

Multilayer Balun Transformers

For GSM900 Tx & Rx

HHM Series

Type: **HHM1515B2 (2.0×1.25×0.95mm)**
 HHM1522B1 (2.0×1.25×0.95mm)
 HHM1523C1 (2.0×1.25×0.95mm)
 HHM1524B1 (2.0×1.25×0.95mm)

Issue date: December 2010

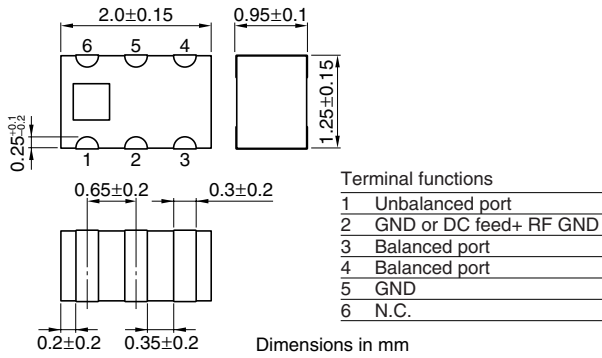
- All specifications are subject to change without notice.
 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.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

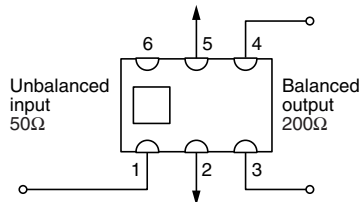
Conformity to RoHS Directive

HHM Series HHM1515B2

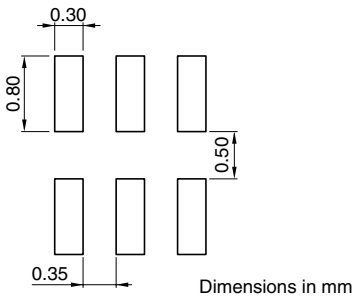
SHAPES AND DIMENSIONS



CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-----------------|--------------|
| Unbalanced impedance | 50Ω | |
| Balanced impedance | 200Ω | |
| Frequency range | 880 to 960MHz | |
| Unbalanced port return loss | 10dB min. | |
| Phase imbalance at balanced port | 180±10deg. | |
| Amplitude imbalance 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 | |

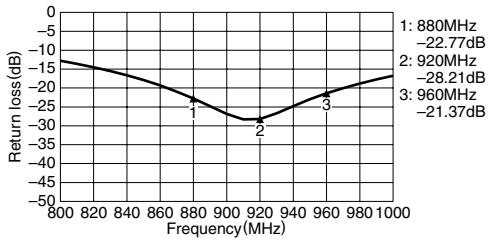
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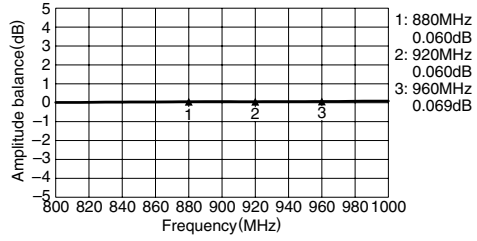
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

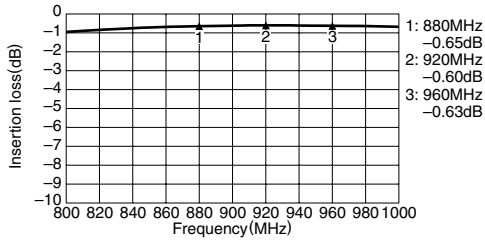
RETURN LOSS



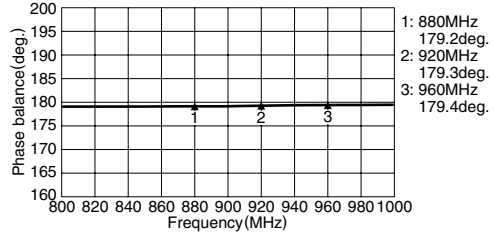
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE



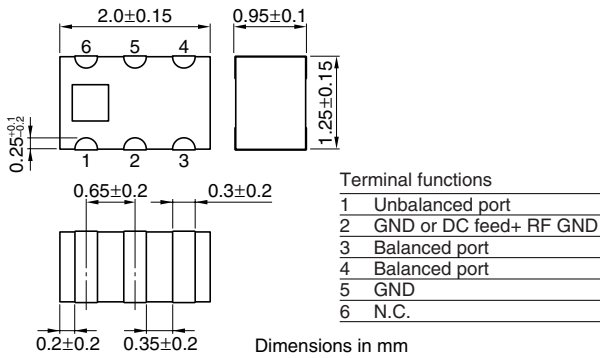
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Multilayer Chip Baluns For EGSM/Tx & Rx

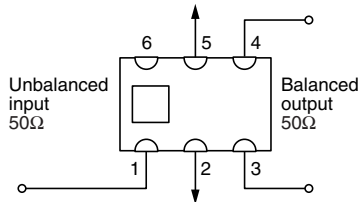
Conformity to RoHS Directive

HHM Series HHM1522B1

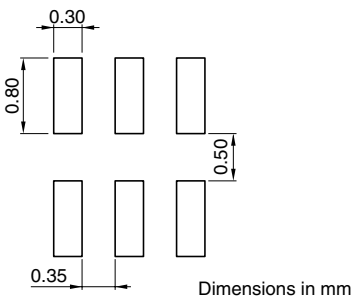
SHAPES AND DIMENSIONS



CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-----------------|--------------|
| Unbalanced impedance | 50Ω | |
| Balanced impedance | 50Ω | |
| Frequency range | 880 to 960MHz | |
| Unbalanced port return loss | 12dB min. | |
| Phase imbalance at balanced port | 180±10deg. | |
| Amplitude imbalance 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 | |

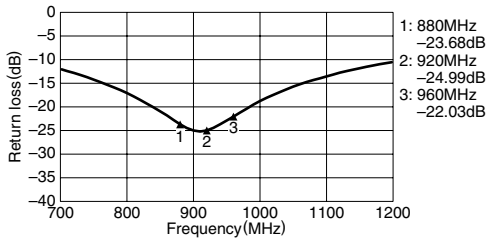
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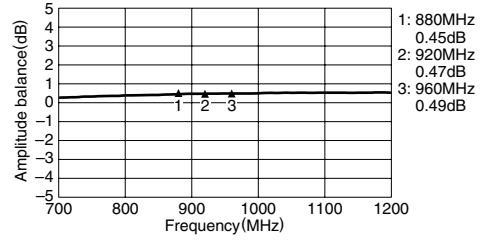
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

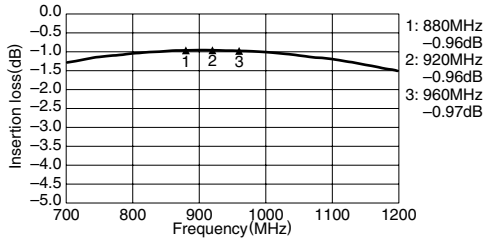
RETURN LOSS



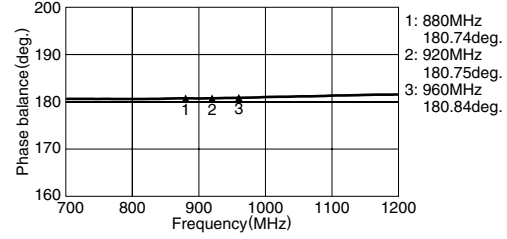
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE



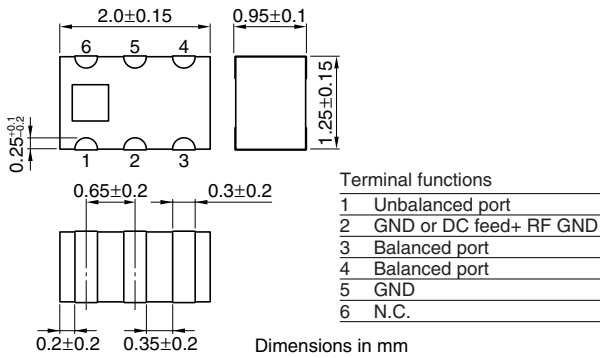
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Multilayer Chip Baluns For EGSM/Tx & Rx

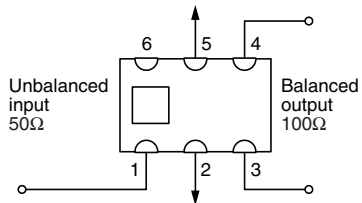
Conformity to RoHS Directive

HHM Series HHM1523C1

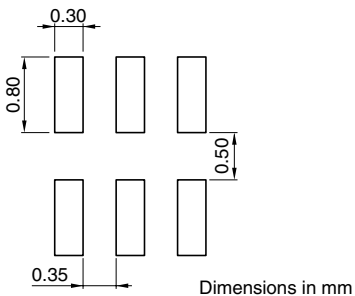
SHAPES AND DIMENSIONS



CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

| | |
|--------------------------------------|------------------------|
| Unbalanced impedance | 50Ω |
| Balanced impedance | 100Ω |
| Frequency range | 880 to 960MHz |
| Unbalanced port return loss | 10dB min. |
| Phase imbalance at balanced port | 180±10deg. |
| Amplitude imbalance 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 |

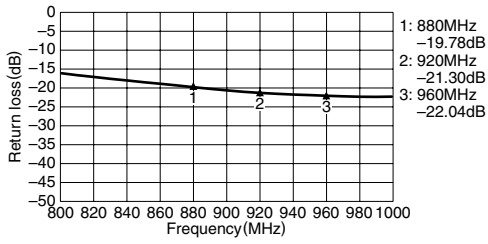
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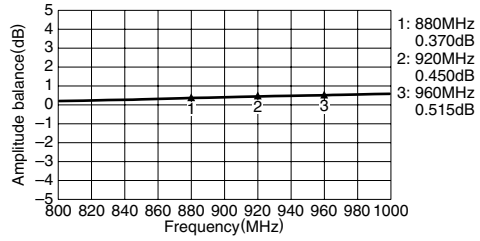
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

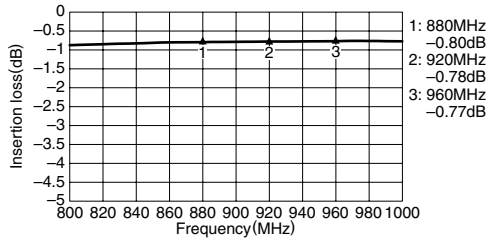
RETURN LOSS



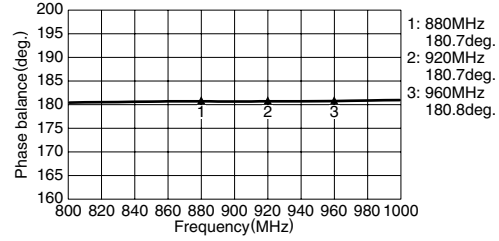
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

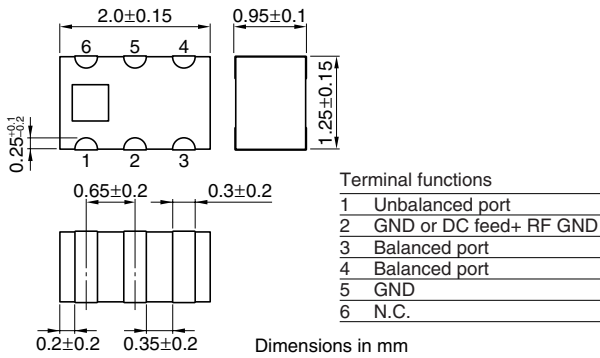


Multilayer Chip Baluns For EGSM/Tx & Rx

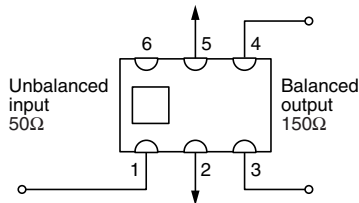
Conformity to RoHS Directive

HHM Series HHM1524B1

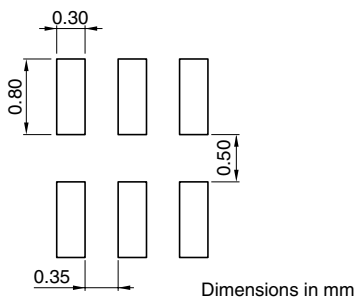
SHAPES AND DIMENSIONS



CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERNS



ELECTRICAL CHARACTERISTICS

| | | |
|--------------------------------------|-----------------|--------------|
| Unbalanced impedance | 50Ω | |
| Balanced impedance | 150Ω | |
| Frequency range | 880 to 960MHz | |
| Unbalanced port return loss | 10dB min. | |
| Phase imbalance at balanced port | 180±10deg. | |
| Amplitude imbalance 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 | |

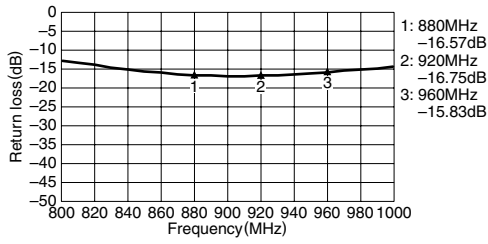
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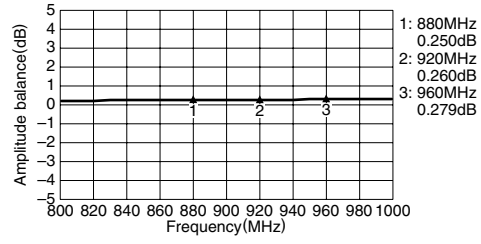
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

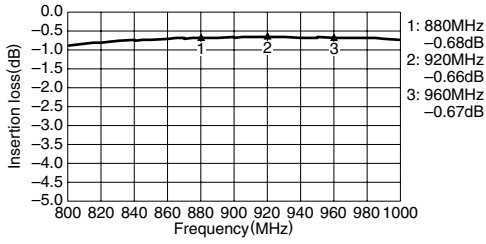
RETURN LOSS



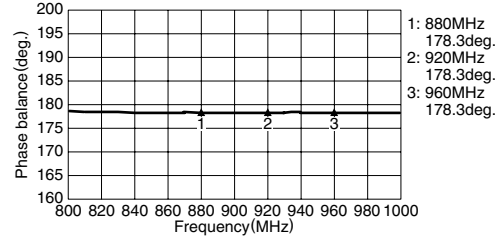
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE



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