

# Multilayer Balun Transformers

For UWB

## HHM Series

Type:            **HHM1583B1 (2.0×1.25×0.95mm)**  
                     **HHM1595A1 (2.0×1.25×0.95mm)**  
                     **HHM1596A1 (2.0×1.25×0.95mm)**

Issue date:     December 2010

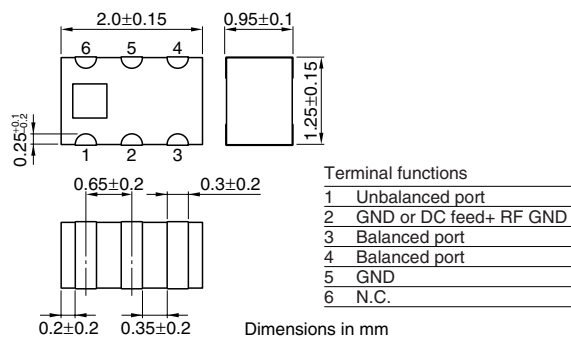
- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

# Multilayer Chip Baluns For UWB

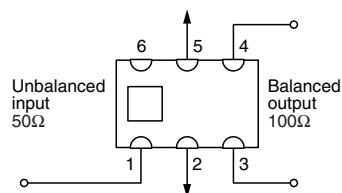
Conformity to RoHS Directive

HHM Series HHM1583B1

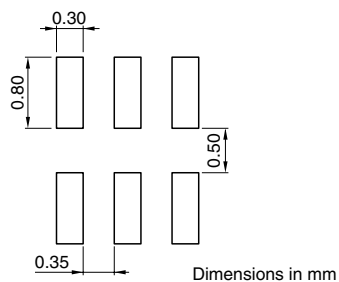
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERNS



## ELECTRICAL CHARACTERISTICS

Unbalanced impedance	50Ω	
Balanced impedance	100Ω	
Frequency range	3100 to 4900MHz	
Unbalanced port return loss	10.0dB min.	
Phase imbalance at balanced port	180±10deg.	
Amplitude imbalance 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	

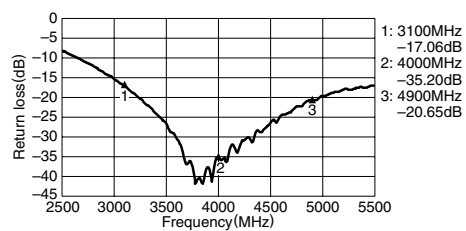
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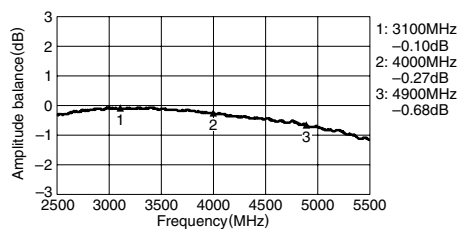
### FREQUENCY CHARACTERISTICS

Unbalance 50Ω/Balance 100Ω

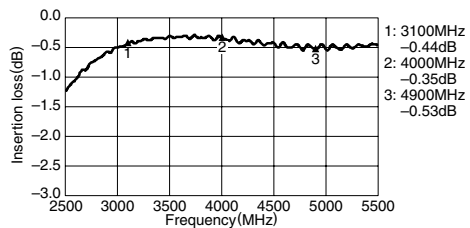
#### RETURN LOSS



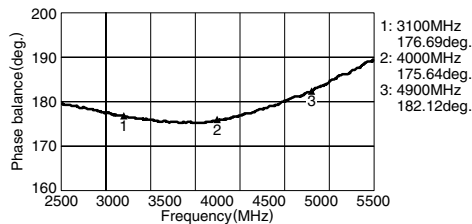
#### AMPLITUDE BALANCE



#### INSERTION LOSS



#### PHASE BALANCE



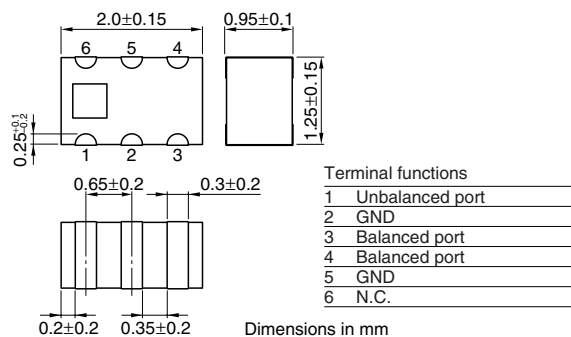
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# Multilayer Chip Baluns For UWB

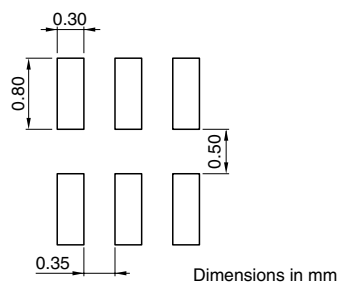
Conformity to RoHS Directive

HHM Series HHM1595A1

## SHAPES AND DIMENSIONS



## RECOMMENDED PC BOARD PATTERNS



## ELECTRICAL CHARACTERISTICS

Unbalanced impedance		50Ω
Balanced impedance		100Ω
Frequency range		3000 to 8000MHz
Unbalanced port return loss		8.0dB min.
Phase imbalance at balanced port		180±20deg.
Amplitude imbalance at balanced port		0±2.5dB
Insertion loss		1.5dB max.
Temperature range	Operating	-40 to +85°C
	Storage	-40 to +85°C
Packaging style and quantities		2000pieces/reel

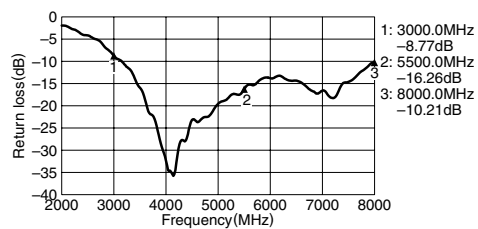
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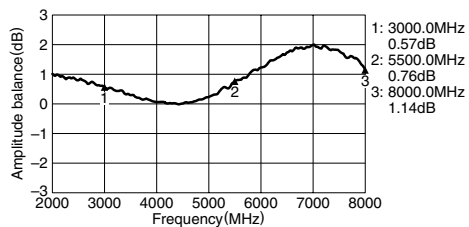
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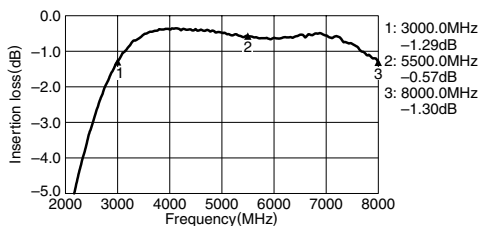
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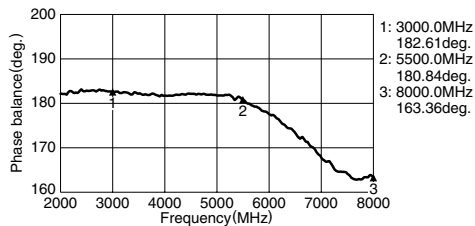
#### AMPLITUDE BALANCE



#### INSERTION LOSS



#### PHASE BALANCE



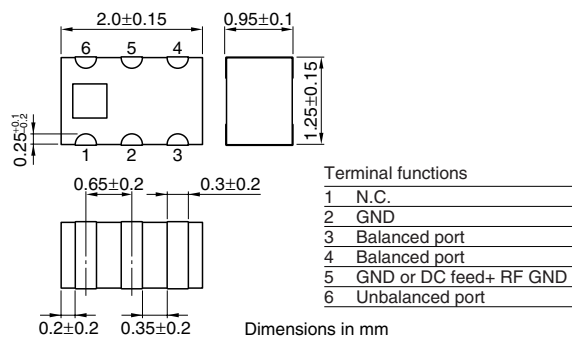
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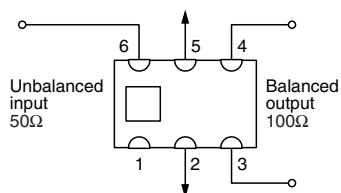
Conformity to RoHS Directive

HHM Series HHM1596A1

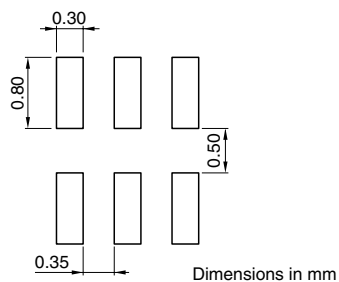
## SHAPES AND DIMENSIONS



## CIRCUIT DIAGRAM



## RECOMMENDED PC BOARD PATTERNS



## ELECTRICAL CHARACTERISTICS

Unbalanced impedance	50Ω	
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Frequency range	3100 to 4900MHz	
Unbalanced port return loss	10dB min.	
Phase imbalance at balanced port	180±15deg.	
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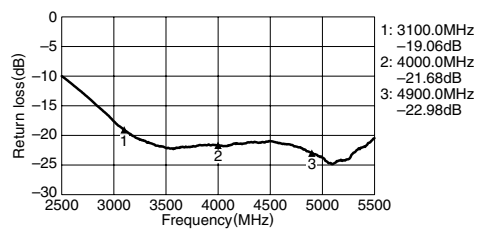
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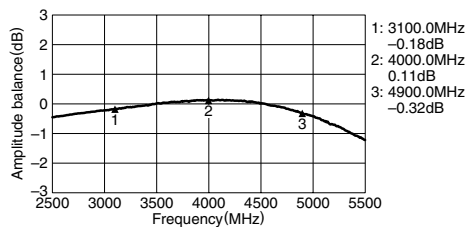
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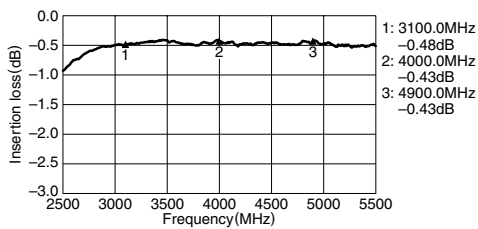
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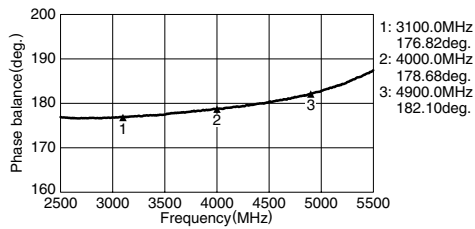
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