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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# Thin Film Balun Transformers

For DVB-H/T, ISDB-T

## TTB Series

Type: **TTB16G11 (1.6×0.8×0.4mm)**

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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# Thin Film Chip Baluns For DVB-H/T and ISDB-T

Conformity to RoHS Directive

## TTB Series TTB16G11

### FEATURES

- This is an optimal, thin film chip balun transformer for 50 to 200Ω with low loss at DVB-H/T and ISDB-T frequency bands(174 to 860MHz).
- Does not contain lead and is compatible with lead-free soldering.
- It is a product conforming to RoHS directive.

### APPLICATIONS

Balanced/unbalanced conversion for DVB-H/T and ISDB-T radio frequency inputs

### PRODUCT IDENTIFICATION

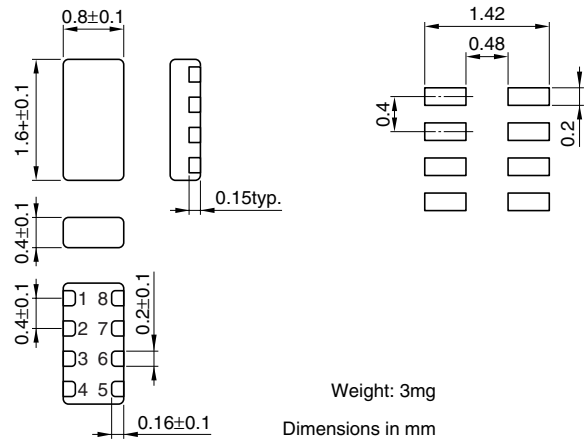
TTB	16	G11	-	201	-	4P	-	T	20
(1)	(2)	(3)	(4)	(5)	(6)	(7)			

- (1) Series name  
 (2) Case size  
 (3) Product identification number  
 G11:  $Z_0=100\Omega$   
 (4) Common mode impedance  
 201: 200Ω/900: 90Ω [at 100MHz]  
 (5) Number of line  
 4P: 4-line  
 (6) Packaging style  
 T: ø180mm reel taping  
 (7) TDK internal code

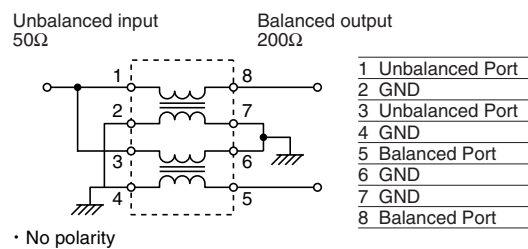
### PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	4000 pieces/reel

### SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



### CIRCUIT DIAGRAM



### ELECTRICAL CHARACTERISTICS

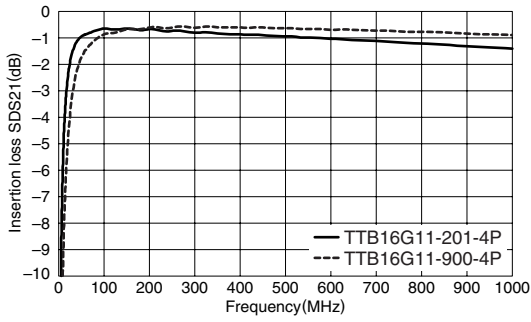
Part No.	TTB16G11-201-4P	TTB16G11-900-4P
Characteristics impedance	100Ω typ.	100Ω typ.
DC resistance [1 line]	4.0Ω±30%	1.5Ω±30%
Rated current I <sub>dc</sub>	0.05A max.	0.1A max.
Rated voltage E <sub>dc</sub>	5V max.	5V max.
Insulation resistance	10MΩ min.	10MΩ min.
Amplitude balance at balanced port [100 to 860MHz]	0±2.0dB	0±2.0dB
Phase balance at balanced port [100 to 860MHz]	180±15deg.	180±15deg.
Insertion loss [100 to 860MHz]	3.5dB max.	3.0dB max.
Operating temperature ranges	-25 to +85°C	-25 to +85°C

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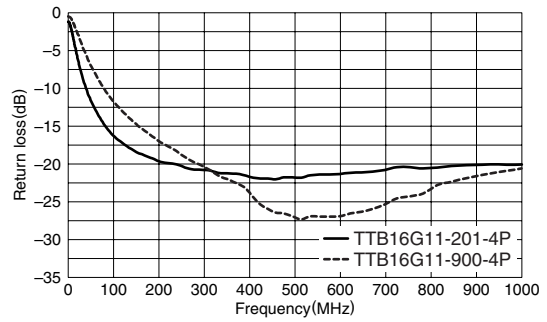
• All specifications are subject to change without notice.

### FREQUENCY CHARACTERISTICS

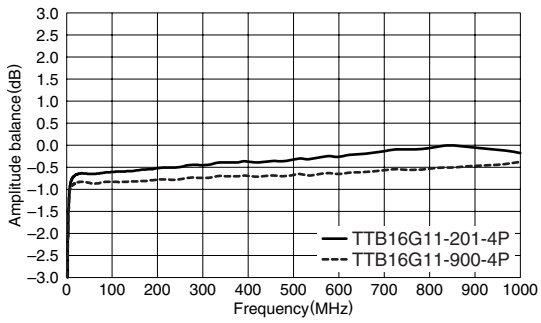
#### INSERTION LOSS



#### RETURN LOSS



#### AMPLITUDE BALANCE at BALANCED PORT



#### PHASE BALANCE at BALANCED PORT

