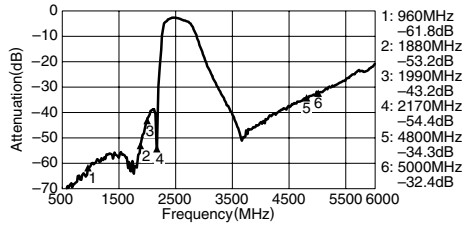
| Item | Typical value | |
|--------------------------------------|---------------------------|------------------|
| Frequency range | 2400 to 2500MHz | — |
| Unbalanced impedance | 50Ω(Nominal) | 50Ω(Nominal) |
| Balanced impedance | 34+j72Ω(Nominal) | 34+j72Ω(Nominal) |
| Unbalanced port return loss | 8.0dB min. | 10.9dB |
| Insertion loss | [−40 to +85°C] 3.6dB max. | 3.1dB |
| Ripple | 1.0dB max. | 0.2dB |
| Attenuation | [880 to 960MHz] | 50dB min. 62dB |
| | [1710 to 1880MHz] | 48dB min. 53dB |
| | [1880 to 1990MHz] | 38dB min. 43dB |
| | [2110 to 2170MHz] | 30dB min. 38dB |
| | [4800 to 5000MHz] | 25dB min. 32dB |
| Amplitude impedance at balanced port | 1.0dB max. | 0.3dB |
| | [25°C] 180±8deg | 180±4deg |
| Phase difference at balanced port | [−40 to +85°C] 180±10deg | — |
| Temperature range | Operating | −40 to +85°C |
| | Storage | −40 to +85°C |

• All specifications are subject to change without notice.

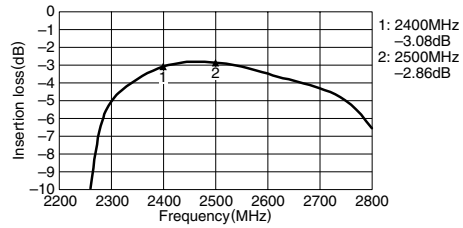
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

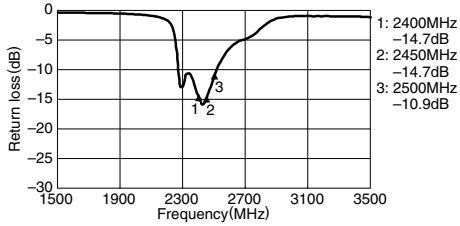
ATTENUATION



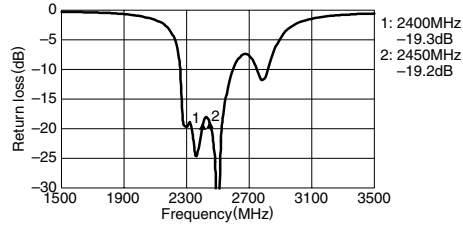
INSERTION LOSS



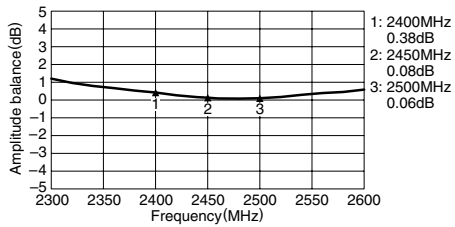
UNBALANCED PORT RETURN LOSS



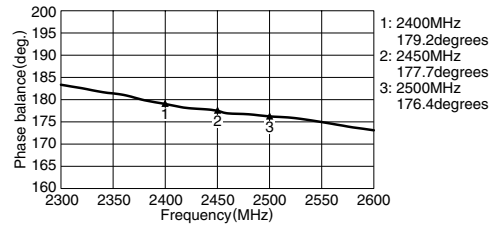
BALANCED PORT RETURN LOSS



AMPLITUDE BALANCE



PHASE BALANCE

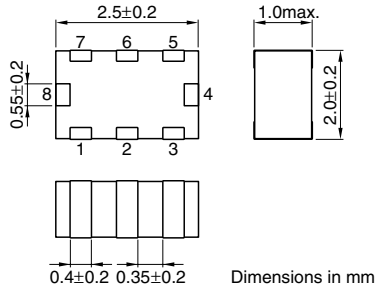


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA255512BT-7006A2 for 5GHz W-LAN

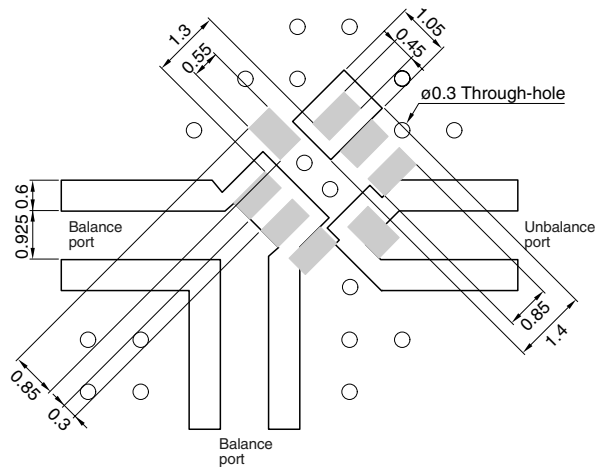
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|----------------|
| 1 | Balanced |
| 2 | Balanced |
| 3 | GND |
| 4 | Unbalanced |
| 5 | GND |
| 6 | GND or DC feed |
| 7 | NC |
| 8 | GND |

RECOMMENDED PC BOARD PATTERN



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

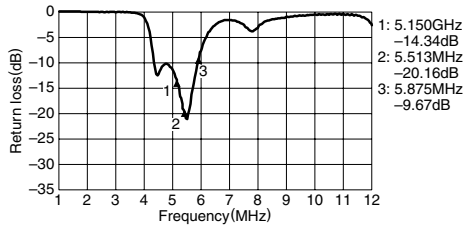
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 5150 to 5875MHz |
| Input Return Loss | 8dB min. |
| Insertion loss | [25°C] 2.5dB max. [FULL TEMP] 2.8dB max. |
| Attenuation | [DC-2700MHz] 35dB min. [10300 to 10700MHz] 20dB min. |
| Phase difference at balanced port | 180 ± 10 deg |
| Amplitude impedance at balanced port | 0 ± 1.5 dB max. |
| Temperature range | Operating -40 to $+85^\circ\text{C}$ Storage -40 to $+85^\circ\text{C}$ |

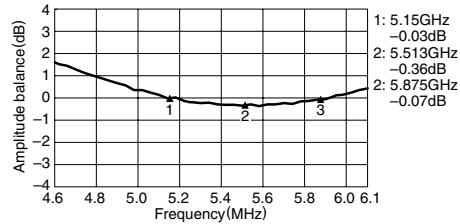
FREQUENCY CHARACTERISTICS

Unbalance 50Ω /Balance 200Ω

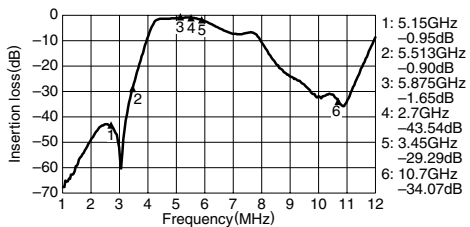
INPUT RETURN LOSS



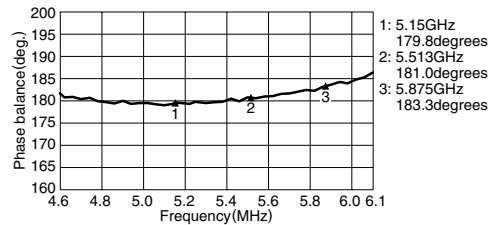
AMPLITUDE BALANCE



ATTENUATION



PHASE BALANCE

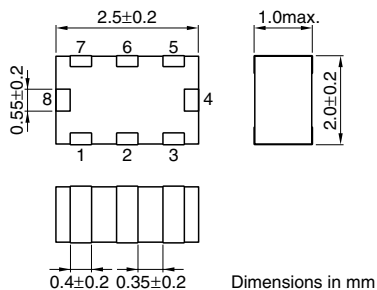


• All specifications are subject to change without notice.

Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA255250BT-7007A2 for 5GHz W-LAN

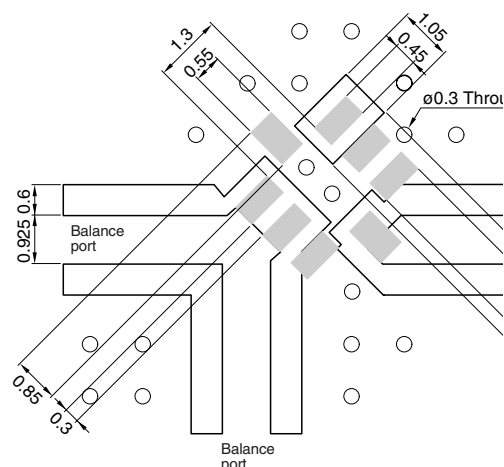
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|----------------|
| 1 | Balanced |
| 2 | Balanced |
| 3 | GND |
| 4 | Unbalanced |
| 5 | GND |
| 6 | GND or DC feed |
| 7 | NC |
| 8 | GND |

RECOMMENDED PC BOARD PATTERN



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

Dimensions in mm

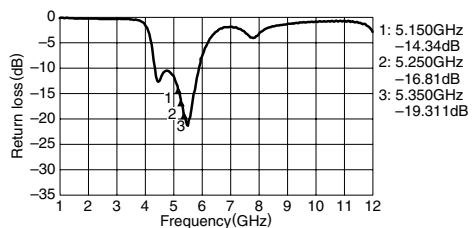
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|---|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 5150 to 5350 MHz |
| Input Return Loss | 9 dB min. |
| Insertion loss | [25°C] 2.0dB max. [FULL TEMP] 2.3dB max. |
| Attenuation | [DC-2700MHz] 35dB min. [10300 to 10700MHz] 20dB min. |
| Phase difference at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±1.0dB |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |

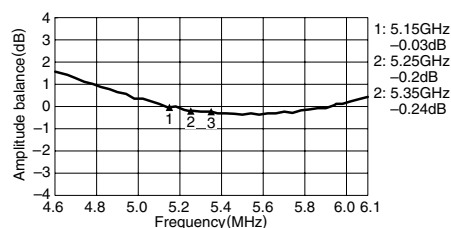
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

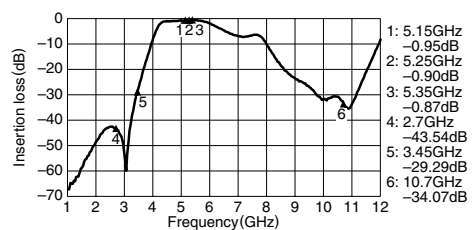
INPUT RETURN LOSS



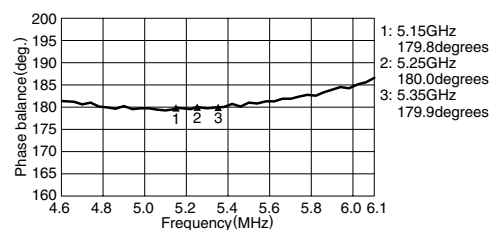
AMPLITUDE BALANCE



ATTENUATION



PHASE BALANCE

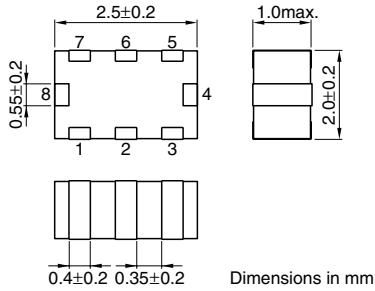


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Multilayer Band Pass Filters(Balance Output Type), DEA Series

DEA255425BT-7008A2 5GHz W-LAN

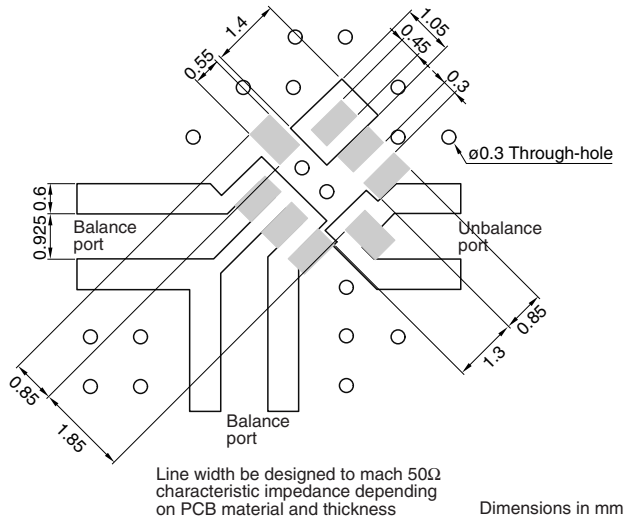
SHAPES AND DIMENSIONS



TERMINAL FUNCTIONS

| | |
|---|----------------|
| 1 | Balanced |
| 2 | Balanced |
| 3 | GND |
| 4 | Unbalanced |
| 5 | GND |
| 6 | GND or DC feed |
| 7 | NC |
| 8 | GND |

RECOMMENDED PC BOARD PATTERN



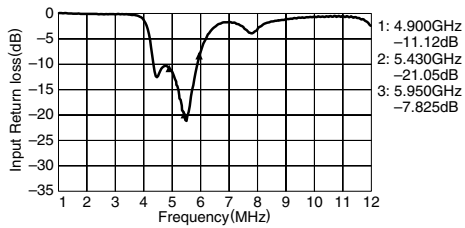
ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|---------------------|--------------|
| Unbalanced impedance | 50Ω(Nominal) | |
| Balanced impedance | 100Ω(Nominal) | |
| Frequency range (Pass Band) | 4900 to 5950MHz | |
| Insertion loss | [+25°C] | 2.5dB max. |
| | [Full temp] | 2.8dB max. |
| Attenuation | [DC to 2700MHz] | 35dB min. |
| | [10300 to 10700MHz] | 20dB min. |
| Input return loss | 7dB min. | |
| Phase Imbalance at balanced ports | 180±15deg | |
| Amplitude impedance at balanced port | 0±2.0dB | |
| Temperature range | Operating | -40 to +85°C |
| | Storage | -40 to +85°C |

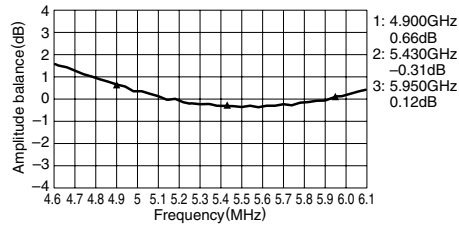
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

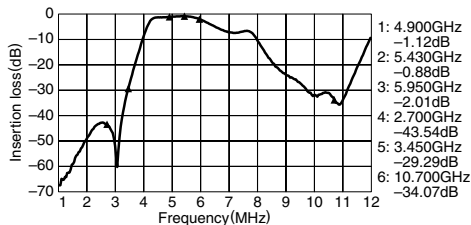
INPUT RETURN LOSS



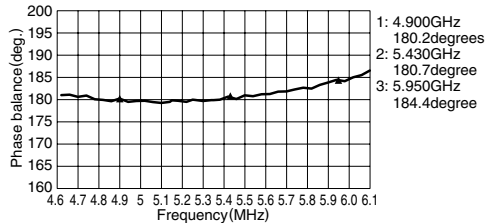
AMPLITUDE BALANCE



ATTENUATION



PHASE BALANCE



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