



Thin Film Chip LC Filter

Now under development

TLF series



Low top max. 0.35mm
Excellent frequency characteristic

RoHS compliant

Completely lead free

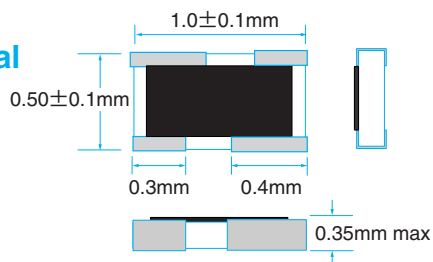


Example of application and its Characteristic

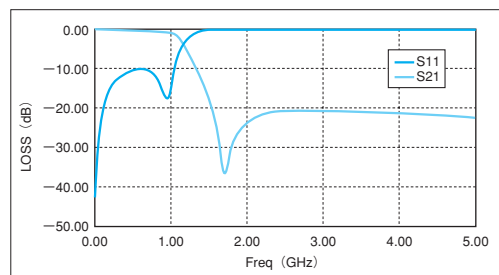
●Low Pass filter (LPF) for digital terrestrial broadcasting receiver

TLF-1005-078-***

Mechanical



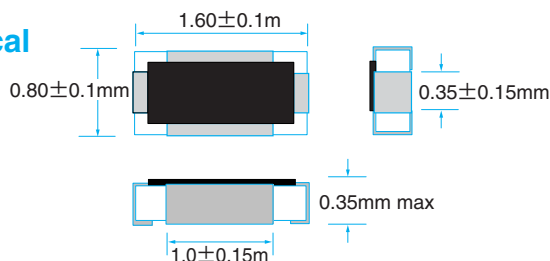
Electrical



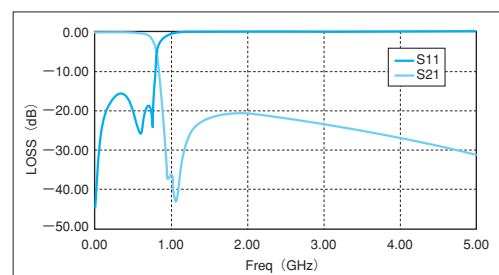
	Insertion Loss	Attenuation
specification	470~770MHz	1.7GHz
Simulation	1.0dB max	30dB min

TLF-1608-078-***

Mechanical



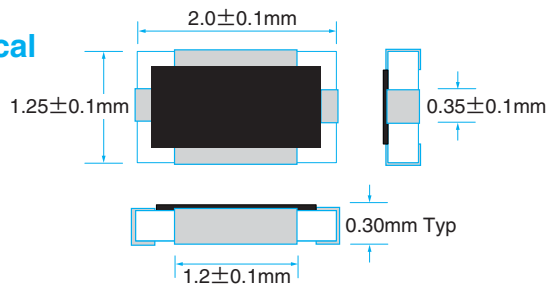
Electrical



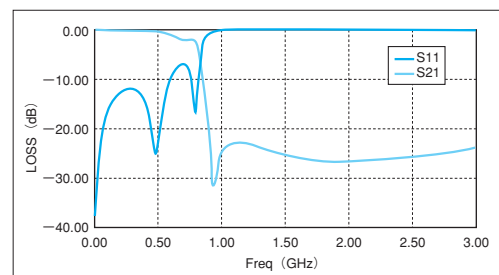
	Insertion Loss			Attenuation
specification	470~600MHz	600~710MHz	710~770MHz	890MHz~2.5GHz
Simulation	1.0dB max	1.8dB max	3.5dB max	20dB min

TLF-2012-078-***

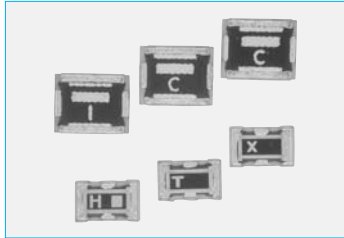
Mechanical



Electrical



	Insertion Loss			Attenuation
specification	470~570MHz	570~670MHz	670~770MHz	880MHz~2.5GHz
Simulation	1.5dB max	2.0dB max	3.5dB max	15dB min



Thin Film Chip LC Filter

W-LAN, Bluetooth (Band-Pass Filter)
TBF series

NEW



Low top max. 0.4mm and small size.
Excellent loss characteristics.

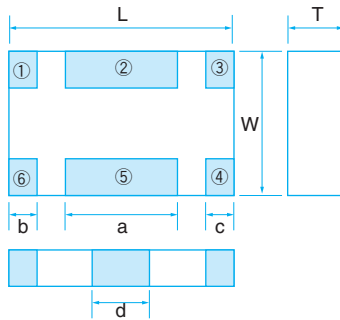
RoHS compliant

Completely lead free

SPECIFICATIONS

Mechanical

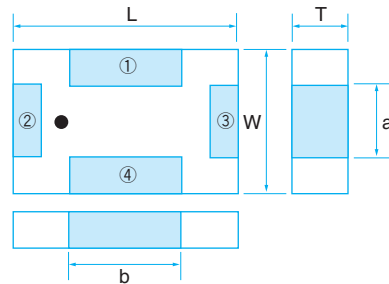
TBF-1005-245-F1



Dimension (mm)	TBF1005-245-F1
L	1.0±0.1
W	0.5±0.1
T	0.4±0.1
a	0.4±0.1
b	0.15±0.05
c	0.15±0.05
d	0.25±0.05

	F1
①	Input
②	GND
③	Output
④	Input
⑤	GND
⑥	Output

TBFseries (except "TBF-1005-245-F1")



Dimension (mm)	TBF1005	TBF1608	TBF2012
L	1.0±0.05	1.6±0.1	2.0±0.1
W	0.5±0.05	0.8±0.1	1.25±0.1
T	0.5 max	0.4 max	0.4 max
a	0.2±0.05	0.6±0.1	0.75±0.1
b	0.3±0.05	0.4±0.1	0.4±0.1

	TBF1005	TBF1608	TBF2012
①	GND	Input	Output
②	GND	Output	Input
③	Input	GND	GND
④	Output	GND	GND

Electrical

Band-Pass Filter

Type	TBF-1005-245-F1	TBF1005-181-F1	TBF1608-245-R1N	TBF2012-245-R1	TBF2012-245-R4
Application	For Bluetooth, W-LAN	For DCS	For Bluetooth, W-LAN	For Bluetooth, W-LAN	For Bluetooth, W-LAN
F0 (MHz)	2450	1810	2450	2450	2450
Band (MHz)	2400~2500	1710~1910	2400~2500	2400~2500	2400~2500
Insertion Loss	2.5dB at 25°C	2.0dB at 25°C	1.7dB at 25°C	1.5dB at 25°C	2.5dB at 25°C
	2.8dB at -40~85°C	2.3dB at -40~85°C	1.9dB at -40~85°C	1.6dB at -40~85°C	
Attenuation	30.0dB at 824~960MHz	20.0dB at 855~955MHz 10.0dB at 2565~2865MHz	20.0dB at 1710~1910MHz 30.0dB at 4800~5000MHz 30.0dB at 7200~7500MHz	30.0dB at 880~960MHz	40.0dB at 880~960MHz
	25.0dB at 1700~1900MHz			25.0dB at 1710~1910MHz	35.0dB at 1710~1990MHz
	30.0dB at 4800~5000MHz			30.0dB at 4800~5000MHz	20.0dB at 2110~2170MHz
	20.0dB at 7200~7500MHz			30.0dB at 4800~5000MHz	20.0dB at 4800~5000MHz
VSWR in BW	2.0 Max.				
Impedance	50Ω				
Power	500mW Max.				

PART NUMBER

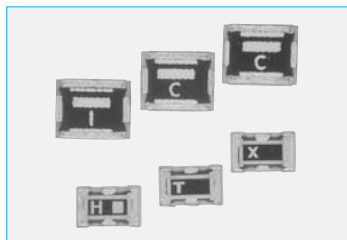
TBL 1608 - 245 - M2

Type(see electrical characteristics table)

Center Frequency F0

Dimension

Part Code



Thin Film Chip LC Filter

W-LAN, Bluetooth, TBL series (Balun), **NEW**
TBB series (Balance filter), TDP series (Diplexer)



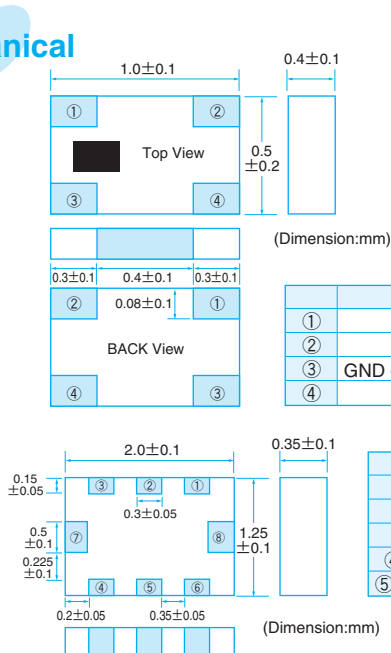
Low top max. 0.4mm and small size.
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SPECIFICATIONS

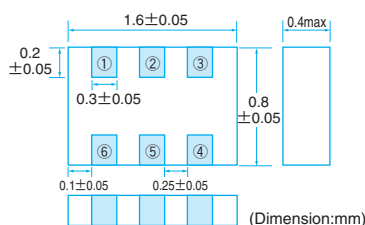
Mechanical



TBL1005
① Balance Port
② Balance Port
③ GND or Dc feed + RF GND
④ Unbalance Port

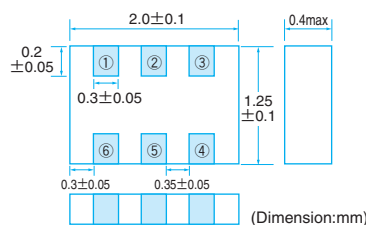
TBB2012
① Unbalance Port
② Dcfeed and RF GND or GND
③ NC
④⑥ Balance Port
⑤⑦⑧ GND

TBL1608 series



TBL1608-245-M2	TBL1608-245-M2
① GND or Dc feed	NC
② NC	GND or Dc feed
③ Unbalance Port	Balance Port
④ Balance Port	Unbalance Port
⑤ NC	GND or Dc feed
⑥ Balance Port	Balance Port

TDP series



TDP series
① LB (HB)
② GND
③ HB (LB)
④ GND
⑤ Com
⑥ GND

Electrical

Balun

Type	TBL-1005-245-M1	TBL1005-245-M2	TBL-1005-537-M2	TBL-1608-245-M2	TBL-1608-245-L1
Application	For Bluetooth, W-LAN	For Bluetooth, W-LAN	For W-LAN	For Bluetooth, W-LAN	For Bluetooth, W-LAN
F0 (MHz)	2450	2450	5375	2450	2450
Band (MHz)	2400~2500	2400~2500	4900~5850	2400~2500	2400~2500
Unbalance Port Impedance	50Ω	50Ω	50Ω	50Ω	50Ω
balance Port Impedance	50Ω	100Ω	100Ω	100Ω	50Ω
Phase	180±10deg	180±10deg	180±10deg	180±10deg	180±10deg
Insertion Loss	1.2dB Max at 25°C	1.2dB Max at 25°C	1.2dB Max at 25°C	1.0dB Max at 25°C	1.0dB Max at 25°C
VSWR in BW	2.0 Max	2.0 Max	2.0 Max	2.0 Max	2.0 Max
Power	500mW Max	500mW Max	500mW Max	500mW Max	500mW Max

Diplexer

Type	TDP2012-217-G1
Application	For CDMA
Pass Band	Low 824~960MHz High 1710~2170MHz
Insertion Loss	Low 0.70dB at 824~915MHz 0.85dB at 925~960MHz High 0.75dB at 1710~1910MHz 0.85dB at 1910~2170MHz
Attenuation	Low 20dB at 1648~1830MHz 25dB at 2400~2500MHz 20dB at 2472~2745MHz 20dB at 3296~3660MHz High 10dB at 3240~3820MHz 10dB at 5130~5730MHz 10dB at 6840~7640MHz
VSWR in BW	Low 2.0 Max. High 2.0 Max.
Impedance	50Ω

Balance filter

Type	TBB-2012-245-C2
Application	For Bluetooth, W-LAN
F0 (MHz)	2450
Band (MHz)	2400~2500
Unbalance Port Impedance	50Ω
balance Port Impedance	Conjugate match to CSR series

Phase	180±10deg
VSWR at Unbalance Port in BW	2.0 MAX
Insertion Loss	3.5dB Max at 25°C
Attenuation	35.0dB at 880~960MHz 30.0dB at 1700~1880MHz 20.0dB at 1880~1990MHz 30.0dB at 4800~5000MHz
Power	500mW Max



PART NUMBER

TBL 1608 - 245 - M2

Type(see electrical characteristics table)

Center Frequency F0

Dimension

Part Code