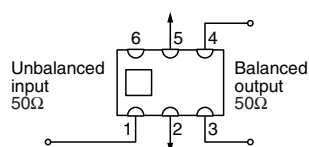
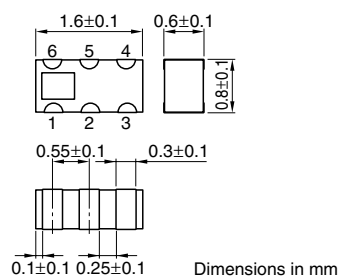


Multilayer Baluns, HHM Series

HHM1710D1 For Bluetooth & IEEE802.11b/g

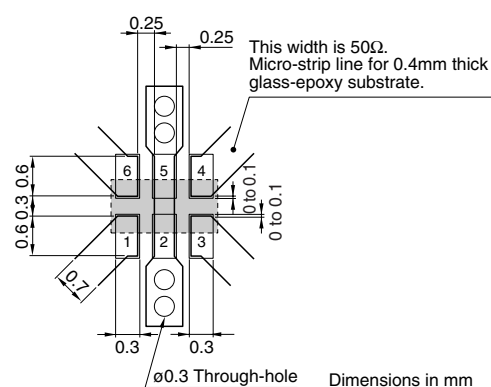
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



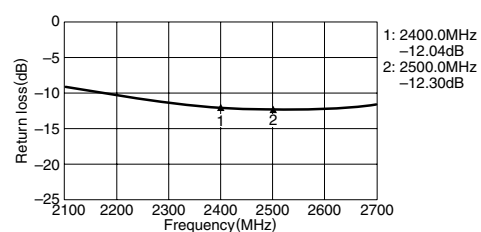
ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-----------------|--------------|
| Unbalanced impedance | 50Ω | |
| Balanced impedance | 50Ω | |
| Frequency range | 2400 to 2500MHz | |
| Unbalanced port return loss | 10dB min. | |
| Phase impedance at balanced port | 180±10deg | |
| Amplitude impedance at balanced port | 0±2.0dB | |
| Insertion loss | 1.2dB max. | |
| Temperature range | Operating | -40 to +85°C |
| | Storage | -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel | |

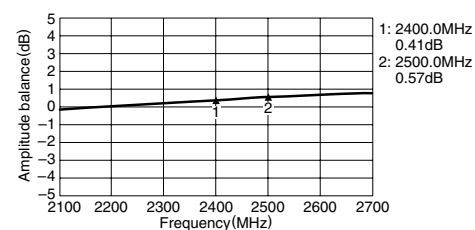
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

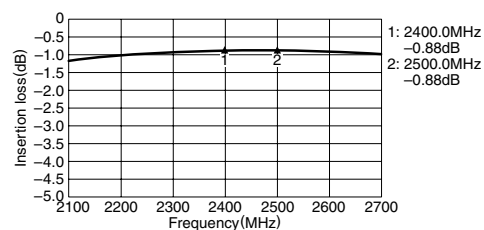
RETURN LOSS



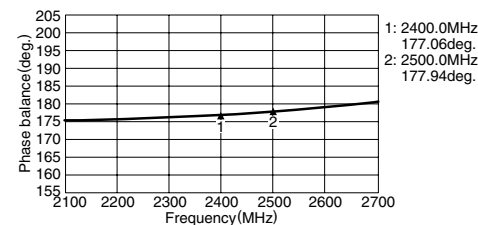
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

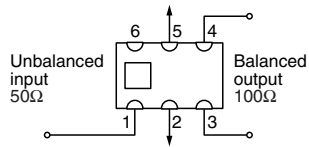
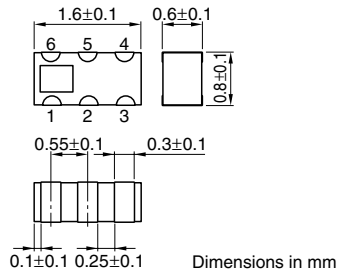


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1711D1 For Bluetooth & IEEE802.11b/g

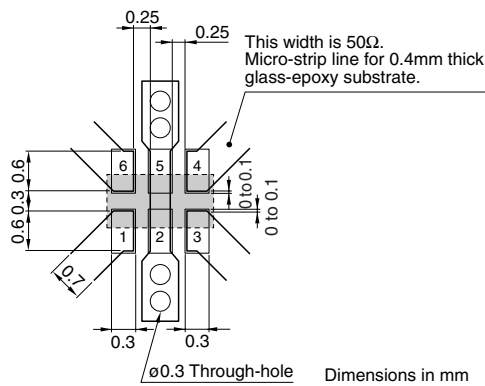
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



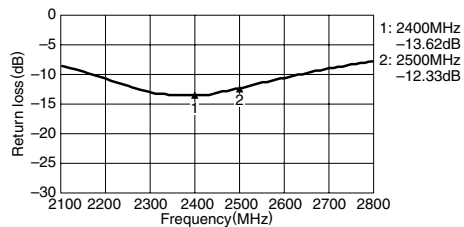
ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|------------------|--------------|
| Unbalanced impedance | 50Ω | |
| Balanced impedance | 100Ω | |
| Frequency range | 2400 to 2500 MHz | |
| Unbalanced port return loss | 10dB min. | |
| Phase impedance at balanced port | 180±10deg | |
| Amplitude impedance at balanced port | 0±2.0dB | |
| Insertion loss | 1.2dB max. | |
| Temperature range | Operating | -40 to +85°C |
| | Storage | -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel | |

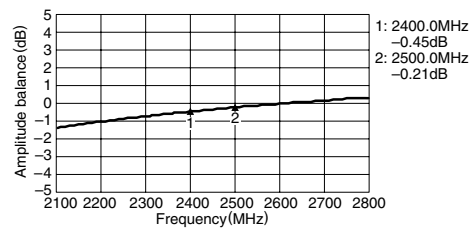
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

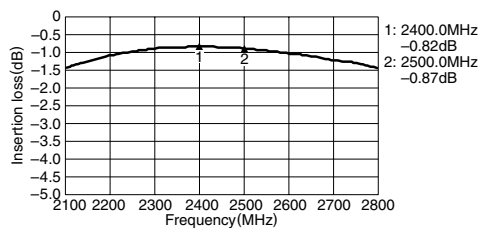
RETURN LOSS



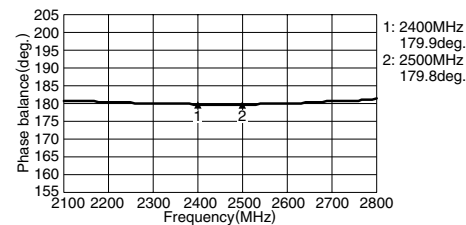
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

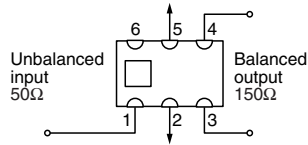
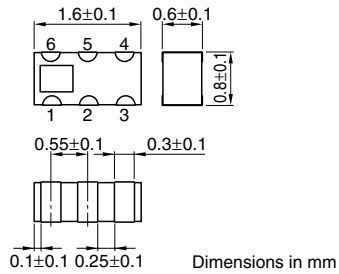


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1712D1 For Bluetooth & IEEE802.11b/g

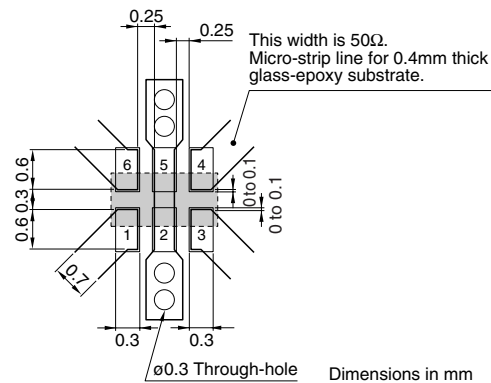
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



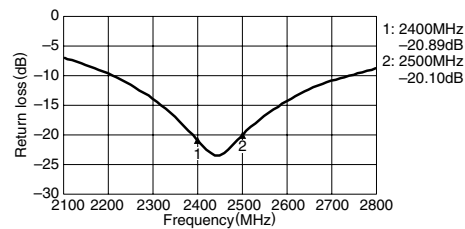
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 2400 to 2500 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

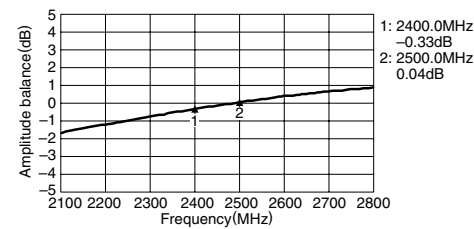
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

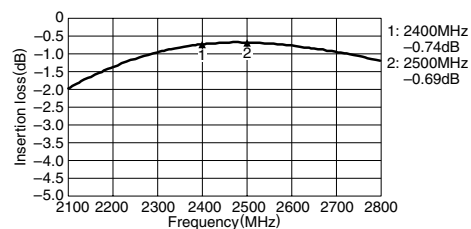
RETURN LOSS



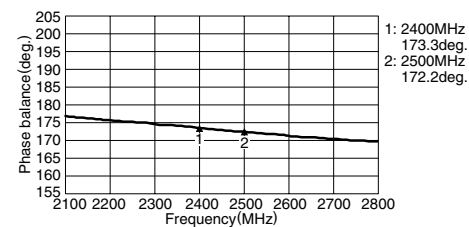
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

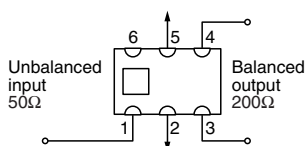
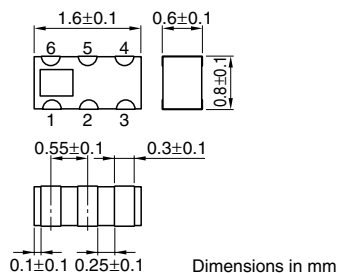


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1713D1 For Bluetooth & IEEE802.11b/g

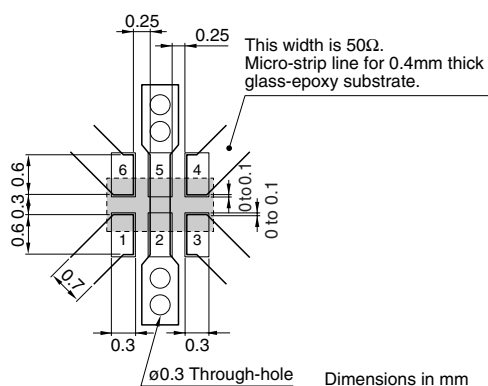
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



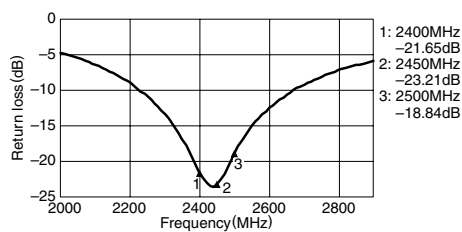
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 2400 to 2500 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

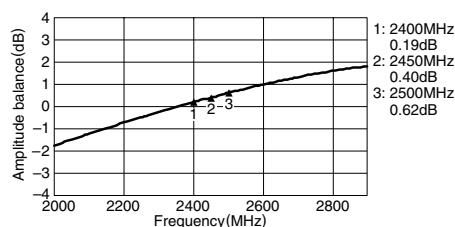
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

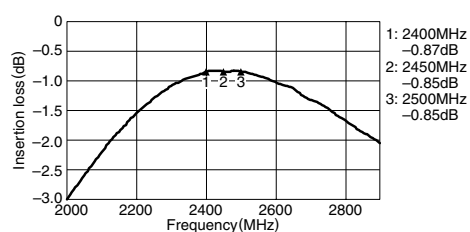
RETURN LOSS



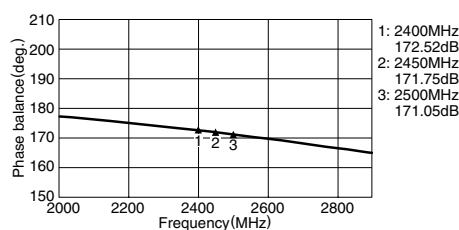
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

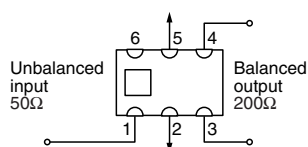
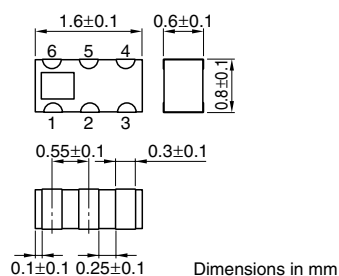


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1720A1 For EGSM

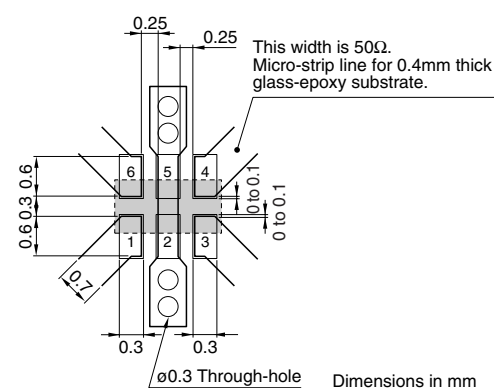
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



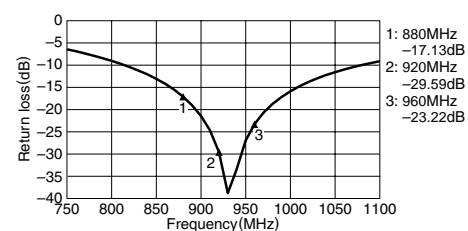
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 880 to 960 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.4dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

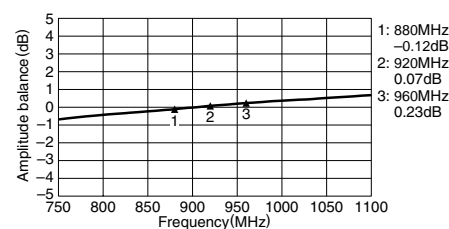
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

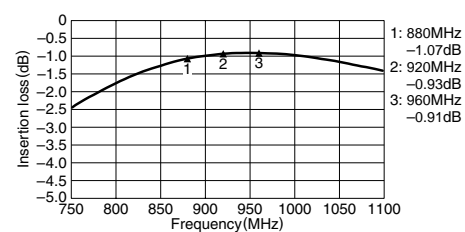
RETURN LOSS



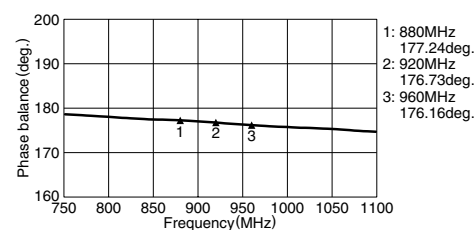
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

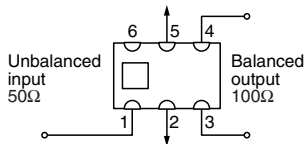
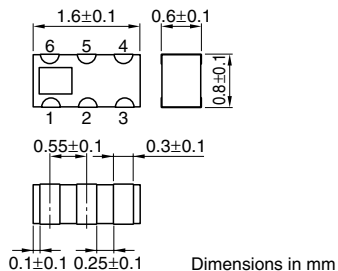


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1726L1 For PDC800/Tx+Rx

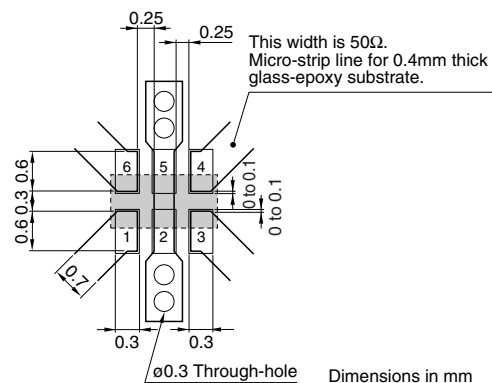
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



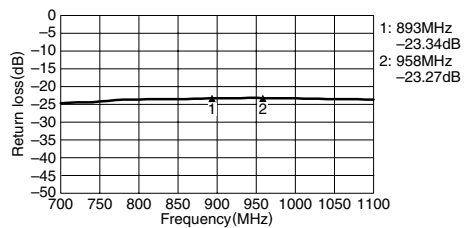
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 893 to 958 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±15deg |
| Amplitude impedance at balanced port | 0±1.5dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

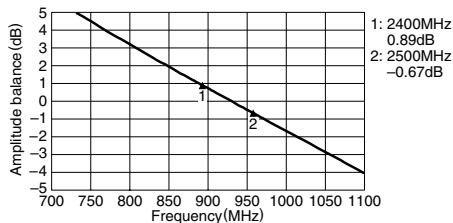
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

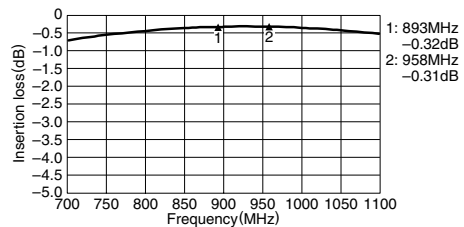
RETURN LOSS



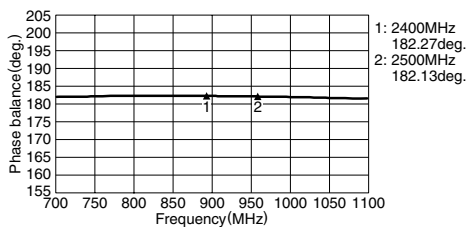
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

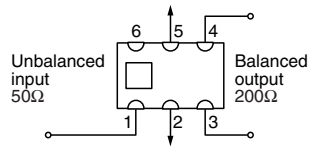
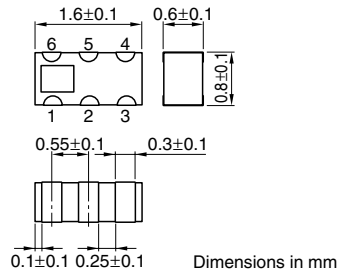


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1731A2 For DCS/Tx+Rx

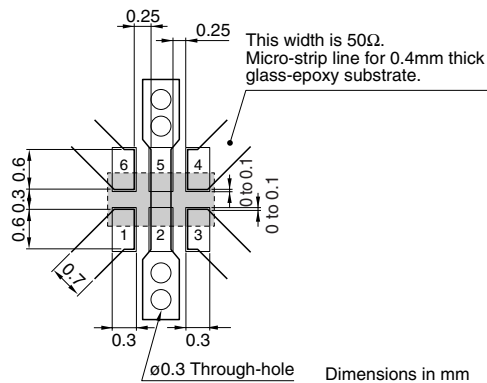
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



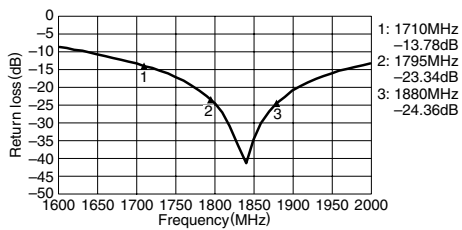
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 1710 to 1880 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

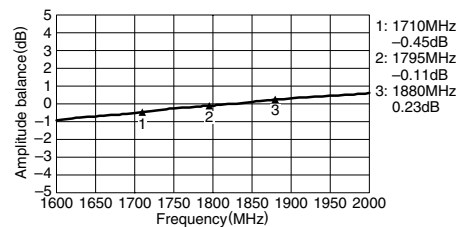
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

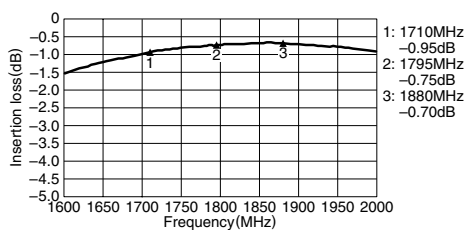
RETURN LOSS



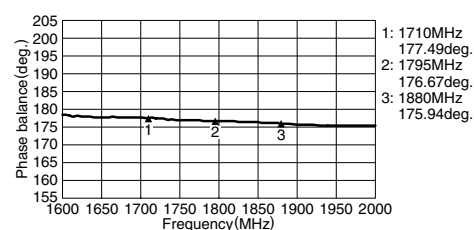
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

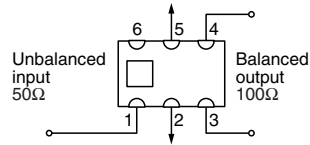
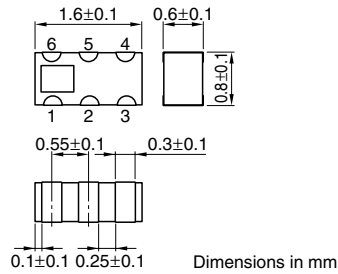


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1732B1 For W-LAN

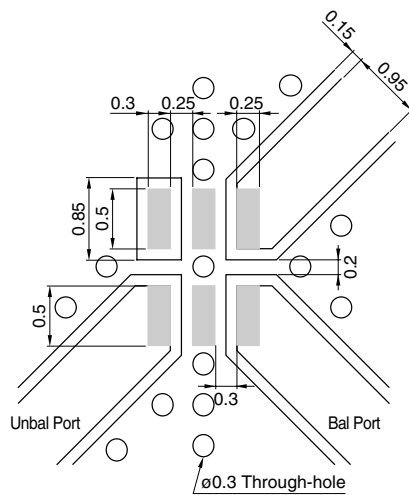
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



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

Dimensions in mm

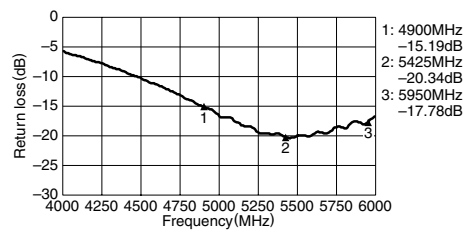
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 4900 to 5950 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

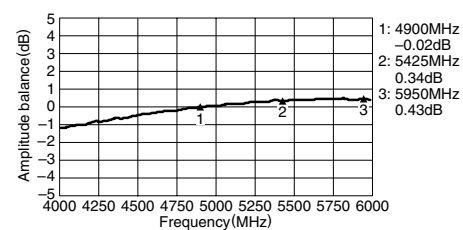
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

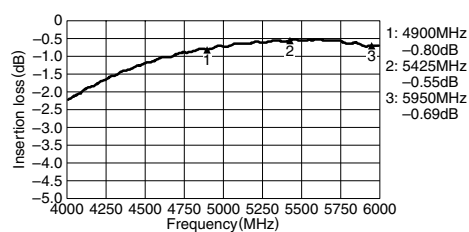
RETURN LOSS



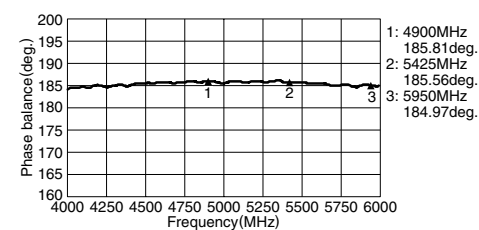
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

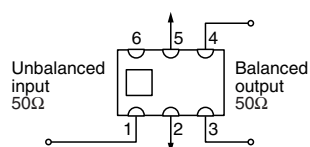
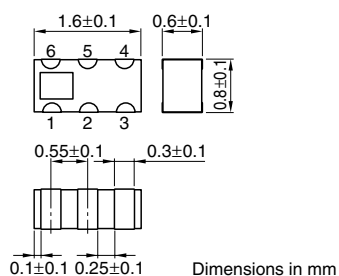


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1733B1 For W-LAN

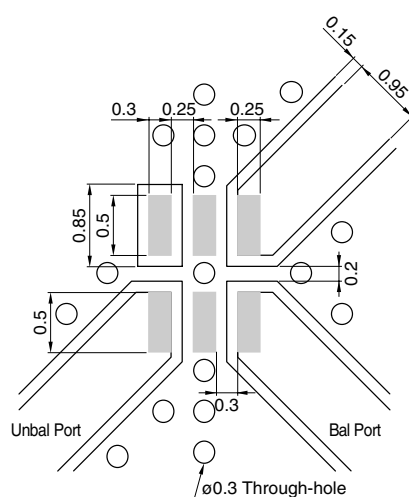
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



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

Dimensions in mm

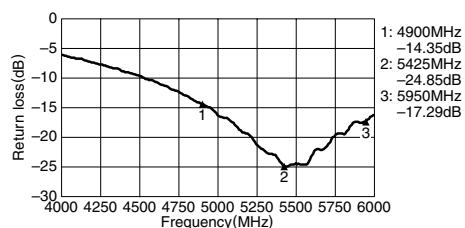
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50Ω |
| Frequency range | 4900 to 5950 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

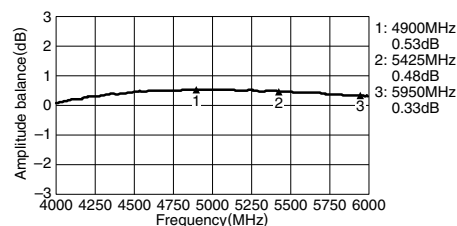
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

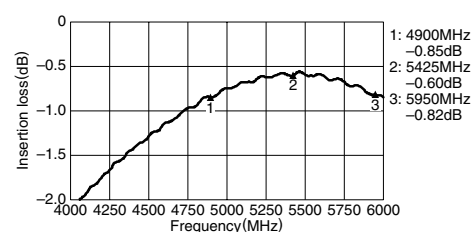
RETURN LOSS



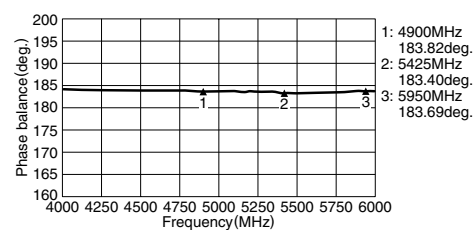
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

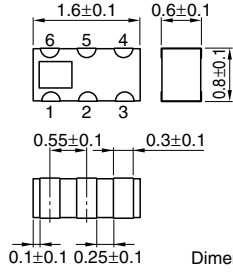


• All specifications are subject to change without notice.

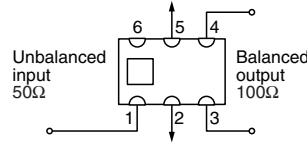
Multilayer Baluns, HHM Series

HHM1743L1 For PDC1500/Local

SHAPES AND DIMENSIONS/CIRCUIT



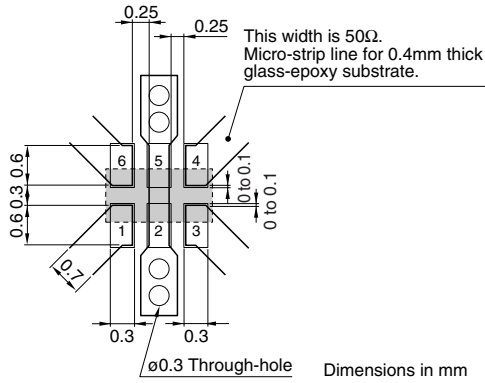
Dimensions in mm



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



Dimensions in mm

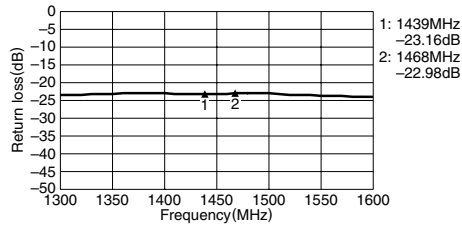
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 1439 to 1468 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±15deg |
| Amplitude impedance at balanced port | 0±1.5dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

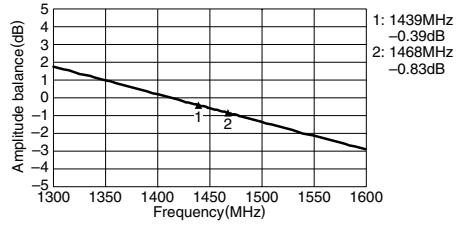
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

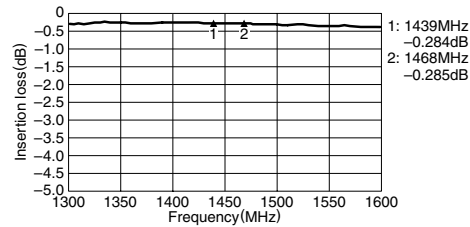
RETURN LOSS



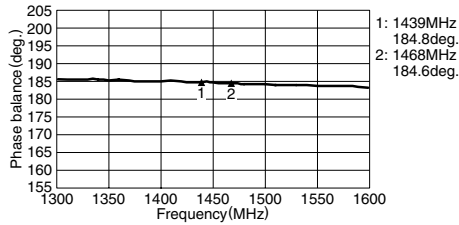
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

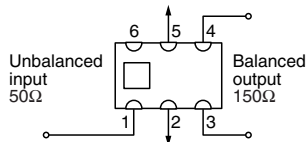
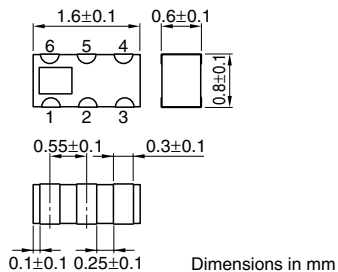


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1748A2 For DCS/Tx+Rx

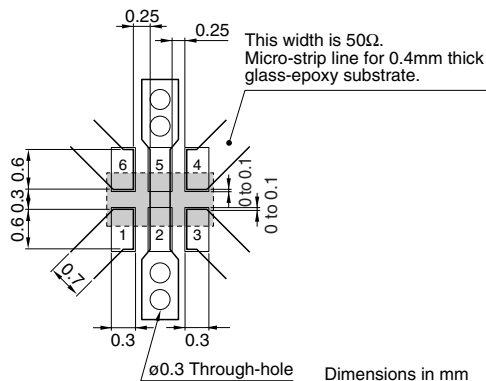
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



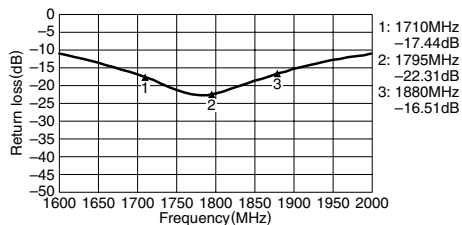
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 1710 to 1880 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

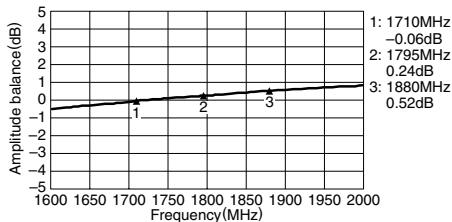
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

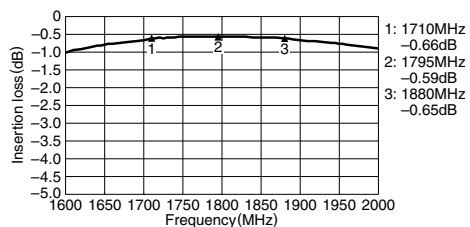
RETURN LOSS



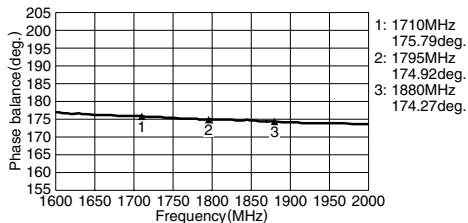
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

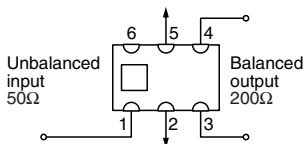
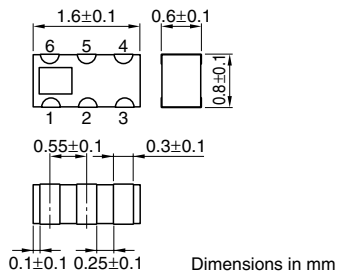


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1752A1 For W-LAN

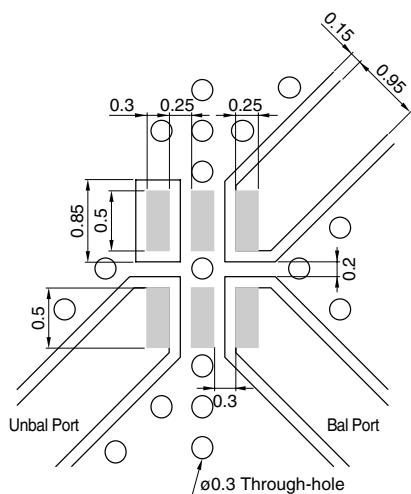
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



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

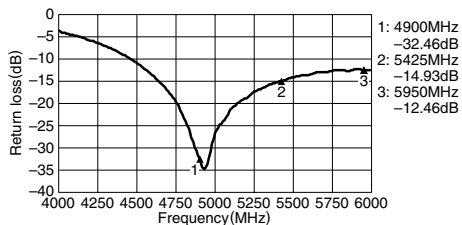
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 4900 to 5950 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

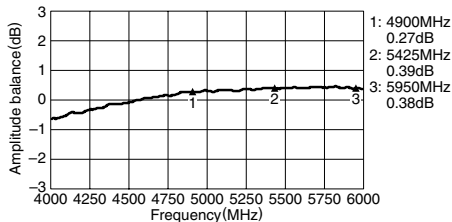
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

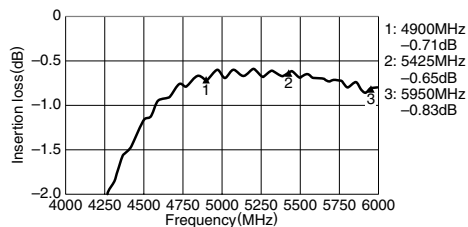
RETURN LOSS



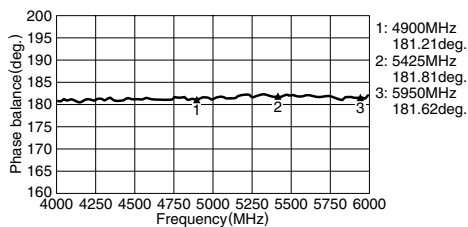
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

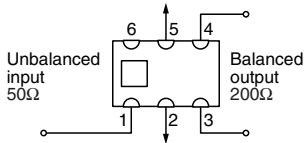
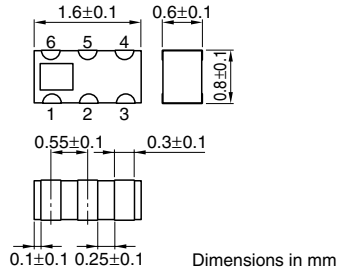


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1752A2 For W-LAN

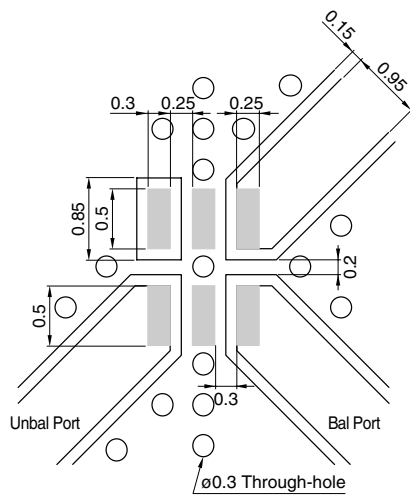
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



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

Dimensions in mm

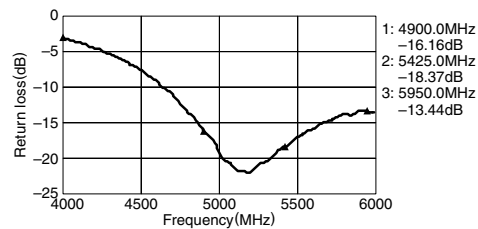
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 4900 to 5950 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±1.5dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

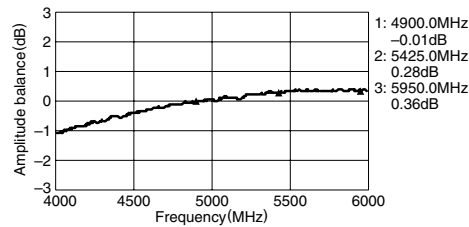
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

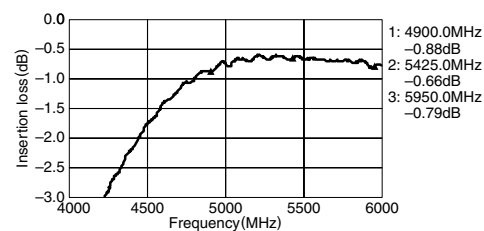
RETURN LOSS



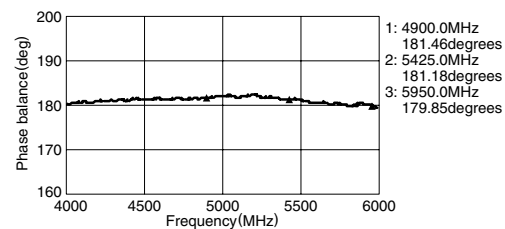
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

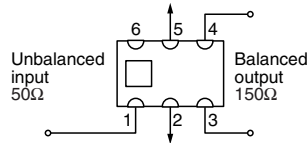
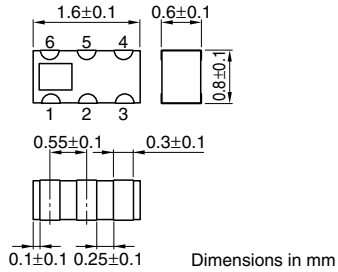


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1763A1 For EGSM

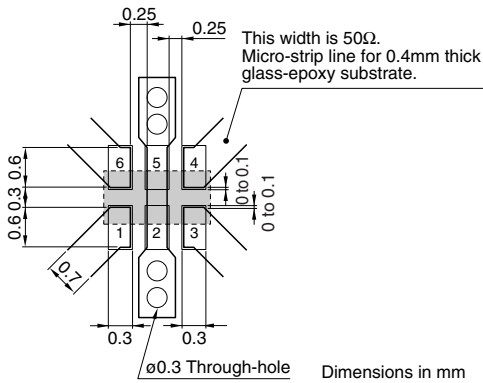
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



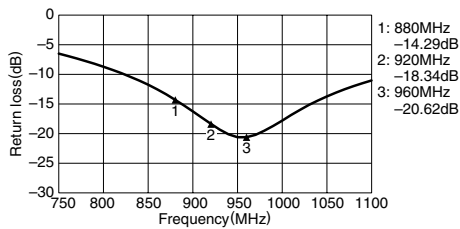
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 880 to 960 MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.4dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 4000pieces/reel |

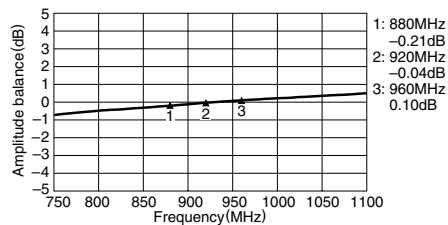
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

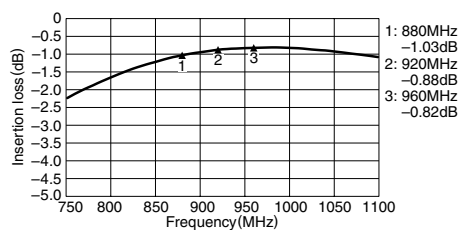
RETURN LOSS



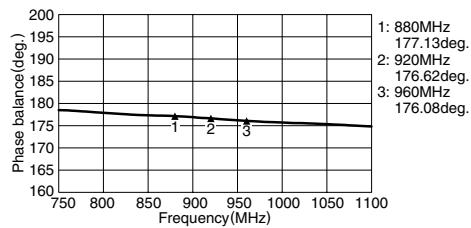
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

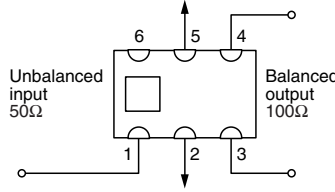
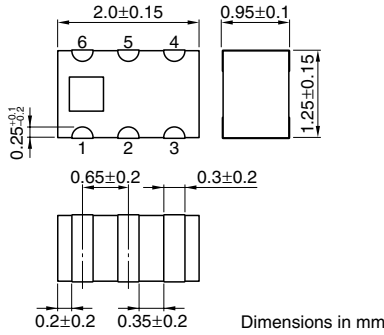


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1502 For DCS/Local

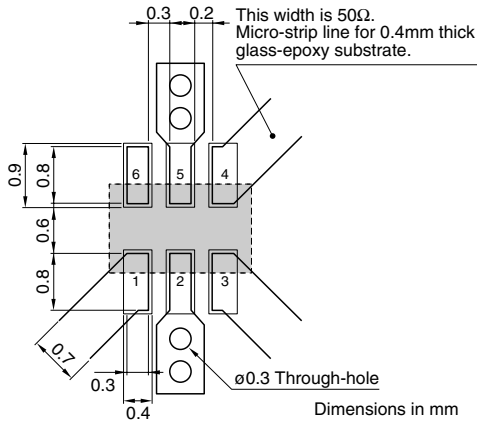
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



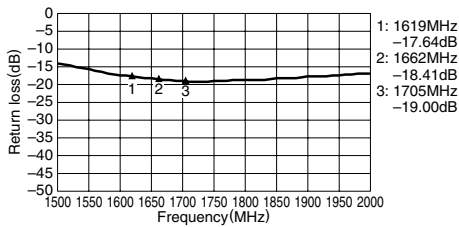
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 1662±43 MHz |
| Unbalanced port return loss | 12dB min. |
| Phase impedance at balanced port | 180±5deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 0.8dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

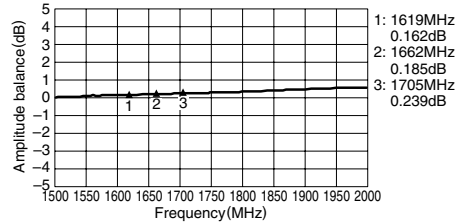
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

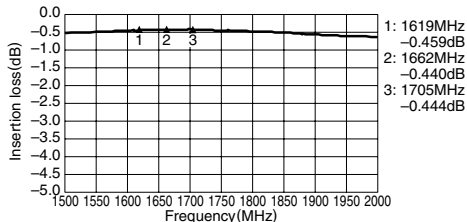
RETURN LOSS



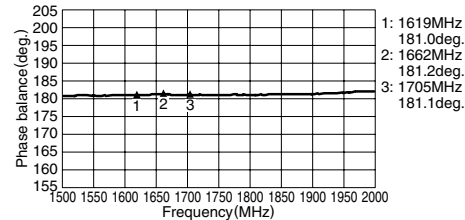
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

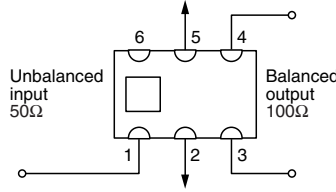
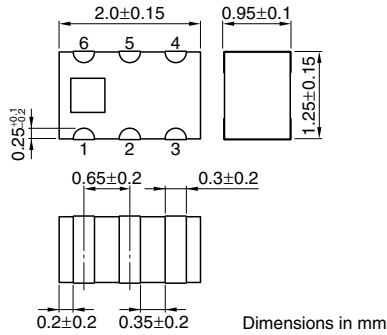


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1506 For W-CDMA/Tx-Rx

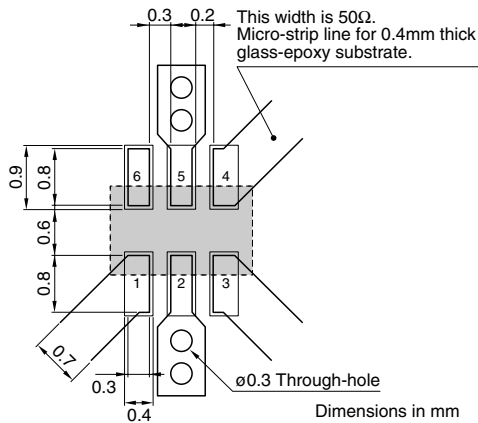
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



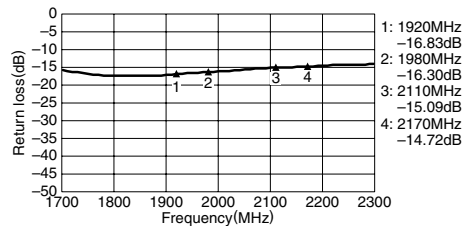
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 1920 to 1980, 2110 to 2170MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

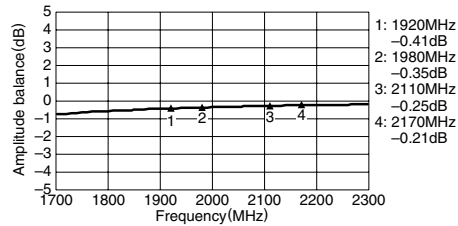
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

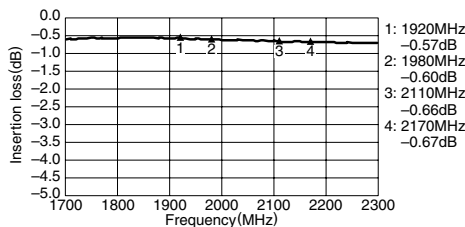
RETURN LOSS



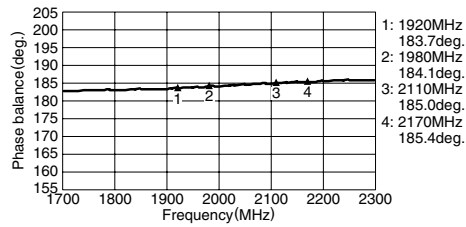
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

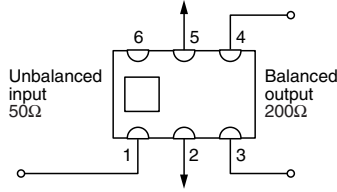
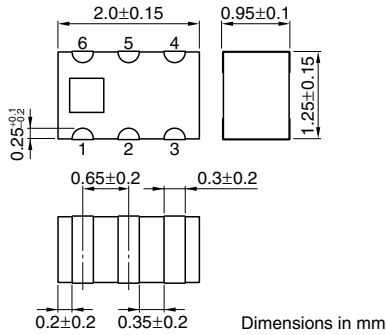


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1509 For EGSM-DCS/Local

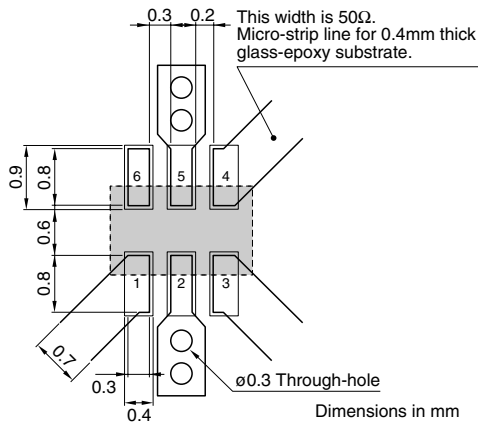
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



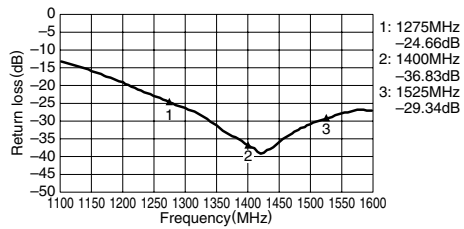
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 1275 to 1525MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

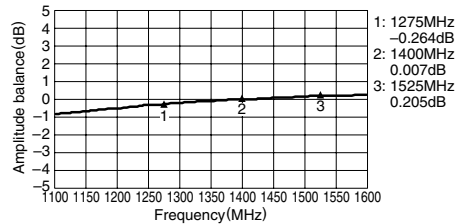
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

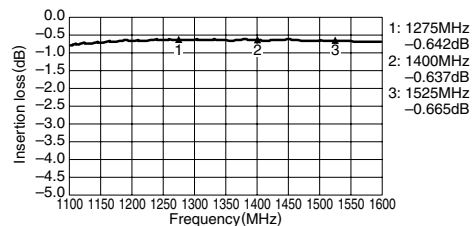
RETURN LOSS



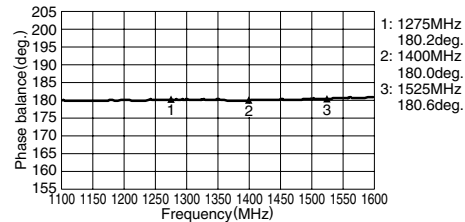
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

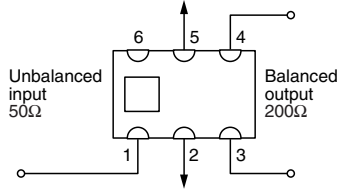
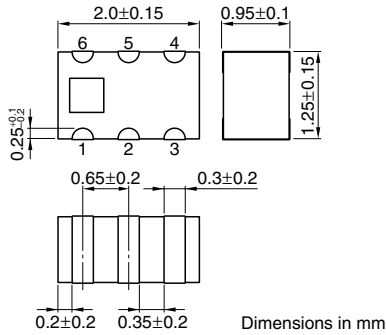


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1515B2 For EGSM/Tx-Rx

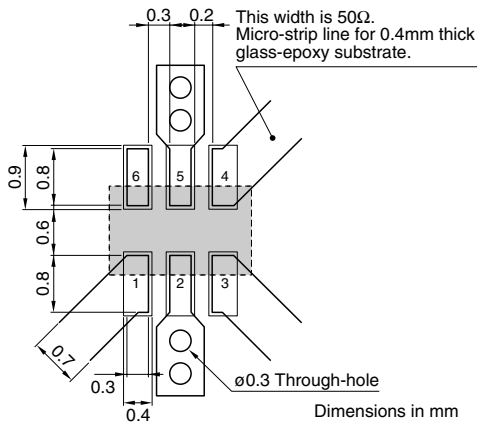
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



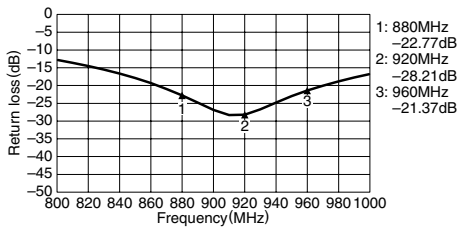
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|------------------------|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 880 to 960MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C |
| | Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

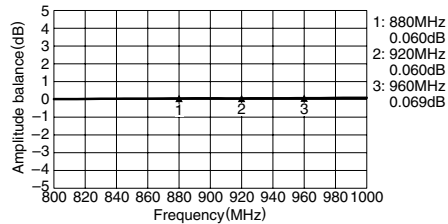
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

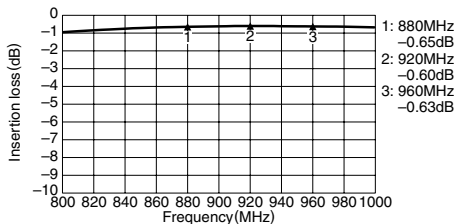
RETURN LOSS



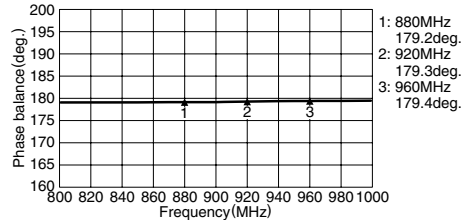
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

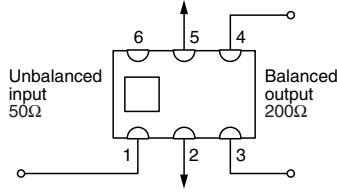
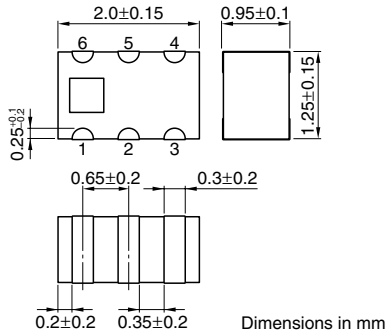


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1516 For DCS-PCS/Tx-Rx

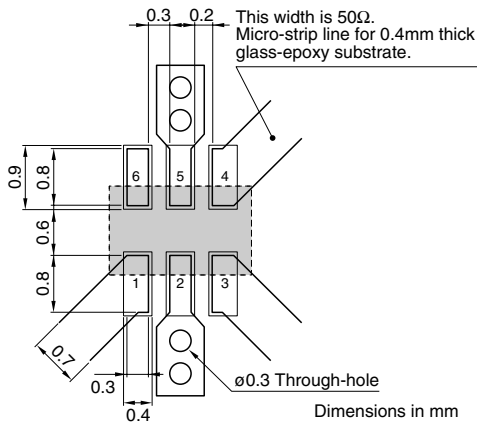
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



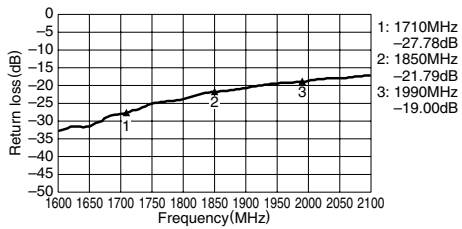
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200 Ω |
| Frequency range | 1710 to 1990MHz |
| Unbalanced port return loss | 10dB Min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

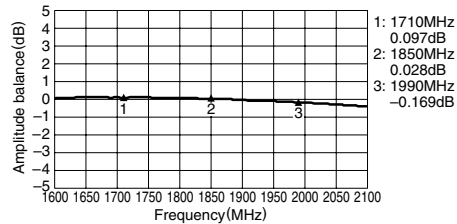
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

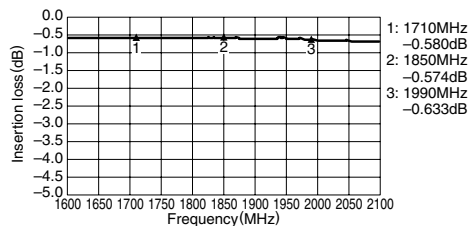
RETURN LOSS



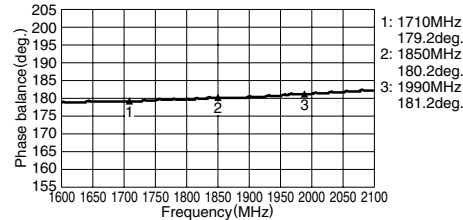
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

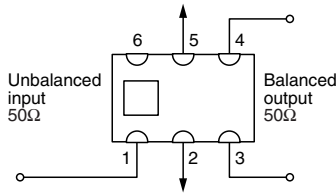
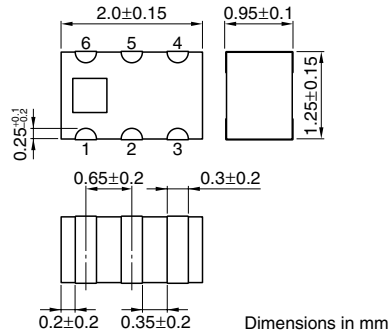


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1517 For Bluetooth&IEEE802.11b/g

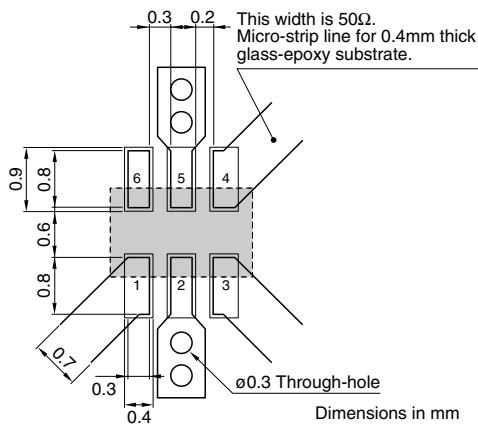
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



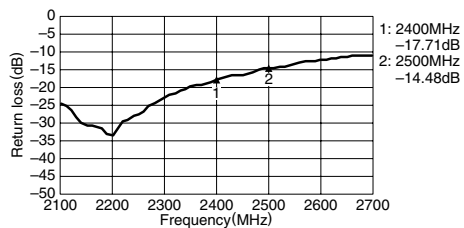
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50 Ω |
| Frequency range | 2400 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

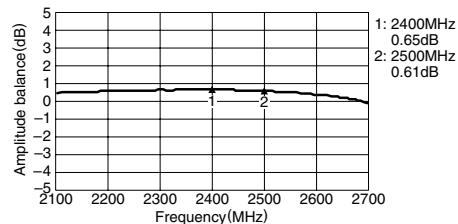
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

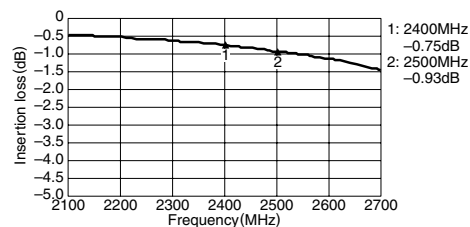
RETURN LOSS



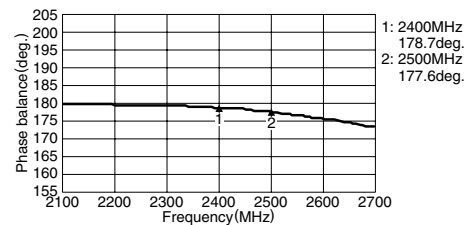
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

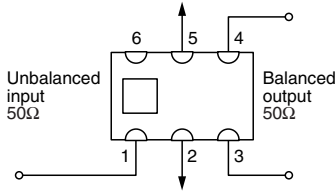
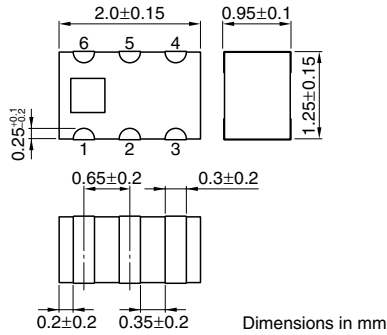


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1517A2 For Bluetooth&IEEE802.11b/g

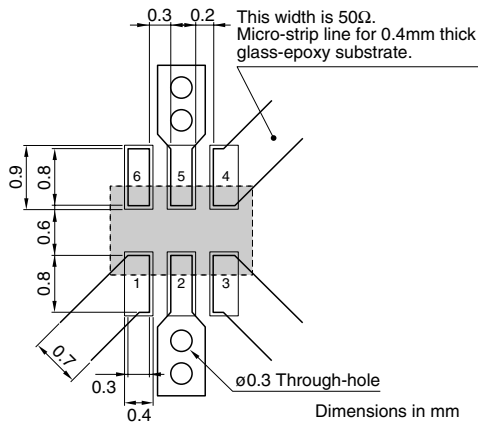
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



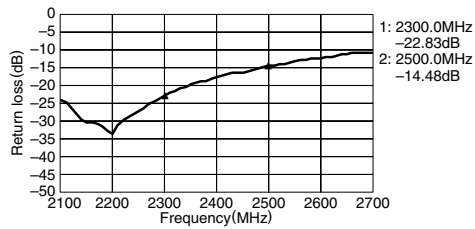
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50Ω |
| Frequency range | 2300 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

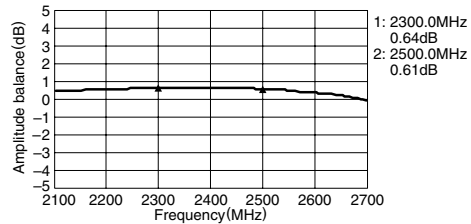
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

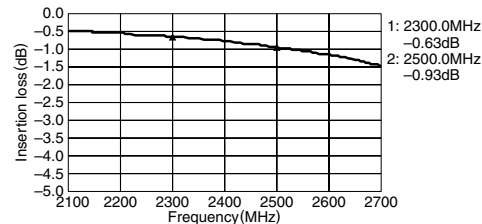
RETURN LOSS



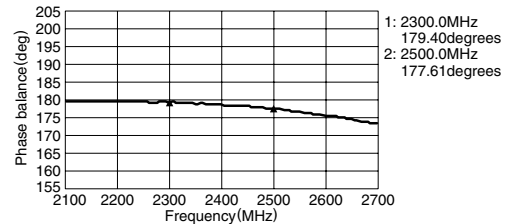
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

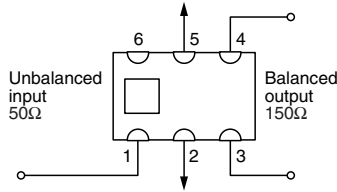
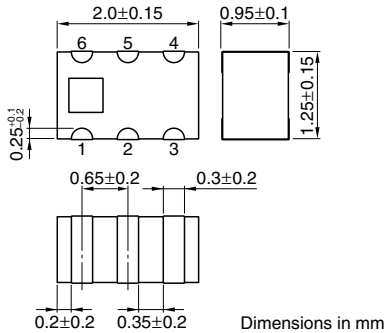


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1518A3 For DCS-PCS/Tx-Rx

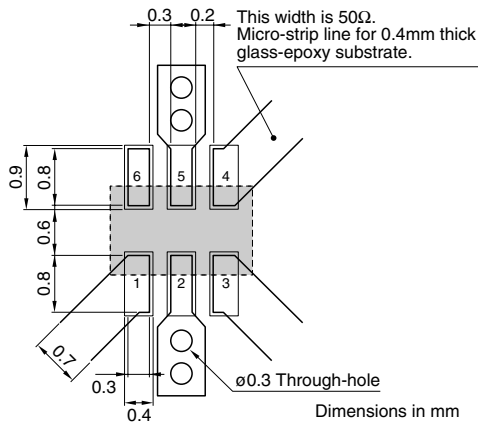
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



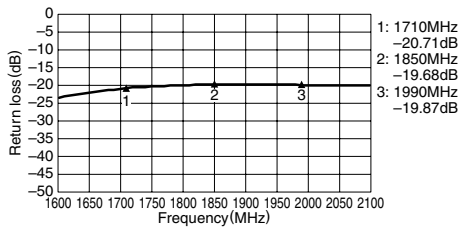
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 1710 to 1990MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

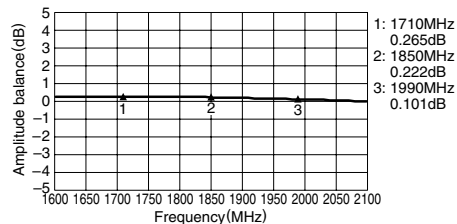
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

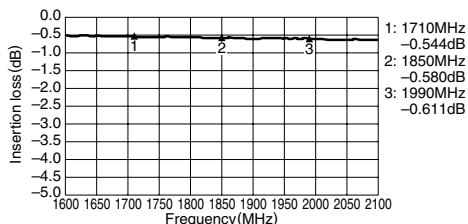
RETURN LOSS



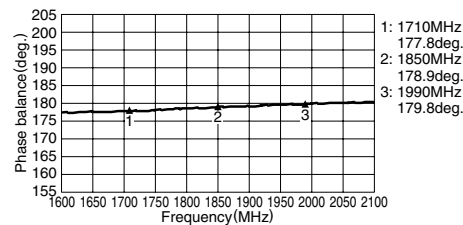
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

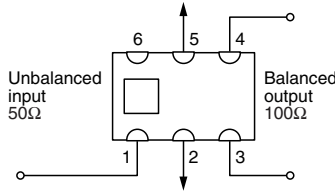
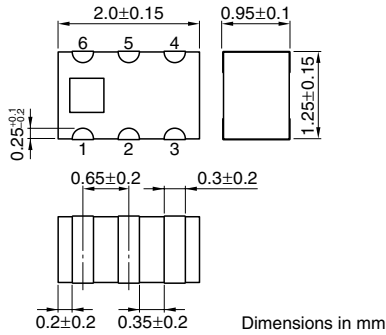


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1520 For Bluetooth&IEEE802.11b/g

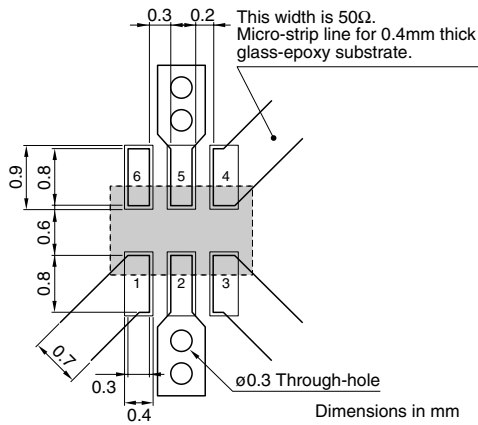
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



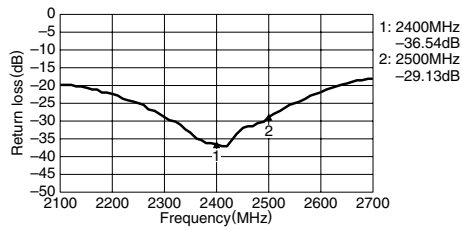
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 2400 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

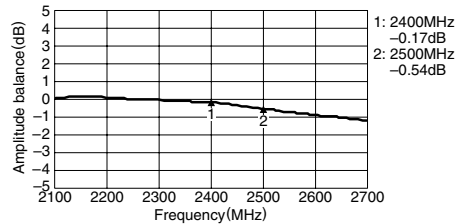
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

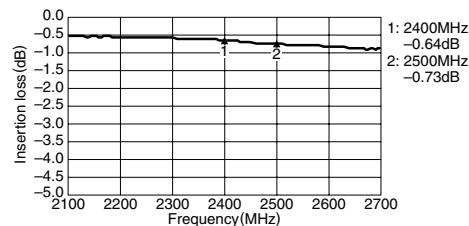
RETURN LOSS



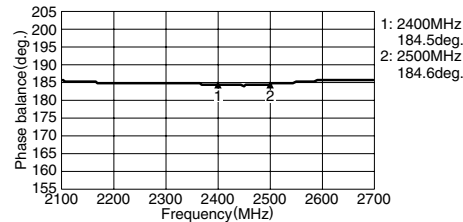
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

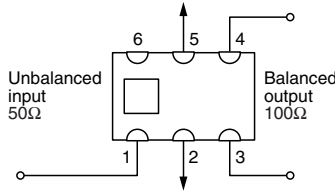
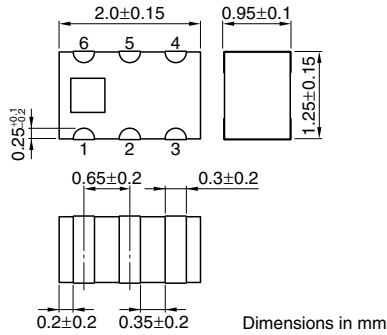


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1520A2 For Bluetooth&IEEE802.11b/g

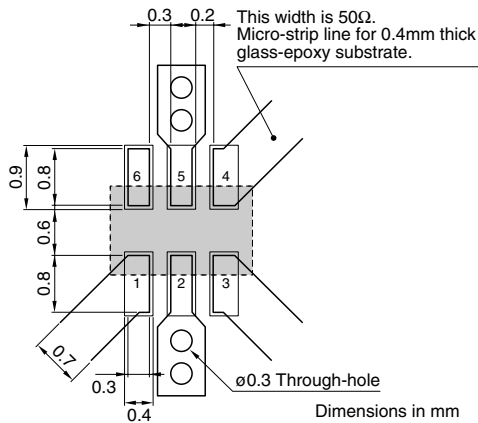
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



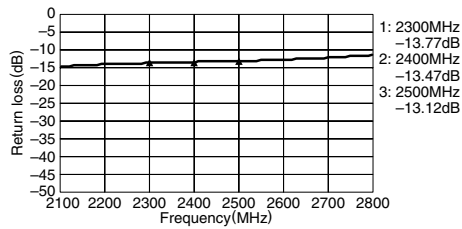
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 2300 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

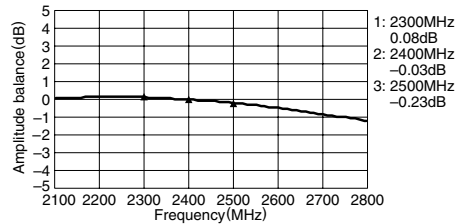
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

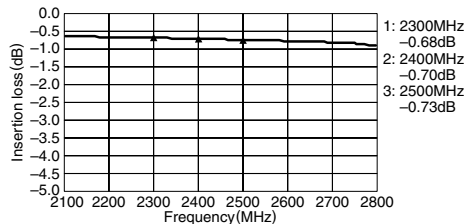
RETURN LOSS



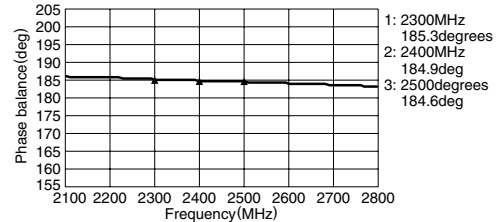
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

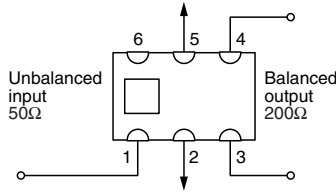
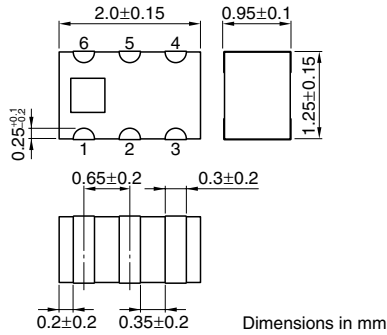


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1521 For Bluetooth&IEEE802.11b/g

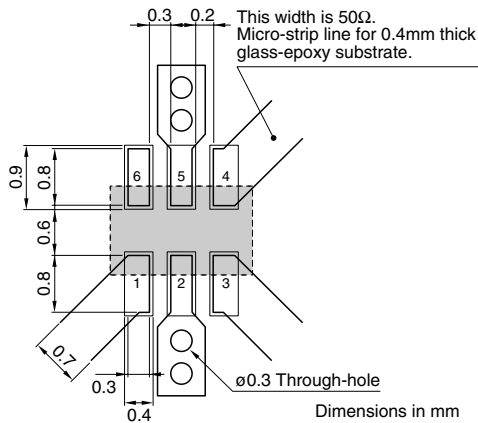
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



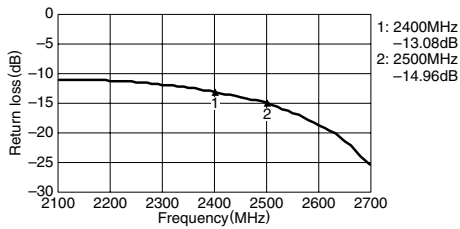
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 2400 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

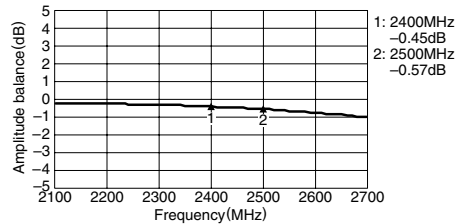
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

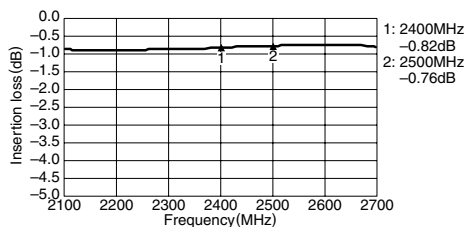
RETURN LOSS



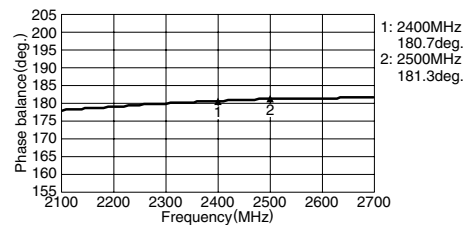
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

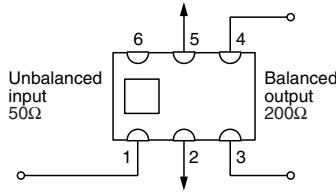
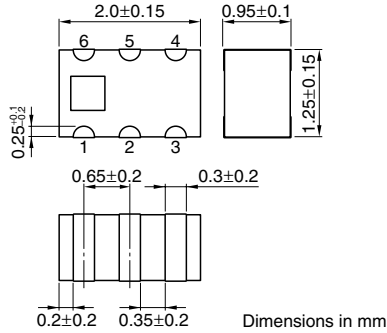


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1521A2 For Bluetooth&IEEE802.11b/g

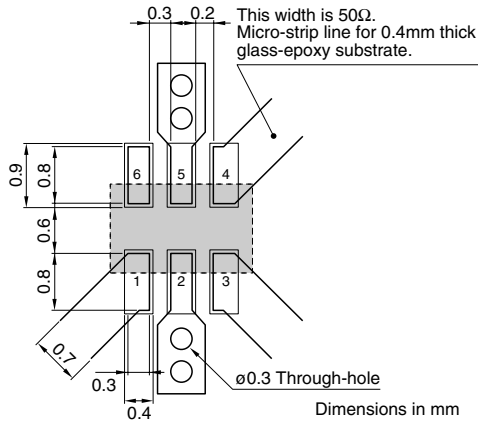
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



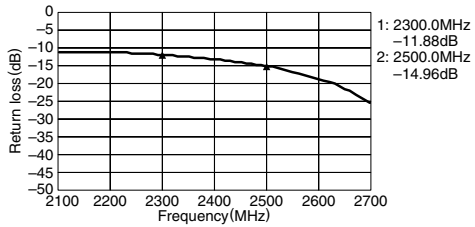
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 2300 to 2500MHz |
| Unbalanced port return loss | 9.5dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.1dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

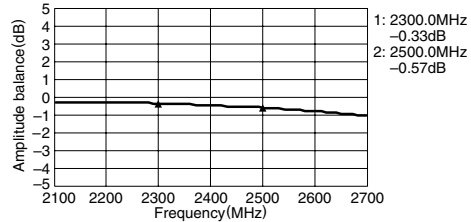
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

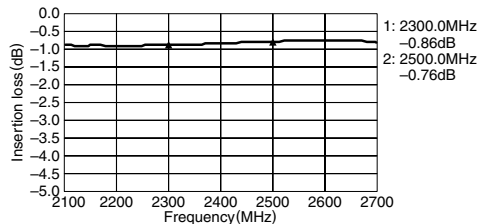
RETURN LOSS



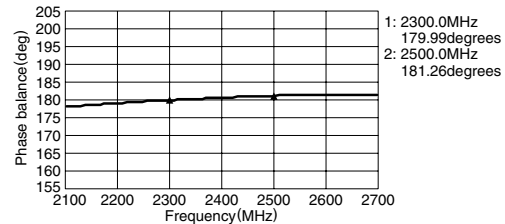
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

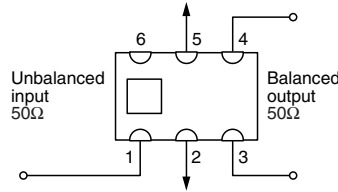
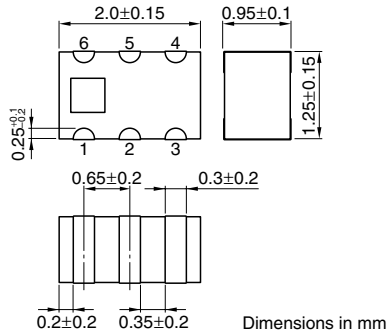


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1522A7 For AGSM/Tx-Rx

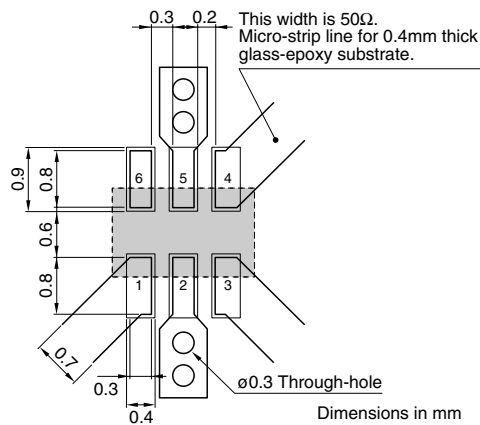
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



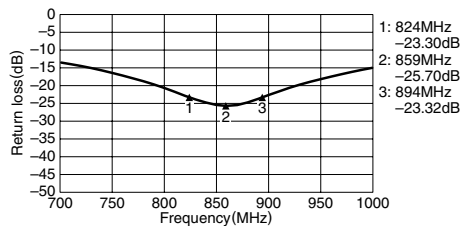
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50Ω |
| Frequency range | 824 to 894MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.4dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

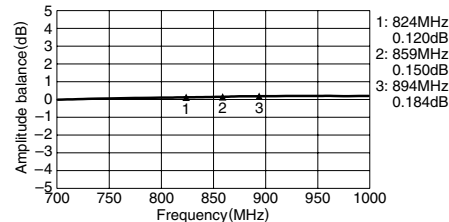
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

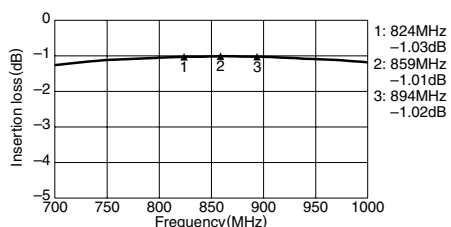
RETURN LOSS



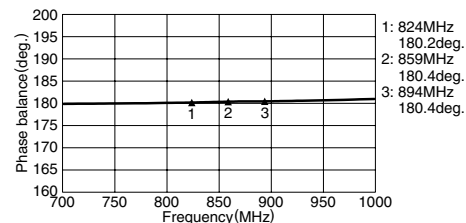
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

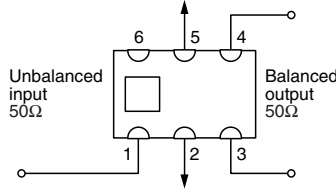
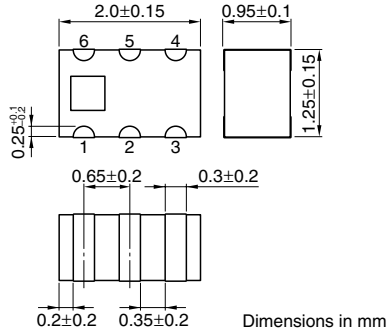


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1522B1 For EGSM/Tx-Rx

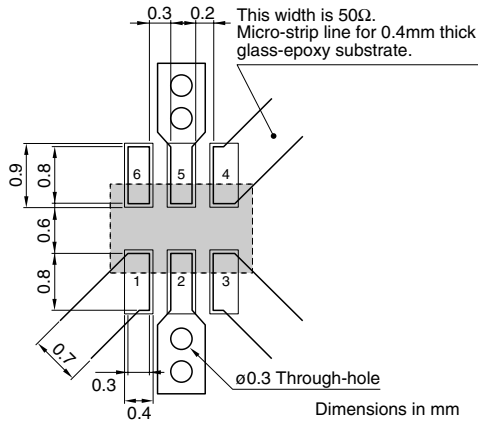
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



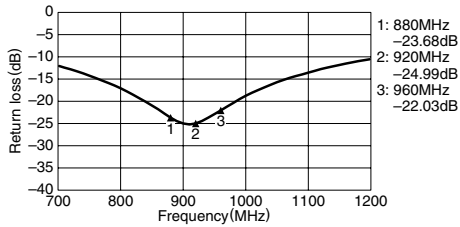
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50Ω |
| Frequency range | 880 to 960MHz |
| Unbalanced port return loss | 12dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.3dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

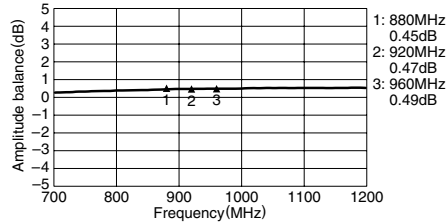
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

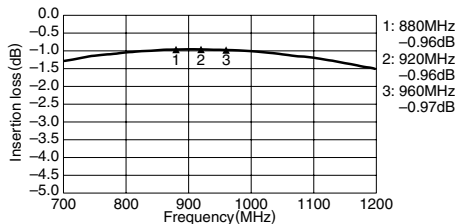
RETURN LOSS



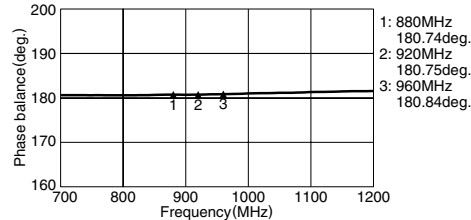
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

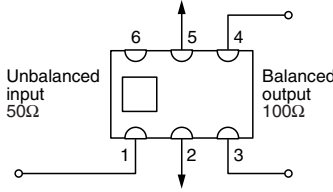
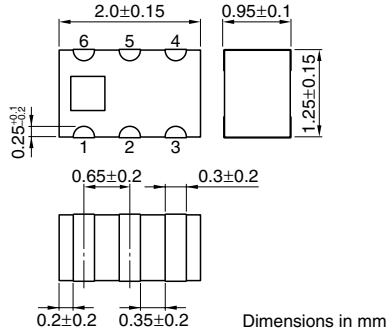


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1523B3 For AGSM/Tx-Rx

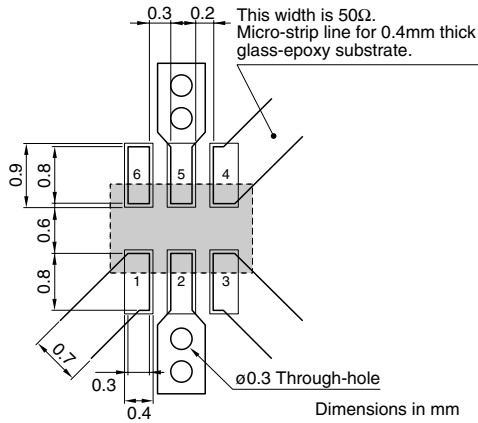
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



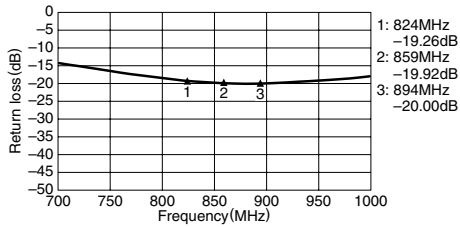
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 824 to 894MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

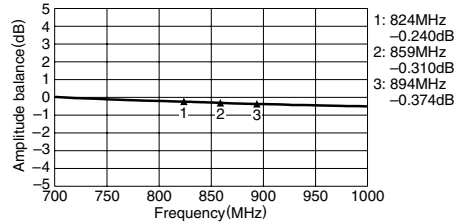
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

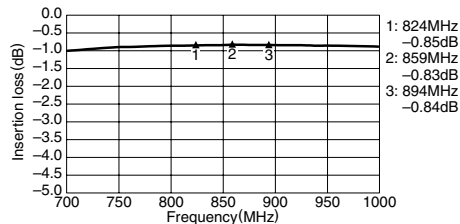
RETURN LOSS



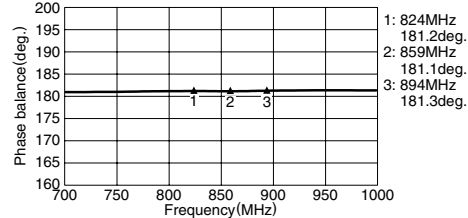
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

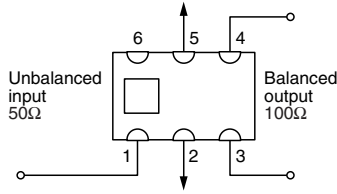
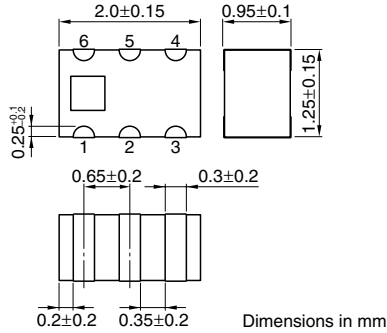


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1523C1 For EGSM/Tx-Rx

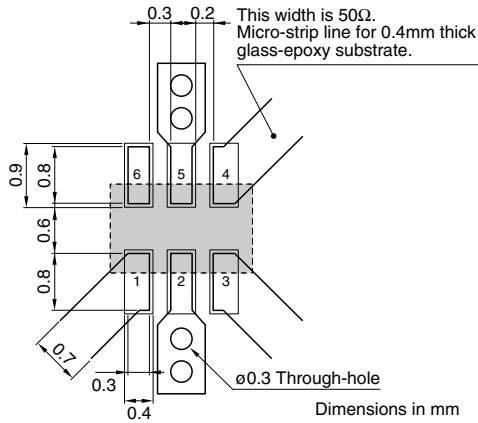
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



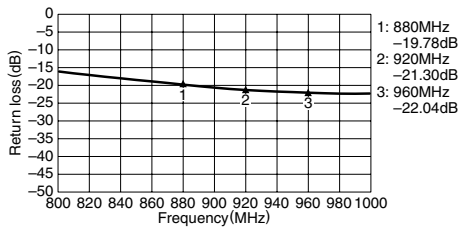
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 880 to 960MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.1dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

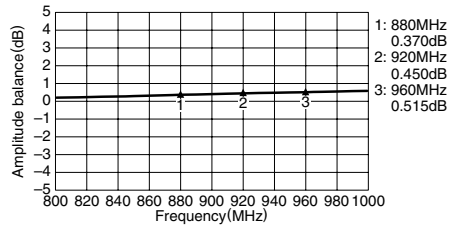
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

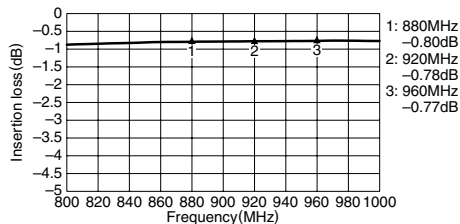
RETURN LOSS



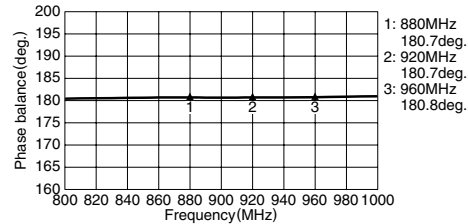
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

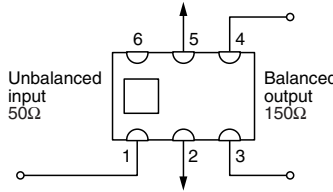
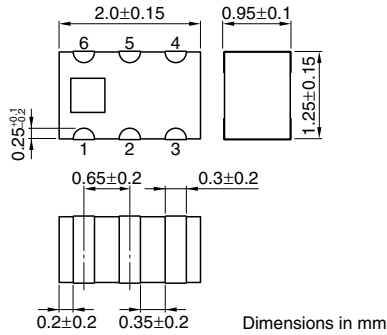


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1524B1 For EGSM/Tx-Rx

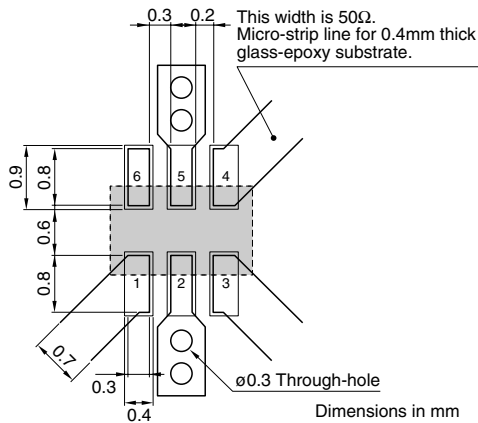
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



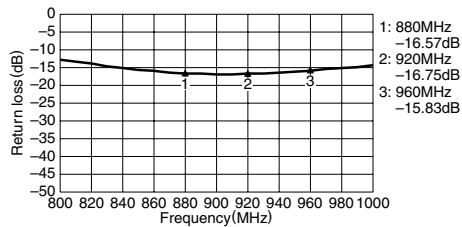
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 880 to 960MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

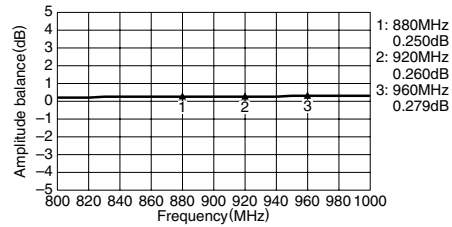
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

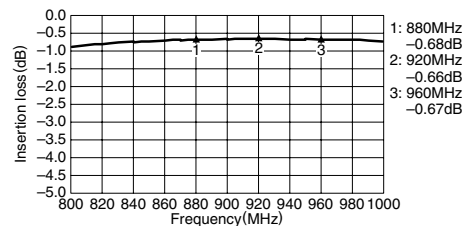
RETURN LOSS



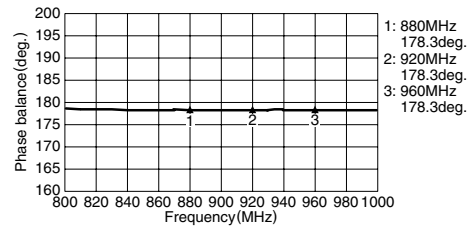
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

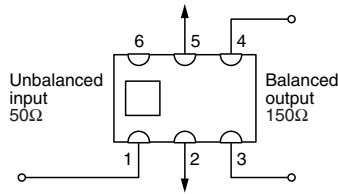
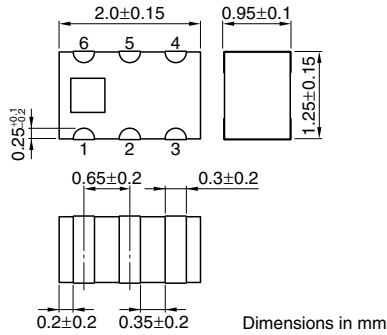


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1524B4 For AGSM/Tx-Rx

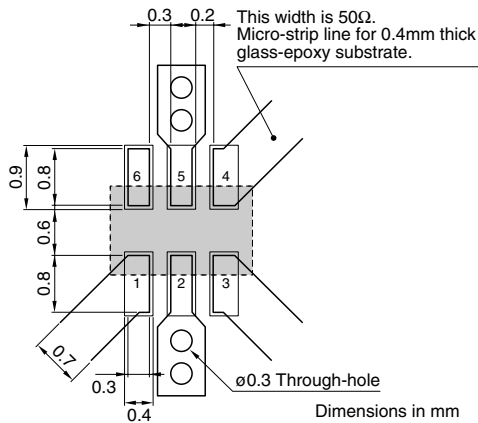
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



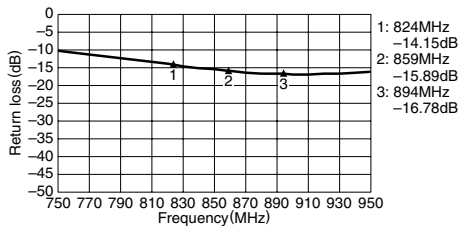
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|------------------------|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 824 to 894MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C |
| | Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

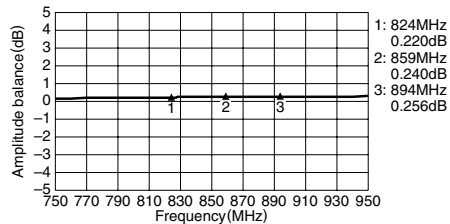
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

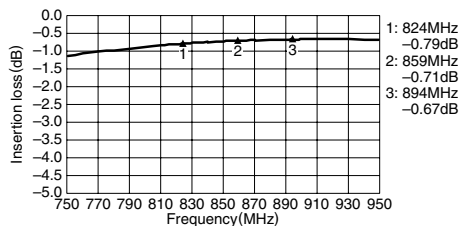
RETURN LOSS



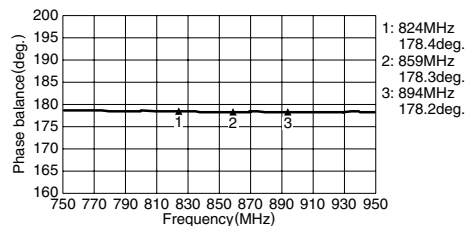
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

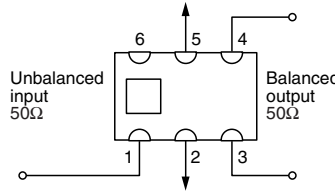
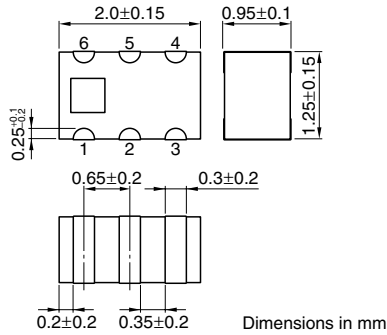


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1525 For DCS-PCS/Tx-Rx

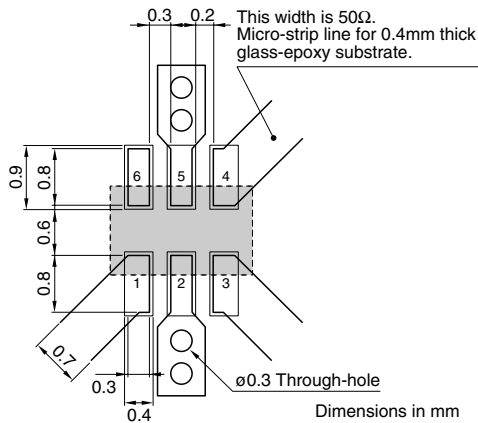
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



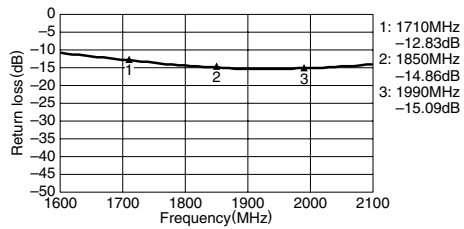
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50Ω |
| Frequency range | 1710 to 1990MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

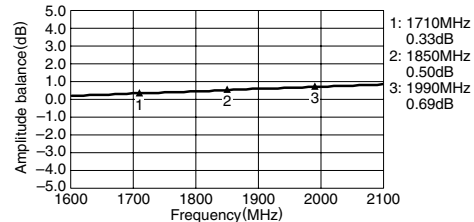
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

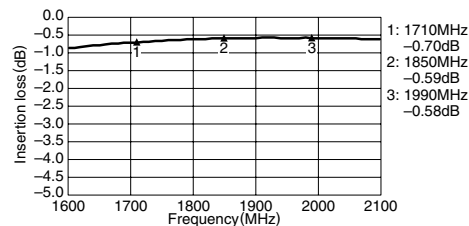
RETURN LOSS



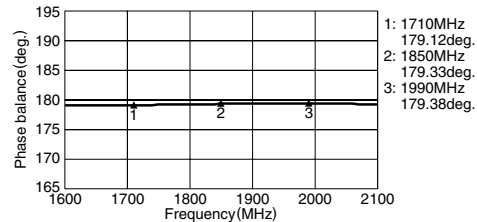
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

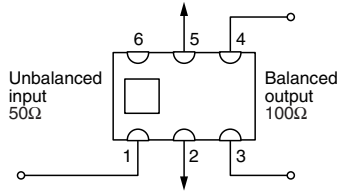
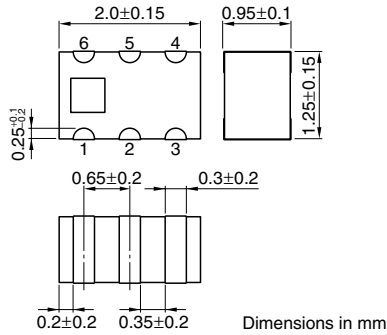


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1526 For DCS-PCS/Tx-Rx

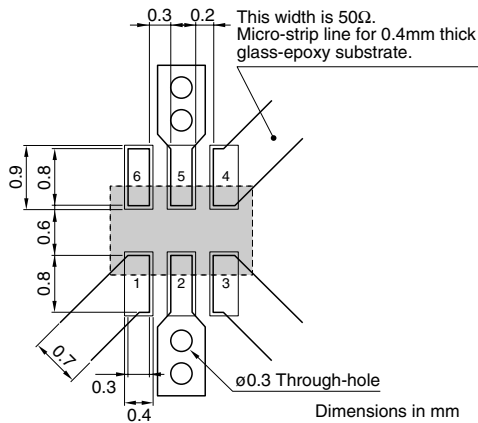
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



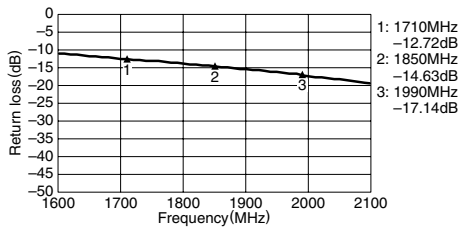
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 1710 to 1990MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±9deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 0.8dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

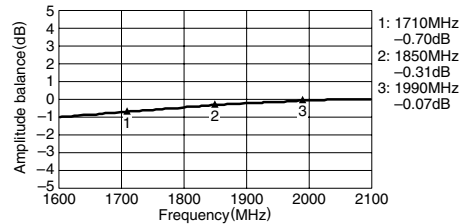
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

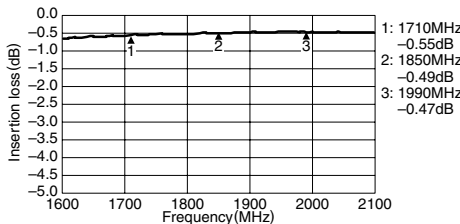
RETURN LOSS



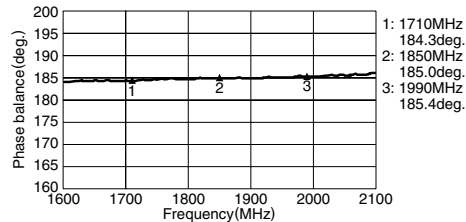
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

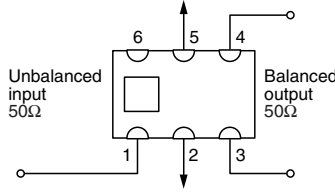
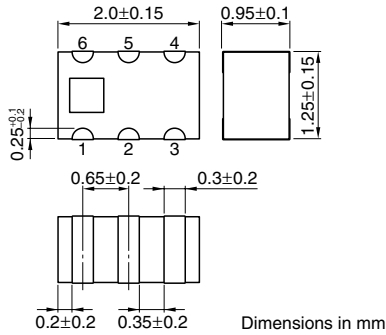


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1533 For W-CDMA/Tx-Rx

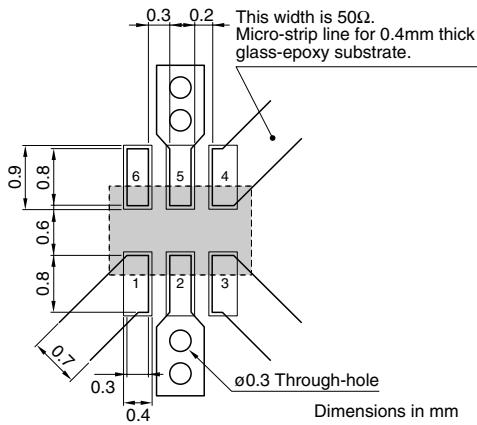
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



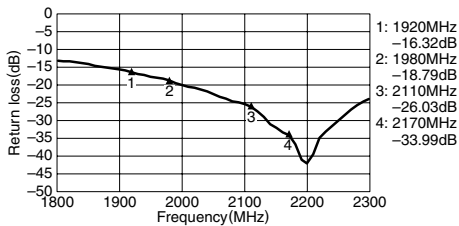
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50Ω |
| Frequency range | 1920 to 1980, 2110 to 2170MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 0.8dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

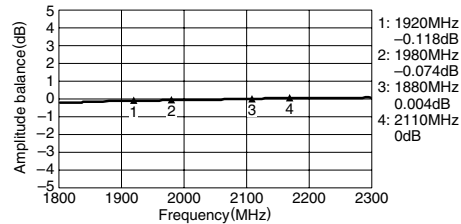
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

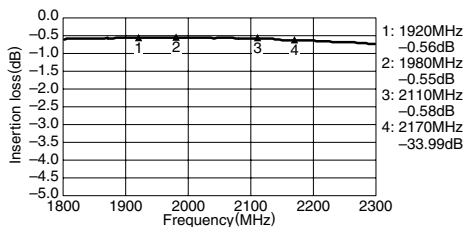
RETURN LOSS



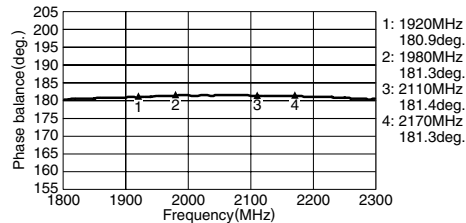
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

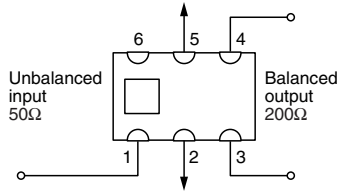
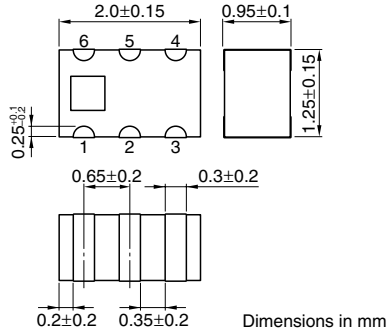


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1534 For W-CDMA/Tx-Rx

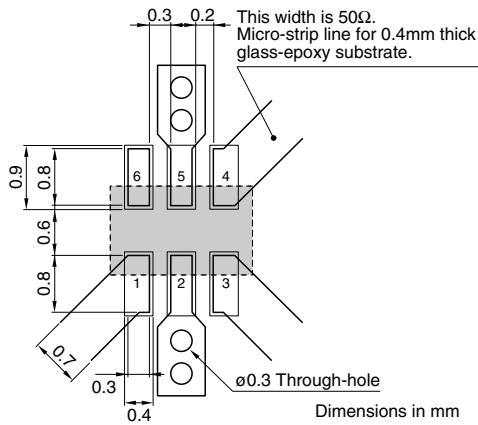
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



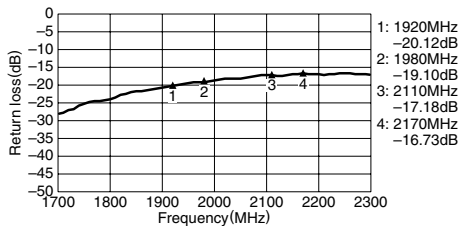
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 1920 to 1980, 2110 to 2170MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

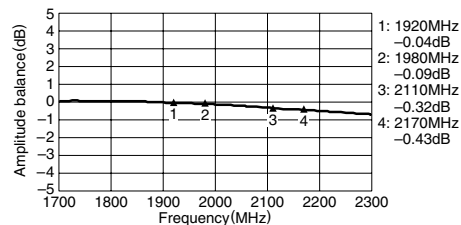
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

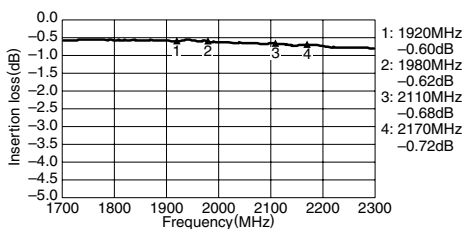
RETURN LOSS



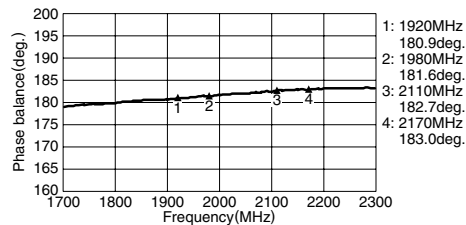
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

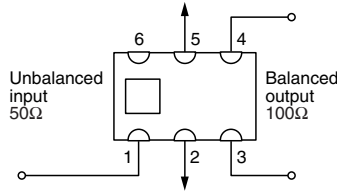
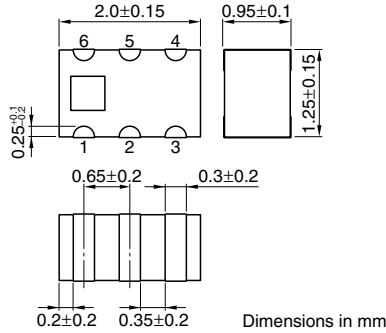


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1536B1 For 3.7GHz

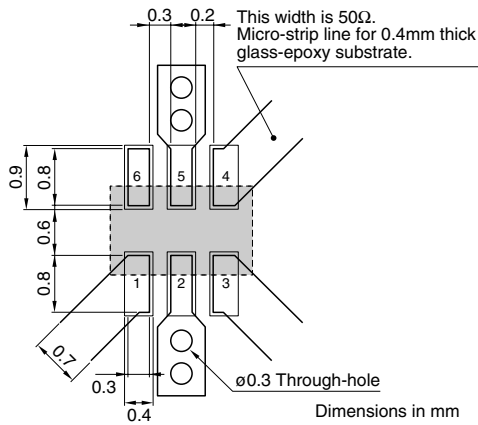
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



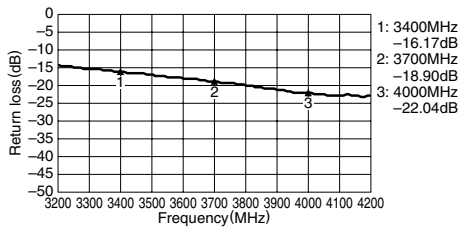
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 3400 to 4000MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±20deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

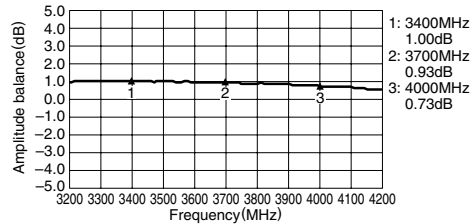
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

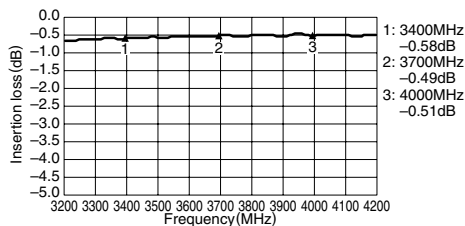
RETURN LOSS



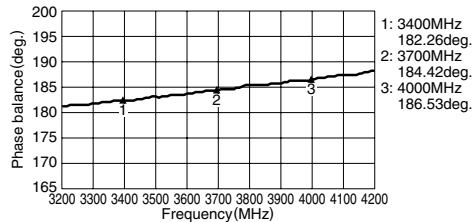
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

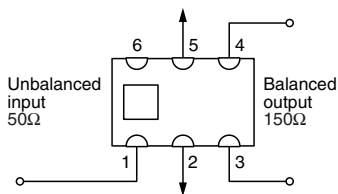
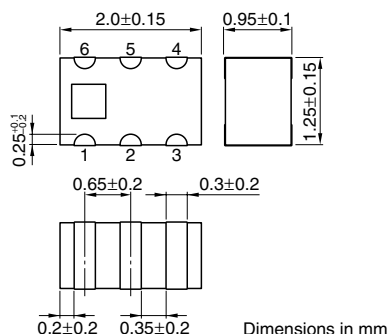


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1537 For W-CDMA/Tx-Rx

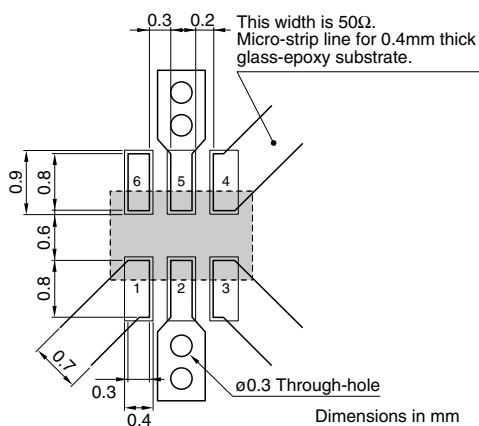
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



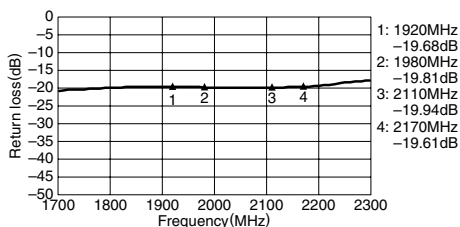
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 1920 to 1980, 2110 to 2170MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating: -40 to +85°C Storage: -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

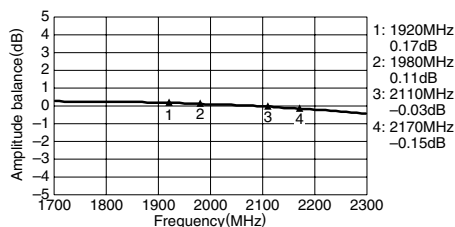
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

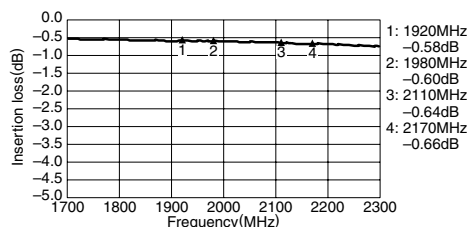
RETURN LOSS



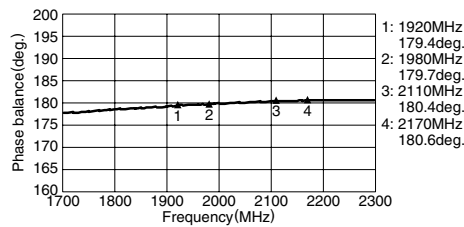
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

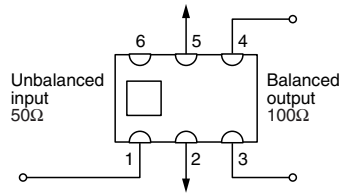
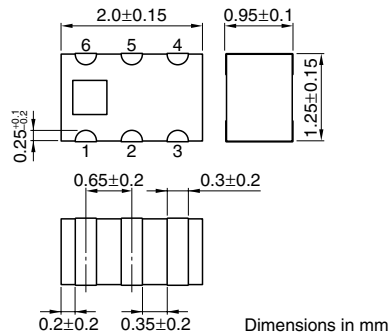


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1538 For DCS/Local

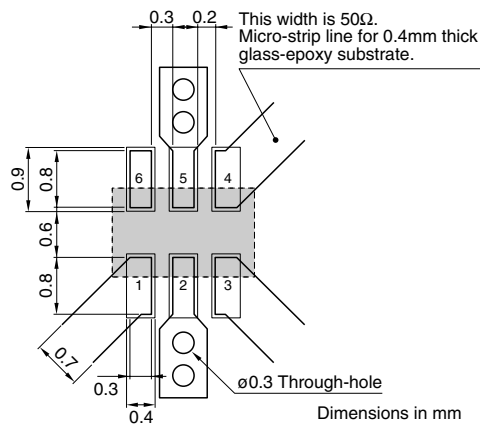
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



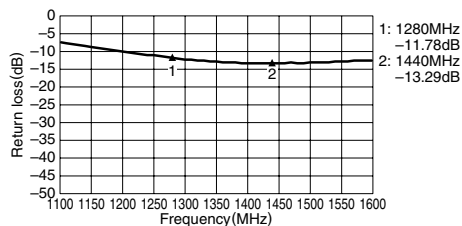
ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-----------------|--------------|
| Unbalanced impedance | 50Ω | |
| Balanced impedance | 100Ω | |
| Frequency range | 1280 to 1440MHz | |
| Unbalanced port return loss | 10dB min. | |
| Phase impedance at balanced port | 180±10deg. | |
| Amplitude impedance at balanced port | 0±2.0dB | |
| Insertion loss | 25°C | 0.9dB max. |
| | -40 to +85°C | 1.0dB max. |
| Temperature range | Operating | -40 to +85°C |
| | Storage | -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel | |

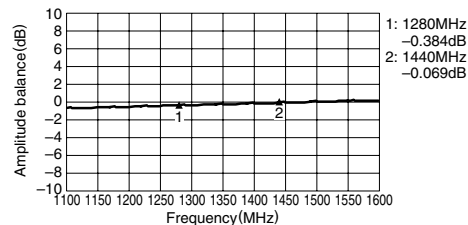
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

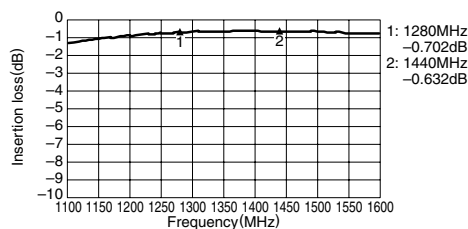
RETURN LOSS



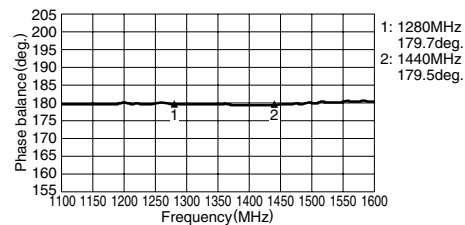
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

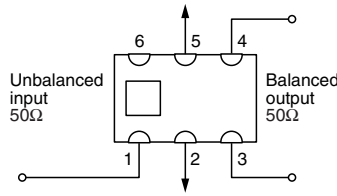
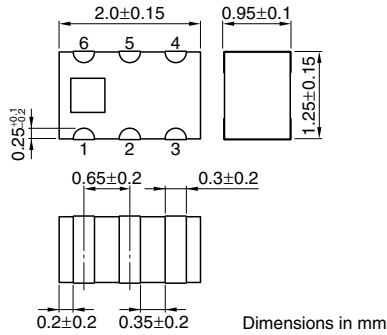


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1541 For Bluetooth&IEEE802.11b/g

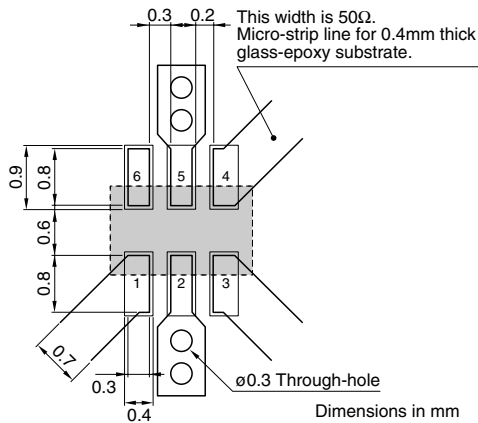
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



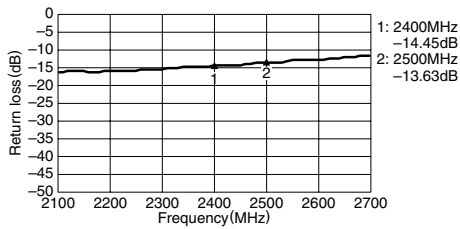
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|------------------------|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 75Ω |
| Frequency range | 2400 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C |
| | Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

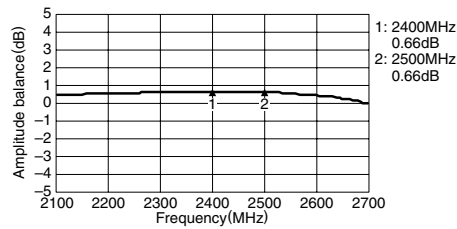
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 75Ω

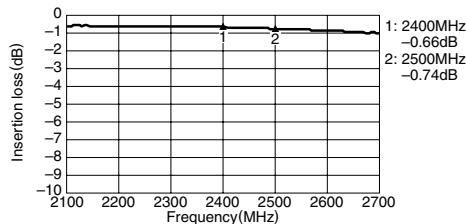
RETURN LOSS



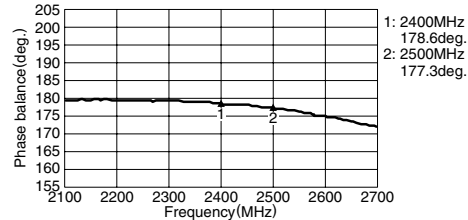
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

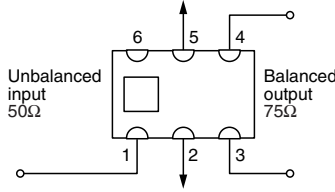
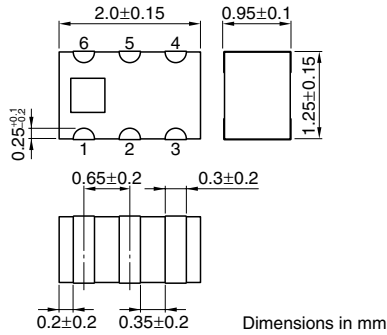


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1541E1 For Bluetooth

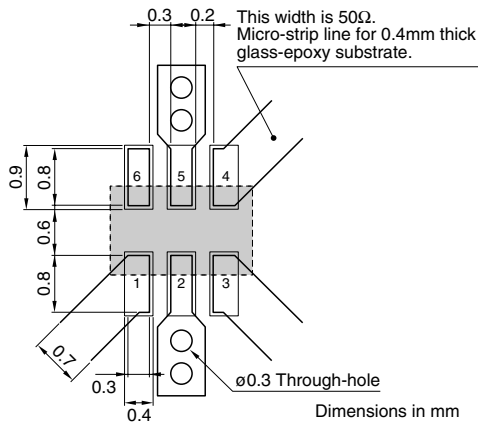
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



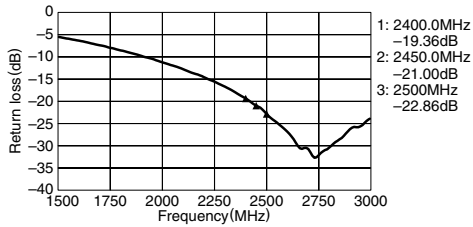
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 75Ω |
| Frequency range | 2300 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.5dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

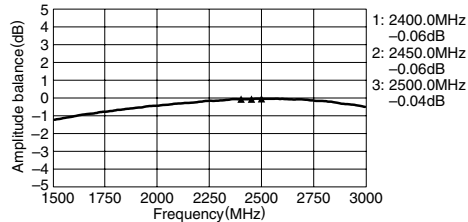
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 75Ω

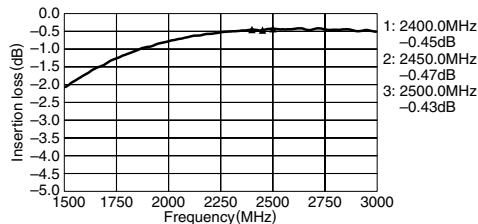
RETURN LOSS



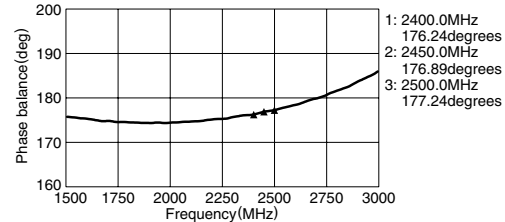
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

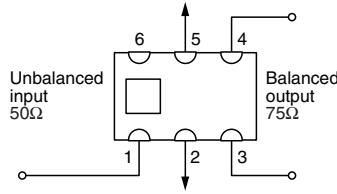
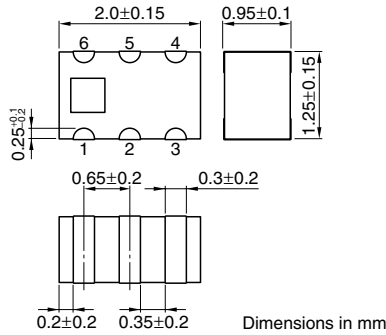


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1541E2 For Bluetooth&IEEE802.11b/g

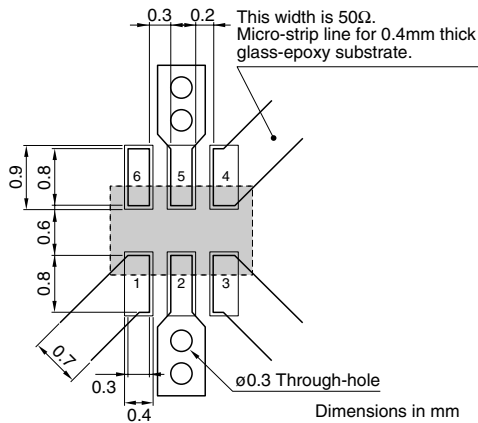
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



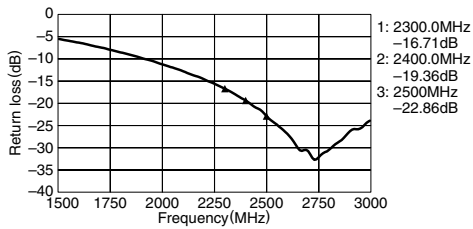
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 75Ω |
| Frequency range | 2300 to 2500MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.5dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

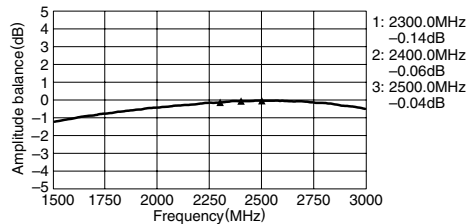
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 75Ω

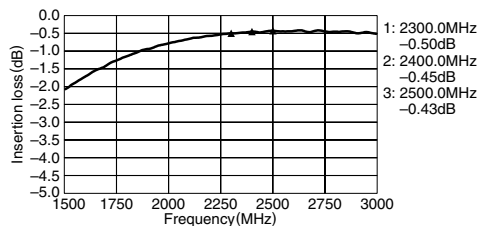
RETURN LOSS



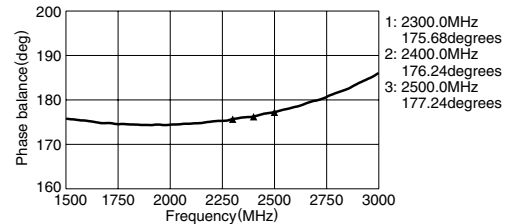
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

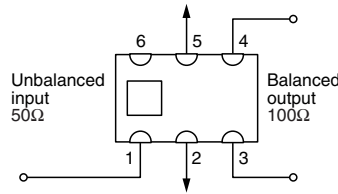
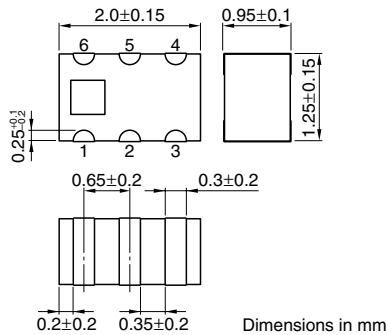


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1544 For W-LAN

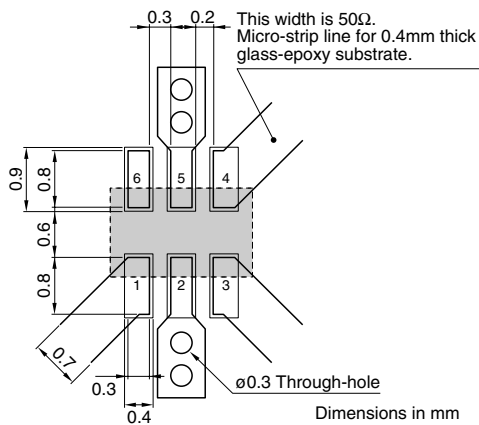
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



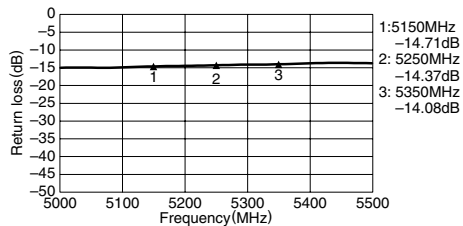
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 5150 to 5350MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±20deg. |
| Amplitude impedance at balanced port | 0±1.5dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

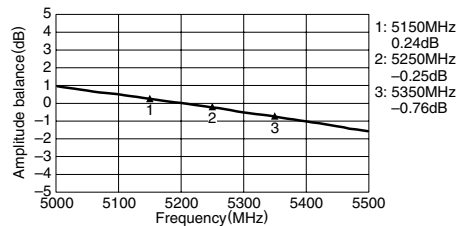
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

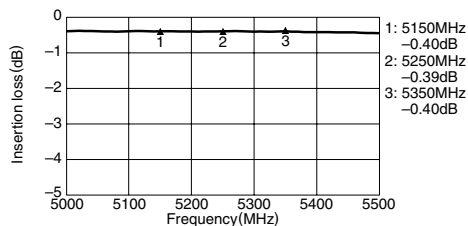
RETURN LOSS



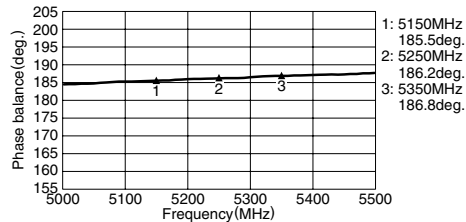
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

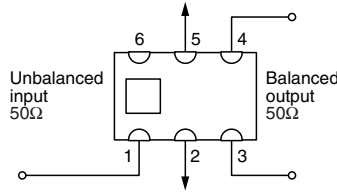
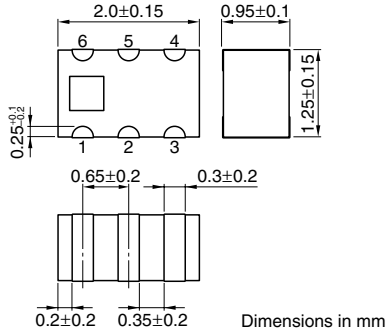


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1545 For 3.7GHz

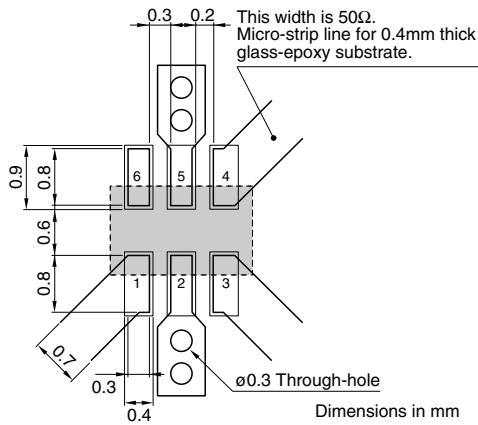
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



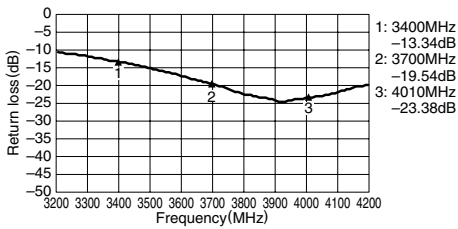
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 50Ω |
| Frequency range | 3400 to 4010MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

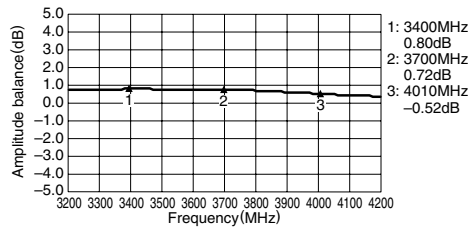
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

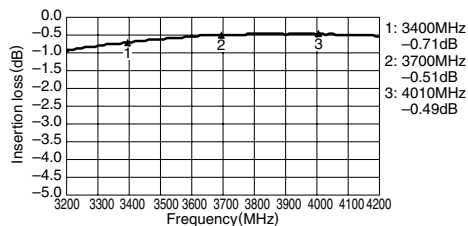
RETURN LOSS



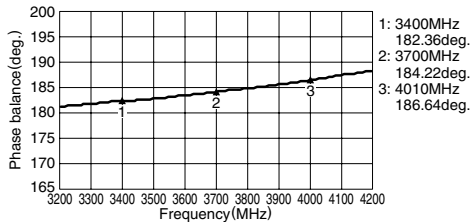
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

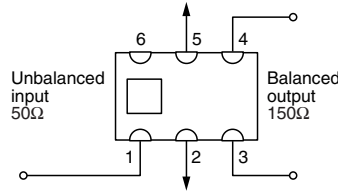
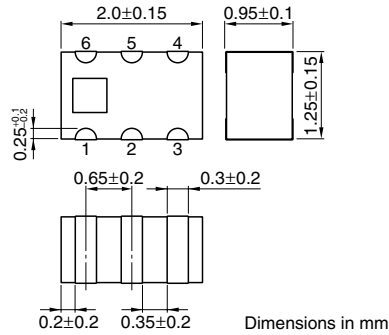


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1547 For 3.7GHz

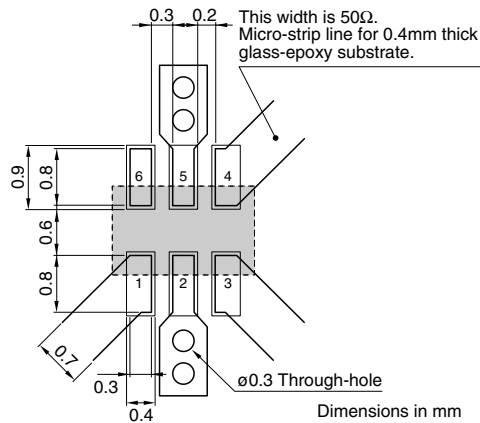
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



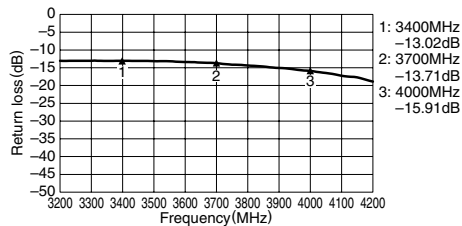
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 150Ω |
| Frequency range | 3400 to 4000MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±20deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

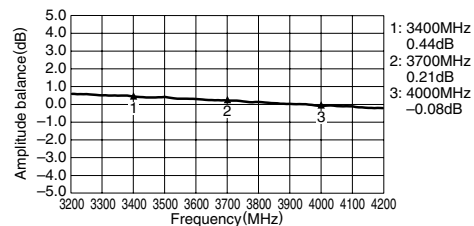
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

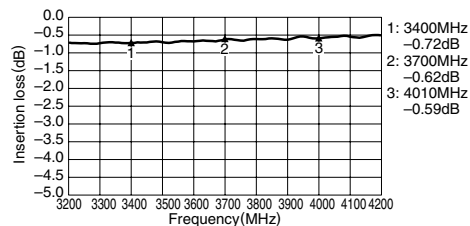
RETURN LOSS



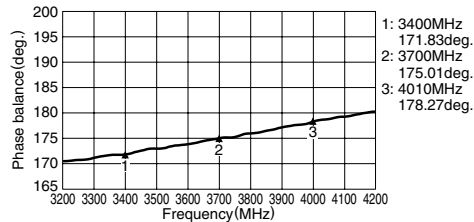
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

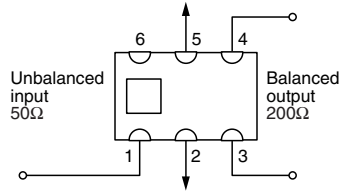
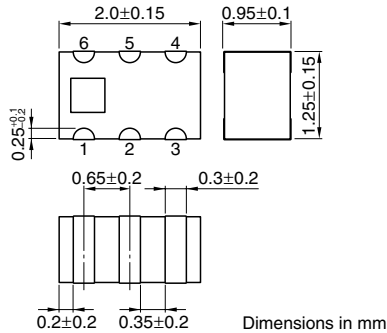


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1548A2 For 3.7GHz

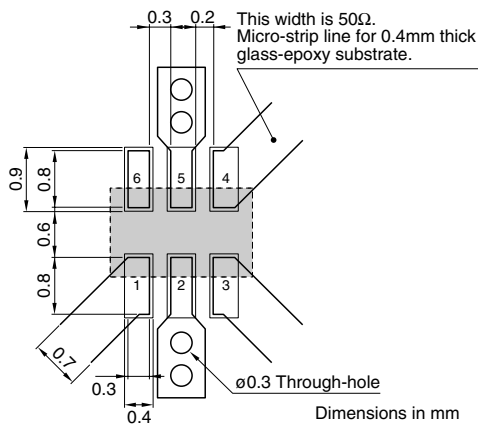
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



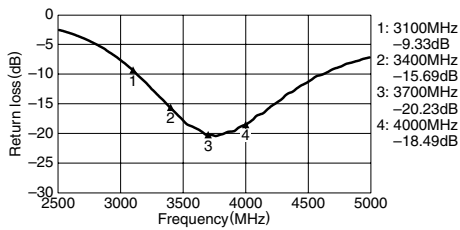
ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-----------------|-----------------------|
| Unbalanced impedance | 50Ω | 50Ω |
| Balanced impedance | 200Ω | 200Ω |
| Frequency range | 3100 to 3400MHz | 3400 to 4000MHz |
| Unbalanced port return loss | 6dB min. | 9dB min. |
| Phase impedance at balanced port | 177±20deg. | 178±20deg. at 3400MHz |
| | | 180±20deg. at 3700MHz |
| | | 185±20deg. at 4000MHz |
| Amplitude impedance at balanced port | 1±2.0dB | 1±2.0dB |
| Insertion loss | 1.5db max. | 1.2dB max. |
| Temperature range | Operating | -40 to +85°C |
| | Storage | -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel | |

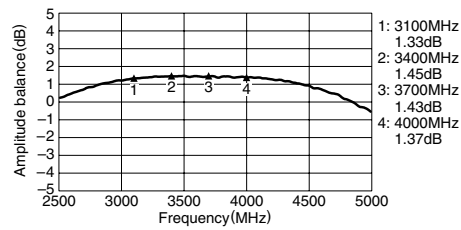
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

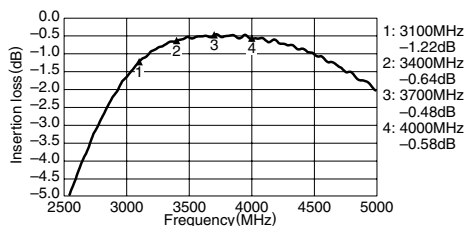
RETURN LOSS



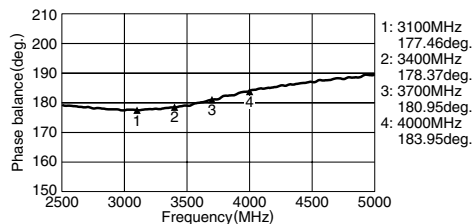
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

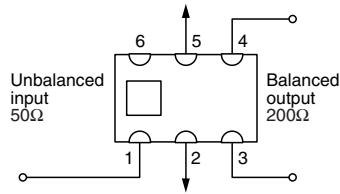
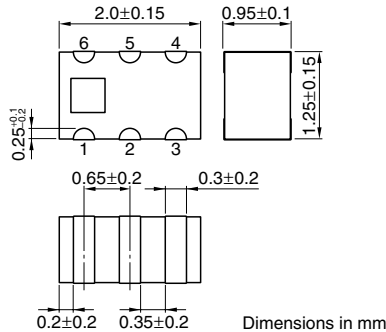


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1548C2 For 3.7GHz

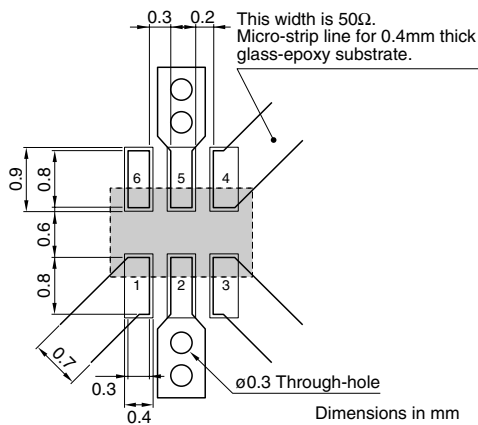
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



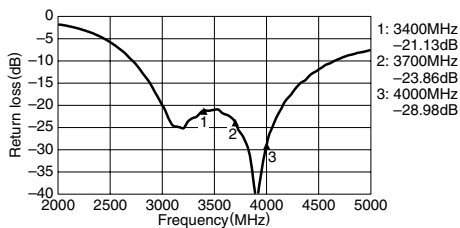
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 3400 to 4000MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±20deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

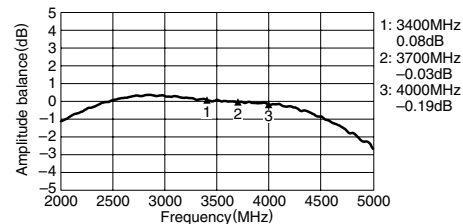
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

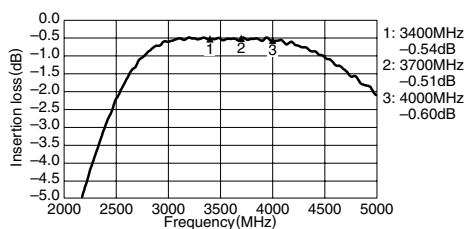
RETURN LOSS



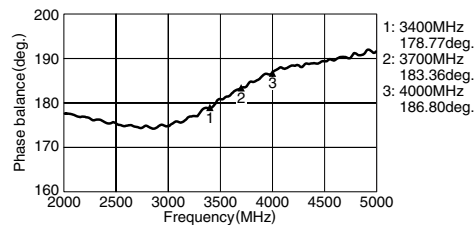
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

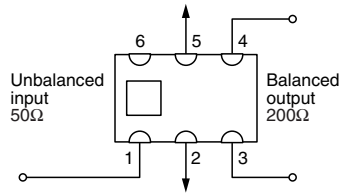
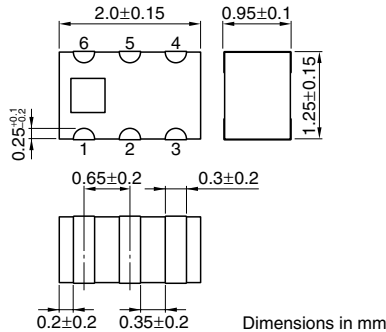


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1548E1 For 3.7GHz

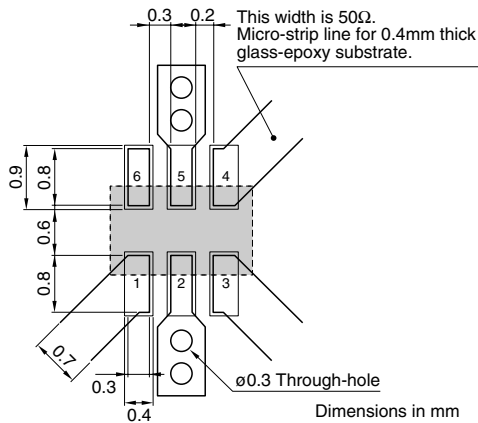
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|-----------------|
| 1 | Unbalanced Port |
| 2 | GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



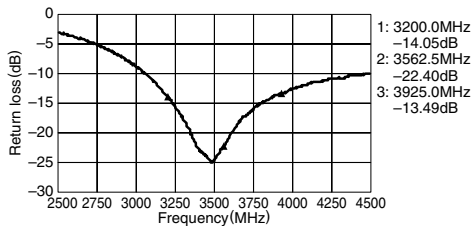
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 3200 to 3925MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.2dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

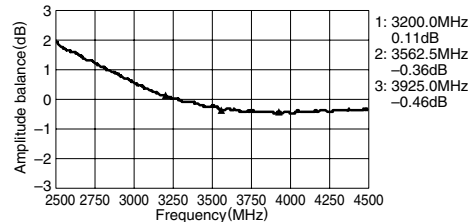
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

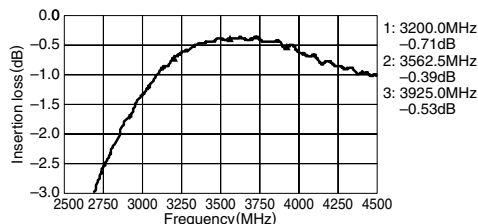
RETURN LOSS



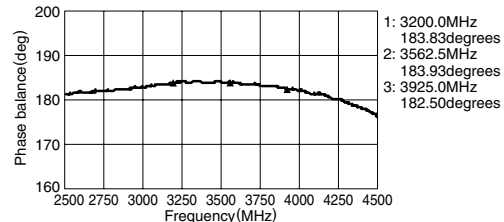
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

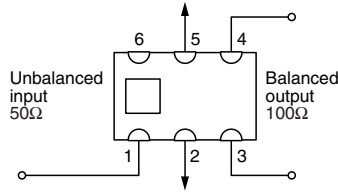
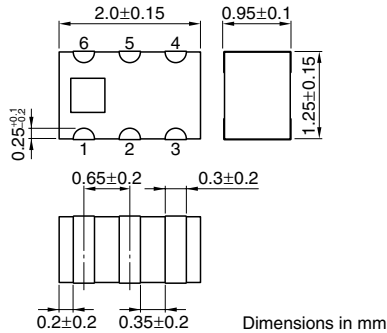


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1562B For W-LAN

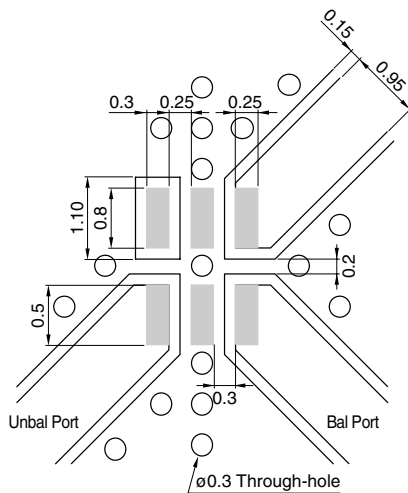
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



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

Dimensions in mm

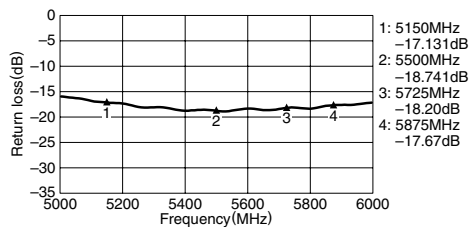
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 5150 to 5875MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0 max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

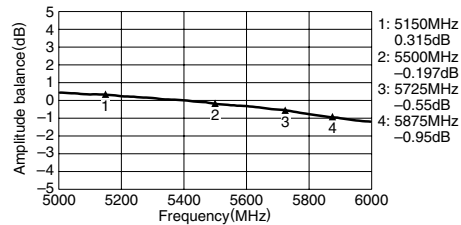
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

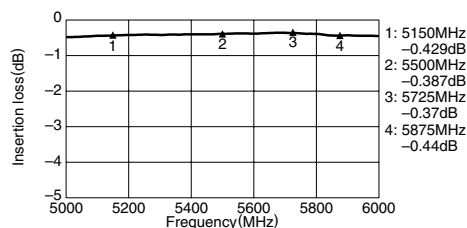
RETURN LOSS



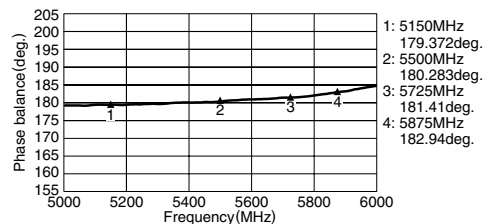
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

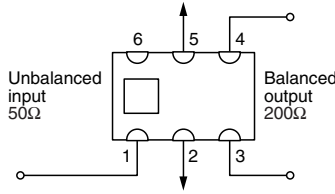
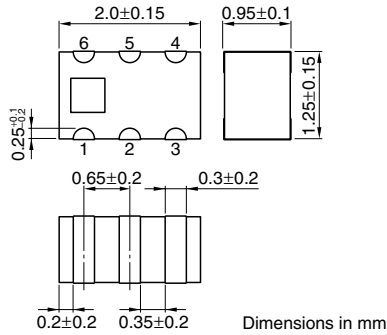


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1564A4 For AGSM/Tx-Rx

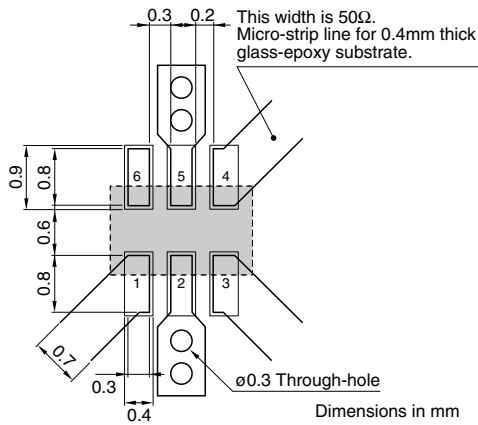
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



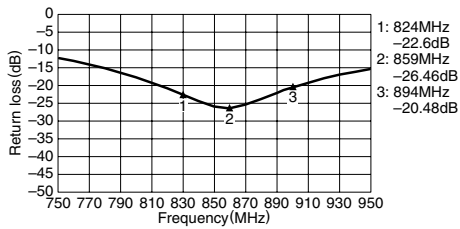
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 824 to 894MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.0dB |
| Insertion loss | 1.0dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

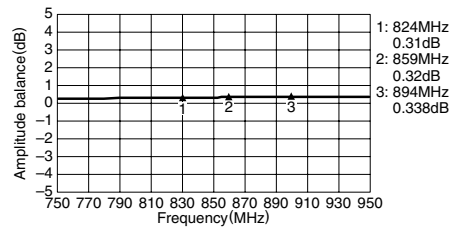
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

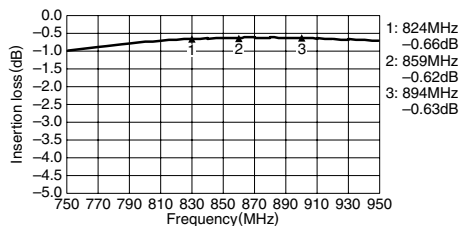
RETURN LOSS



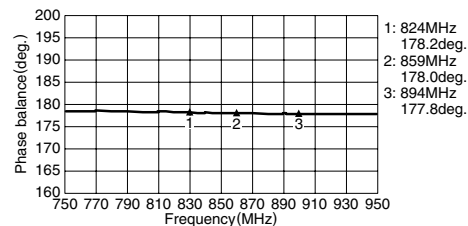
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

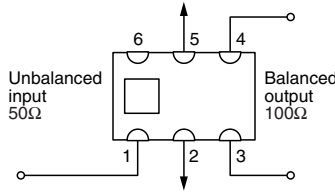
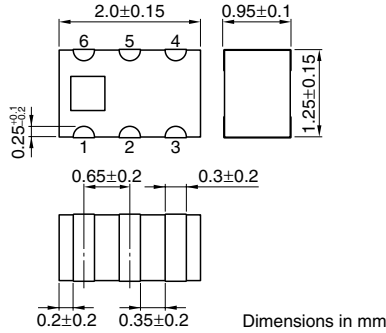


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1570B1 For W-LAN

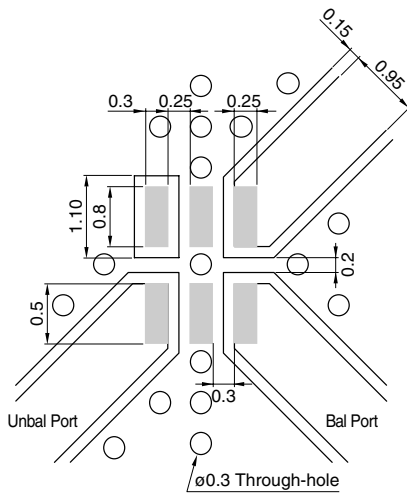
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



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

Dimensions in mm

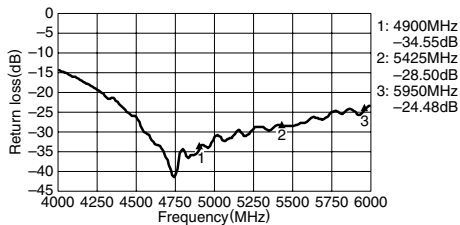
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 4900 to 5950MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 1.0 max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

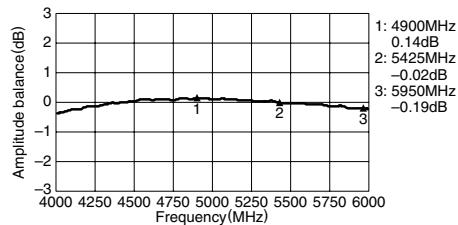
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

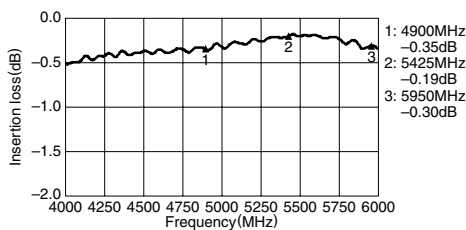
RETURN LOSS



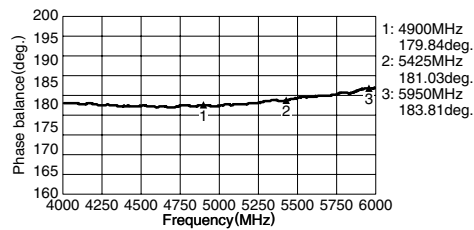
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

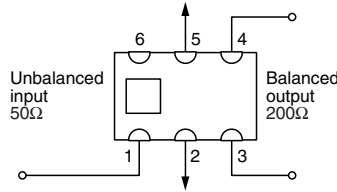
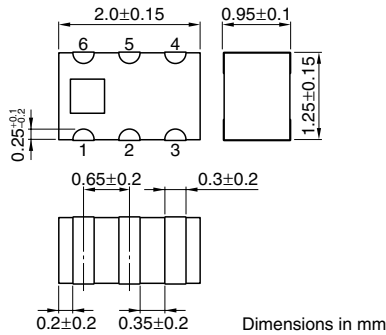


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1582A1 For 2218 to 2458MHz

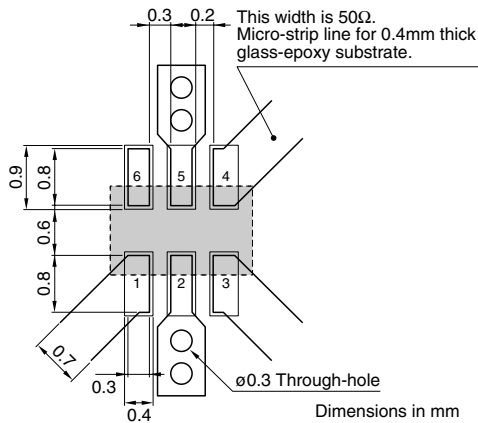
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



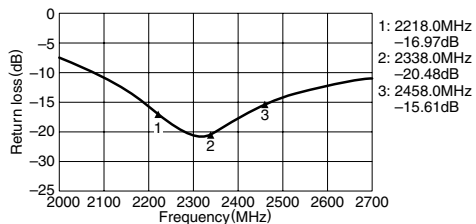
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 200Ω |
| Frequency range | 2218 to 2458MHz |
| Unbalanced port return loss | 10dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±2.0dB |
| Insertion loss | 0.9dB max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

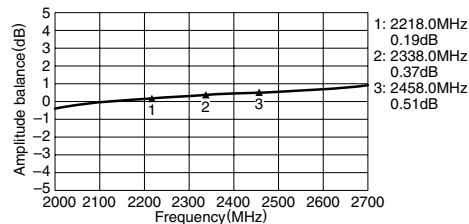
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

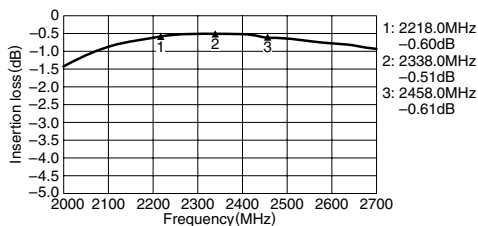
RETURN LOSS



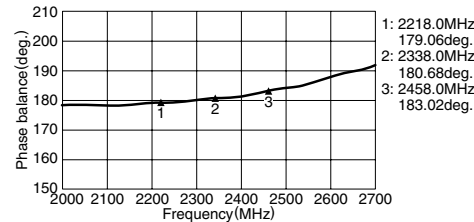
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

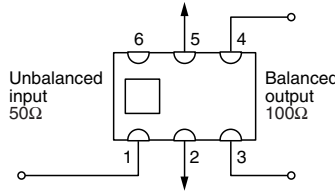
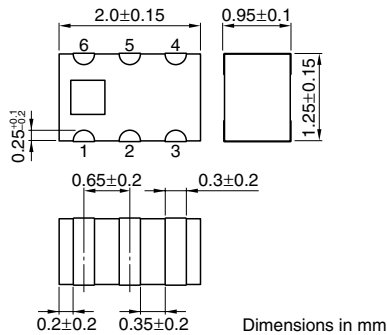


• All specifications are subject to change without notice.

Multilayer Baluns, HHM Series

HHM1583B1 For UWB

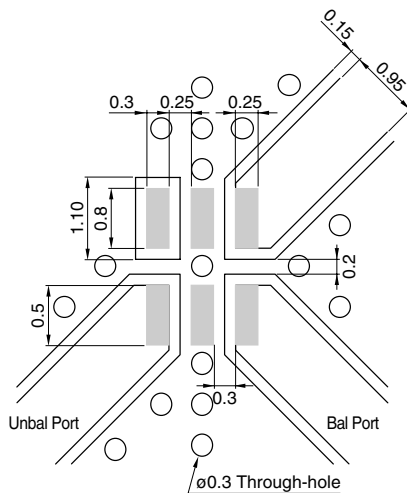
SHAPES AND DIMENSIONS/CIRCUIT



TERMINAL FUNCTIONS

| | |
|---|------------------------|
| 1 | Unbalanced Port |
| 2 | GND or DC feed+ RF GND |
| 3 | Balanced Port |
| 4 | Balanced Port |
| 5 | GND |
| 6 | N.C. |

RECOMMENDED PCB PATTERN



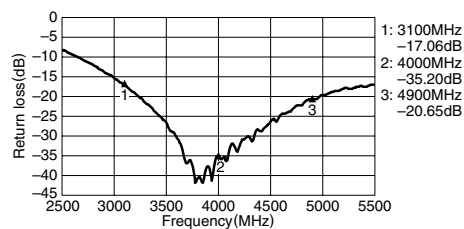
ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|--|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 3100 to 4900MHz |
| Unbalanced port return loss | 10.0dB min. |
| Phase impedance at balanced port | 180±10deg. |
| Amplitude impedance at balanced port | 0±1.5dB |
| Insertion loss | 1.0 max. |
| Temperature range | Operating -40 to +85°C Storage -40 to +85°C |
| Packaging style and quantities | 2000pieces/reel |

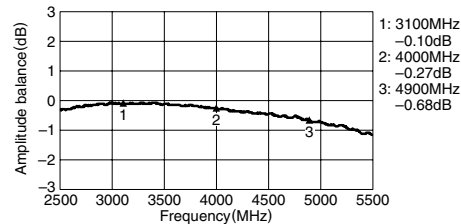
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

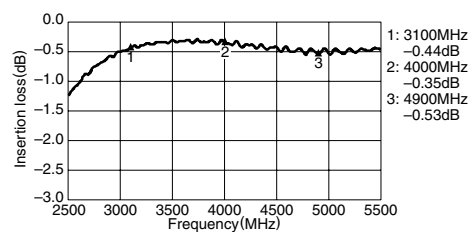
RETURN LOSS



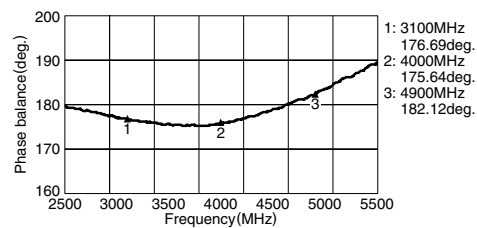
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE



• All specifications are subject to change without notice.