

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

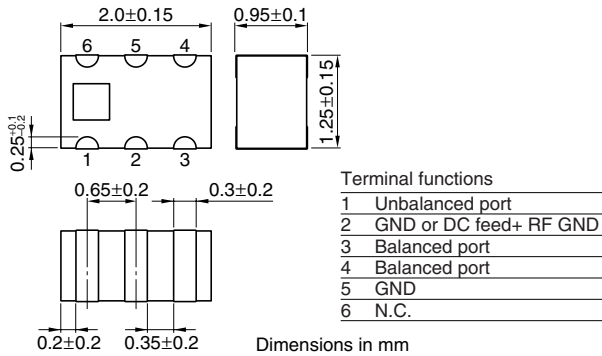
- All specifications are subject to change without notice.
 - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.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

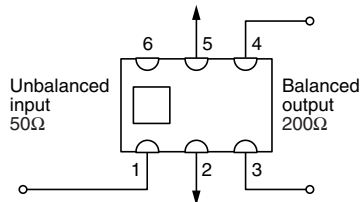
Conformity to RoHS Directive

HHM Series HHM1515B2

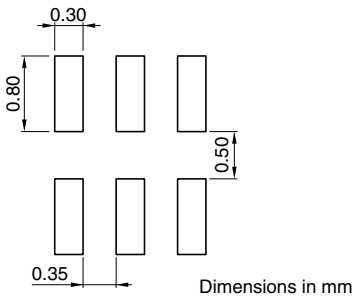
SHAPES AND DIMENSIONS



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

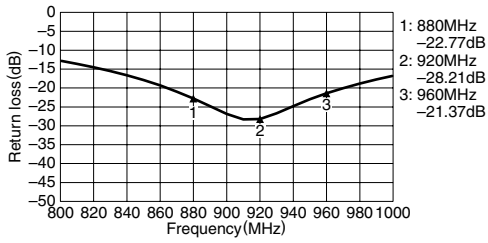
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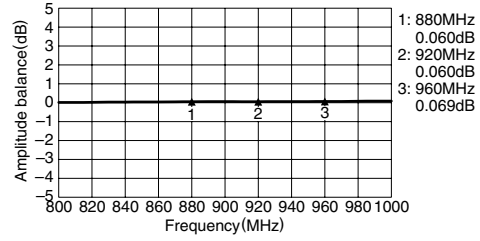
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 200Ω

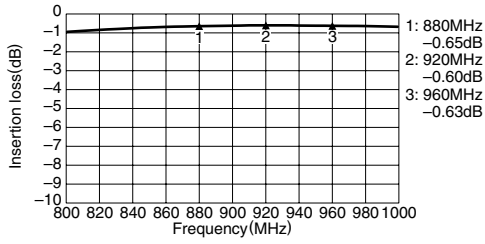
RETURN LOSS



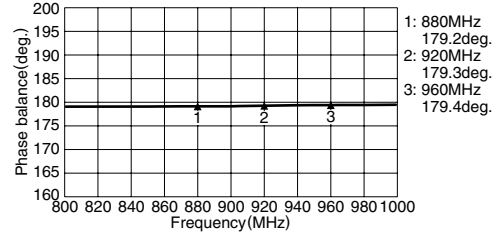
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE



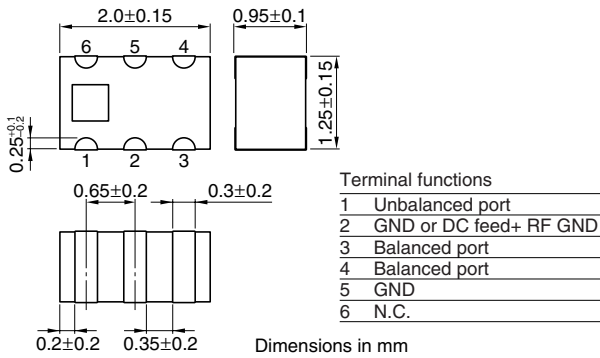
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Multilayer Chip Baluns For EGSM/Tx & Rx

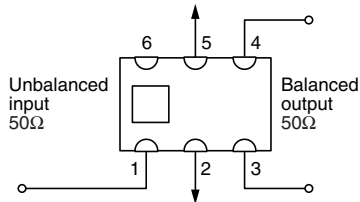
Conformity to RoHS Directive

HHM Series HHM1522B1

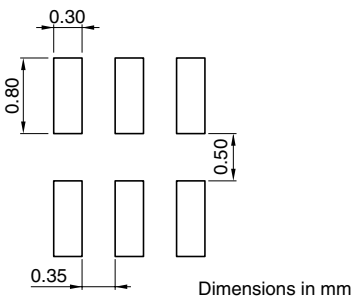
SHAPES AND DIMENSIONS



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	

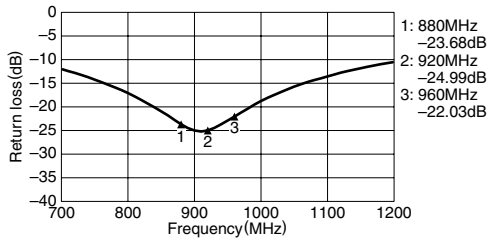
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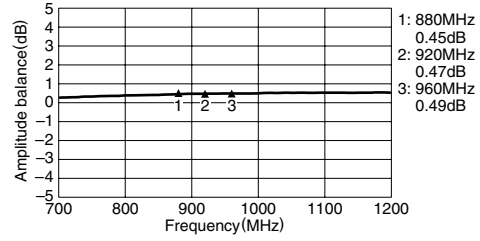
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 50Ω

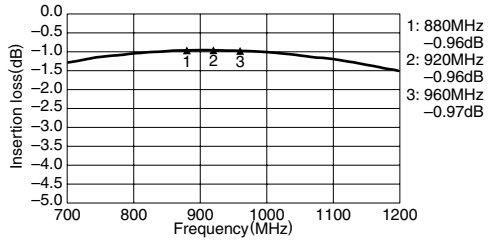
RETURN LOSS



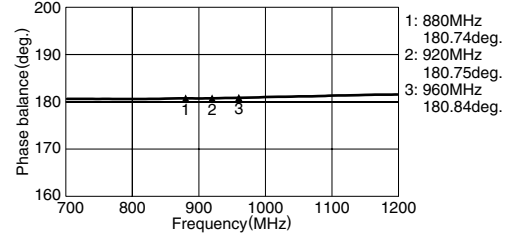
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE



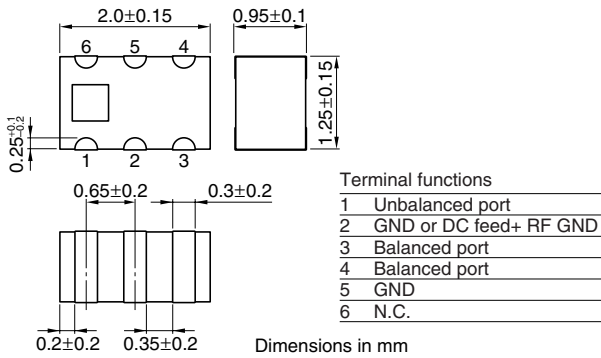
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Multilayer Chip Baluns For EGSM/Tx & Rx

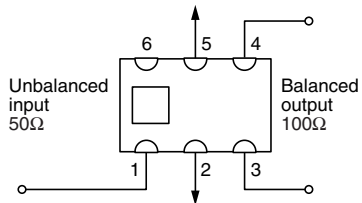
Conformity to RoHS Directive

HHM Series HHM1523C1

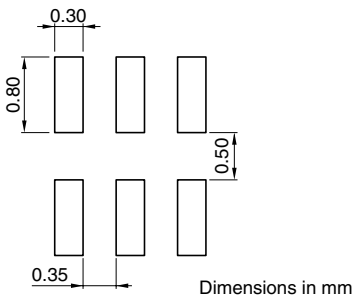
SHAPES AND DIMENSIONS



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

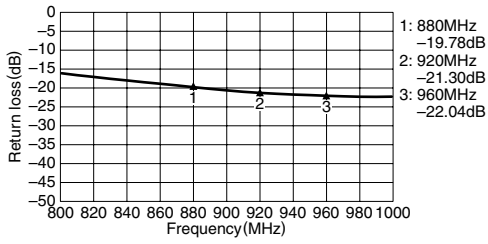
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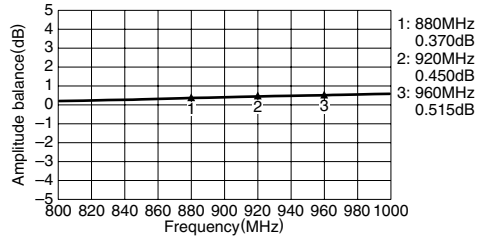
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

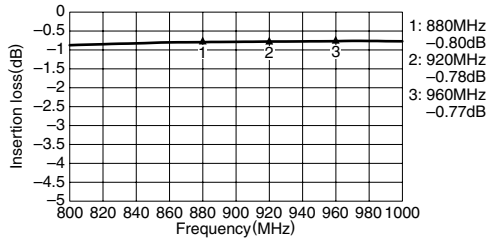
RETURN LOSS



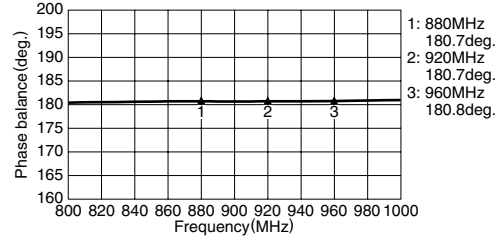
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE

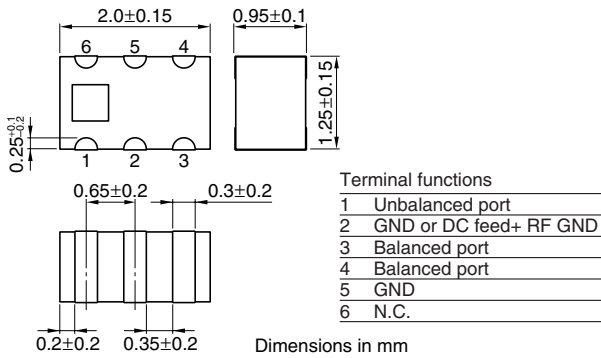


Multilayer Chip Baluns For EGSM/Tx & Rx

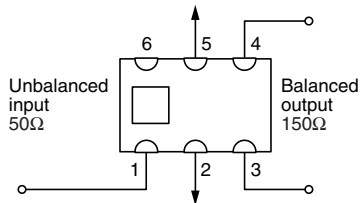
Conformity to RoHS Directive

HHM Series HHM1524B1

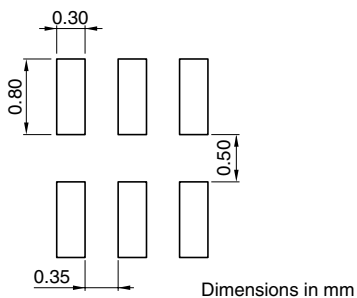
SHAPES AND DIMENSIONS



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

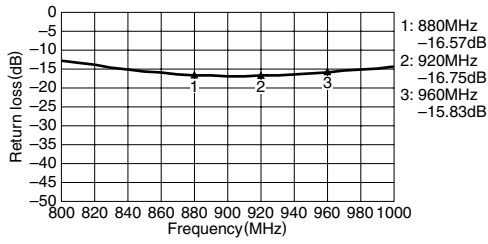
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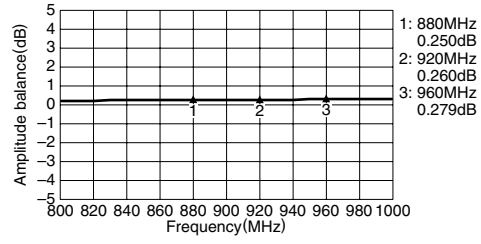
FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 150Ω

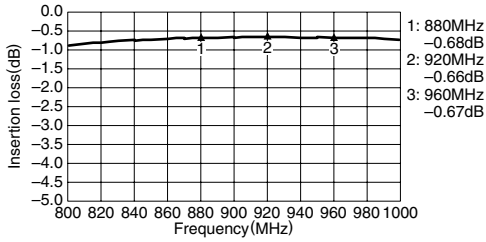
RETURN LOSS



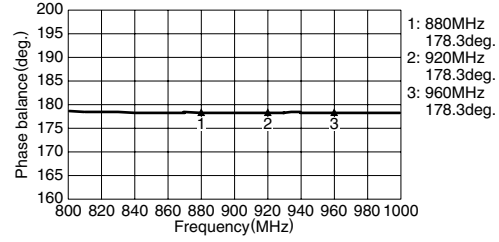
AMPLITUDE BALANCE



INSERTION LOSS



PHASE BALANCE



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