

# Thin-film Diplexer

For W-LAN

## TFSD Series

Type:            **TFSD10055950-5001C1**  
                     **TFSD10055950-5102A2**

Issue date:     February 2013

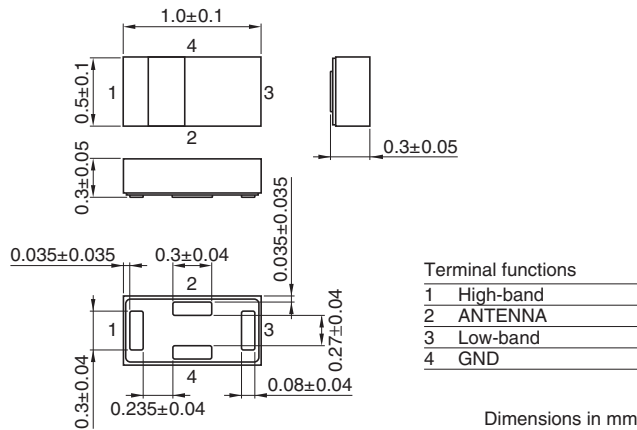
- All specifications are subject to change without notice.
  - Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.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

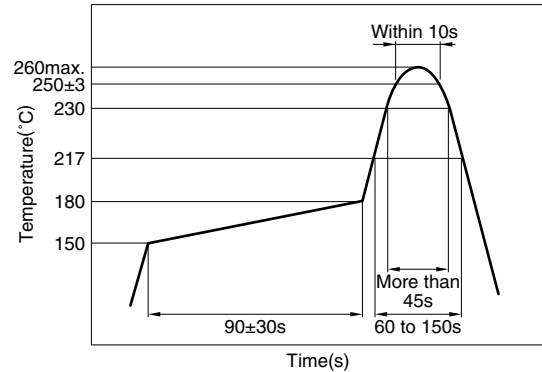
Conformity to RoHS Directive

TFSD Series TFSD10055950-5001C1

## SHAPES AND DIMENSIONS

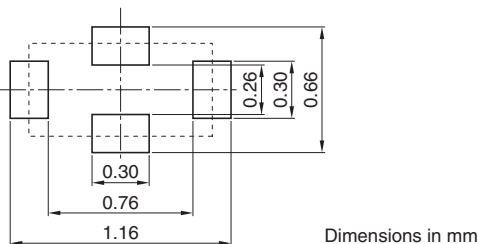


## RECOMMENDED REFLOW SOLDERING CONDITION



\* In this product, the recommended soldering condition is 'reflow'.  
Reflow Soldering : Maximum 2 times

## RECOMMENDED PC BOARD PATTERNS



The recommended distance to the PCB ground plane is 0.2mm.  
Line width be designed to match 50Ω characteristic impedance depending on PCB Material and thickness.

## ELECTRICAL CHARACTERISTICS

Item	Port	Frequency range	Minimum value	Typical value	Maximum value
Insertion loss	Low-band	2400 to 2500MHz	(dB) —	0.43	0.5
	High-band	4900 to 5950MHz	(dB) —	0.49	0.65
Return loss	ANT	2400 to 2500MHz	(dB) 10	19.5	—
	ANT	4900 to 5950MHz	(dB) 10	20.4	—
	Low-band	2400 to 2500MHz	(dB) 10	21.4	—
	High-band	4900 to 5950MHz	(dB) 10	22.5	—
Attenuation	Low-band	4800 to 5000MHz	(dB) 20	23.1	—
	Low-band	7200 to 7500MHz	(dB) 20	29.2	—
	High-band	824 to 915MHz	(dB) 20	25.6	—
	High-band	1800 to 2500MHz	(dB) 20	24.1	—
	High-band	9800 to 11900MHz	(dB) 18	21.0	—
Isolation	High-band	DC to 2500MHz	(dB) 20	23.4	—
	High-band	4900 to 5950MHz	(dB) 20	23.9	—
Temperature range	Operating	(°C)	-40	—	+85
	Storage	(°C)	-40	—	+85

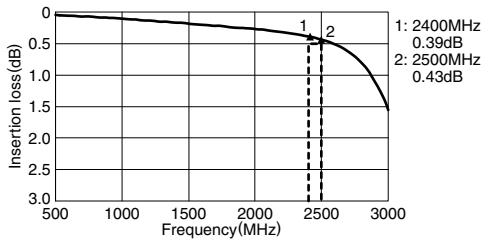
• Ta: +25°C

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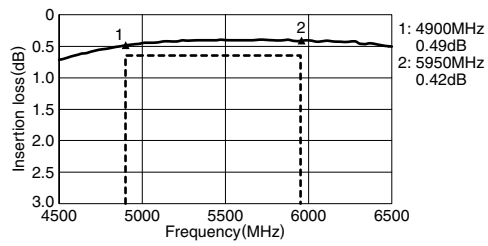
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### FREQUENCY CHARACTERISTICS

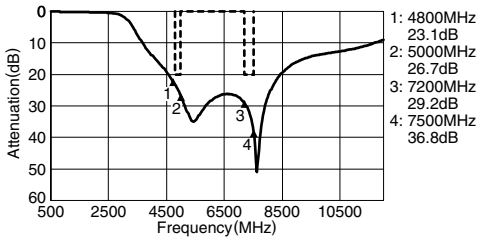
#### Low-BAND PORT INSERTION LOSS



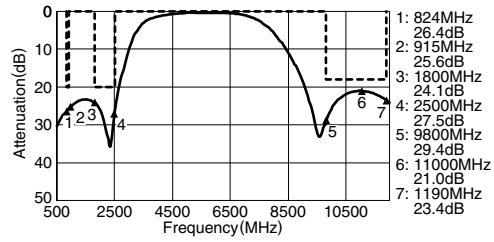
#### High-BAND PORT INSERTION LOSS



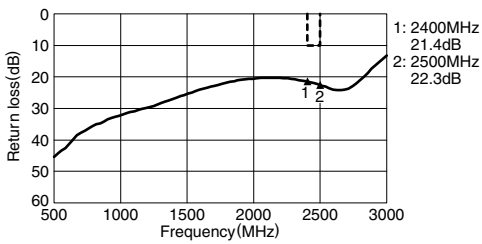
#### Low-BAND PORT ATTENUATION



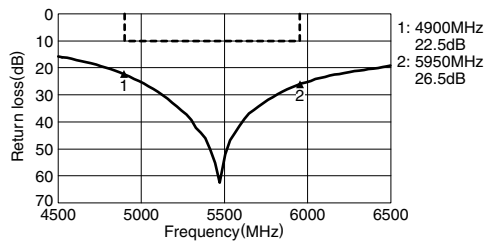
#### High-BAND PORT ATTENUATION



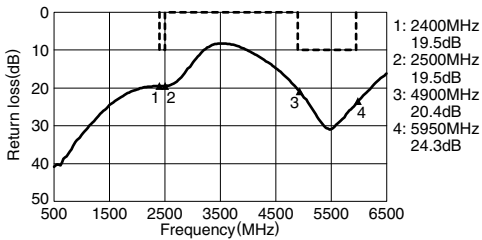
#### Low-BAND PORT RETURN LOSS



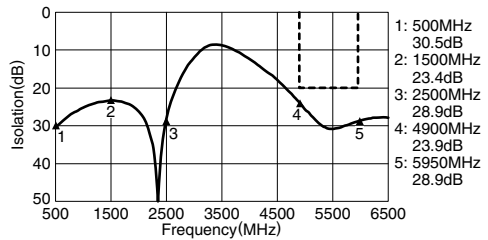
#### High-BAND PORT RETURN LOSS



#### ANTENNA PORT RETURN LOSS



#### ISOLATION (Low-High)



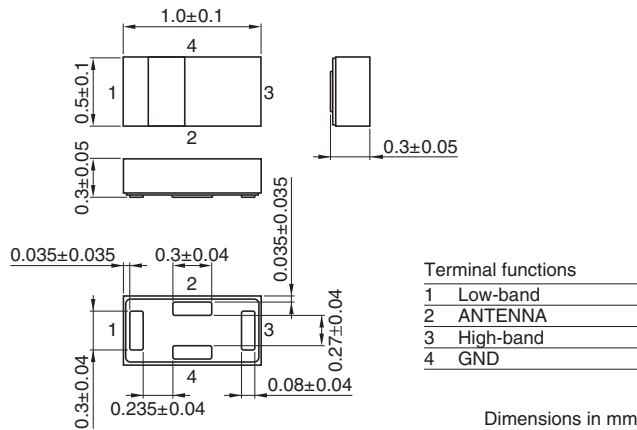
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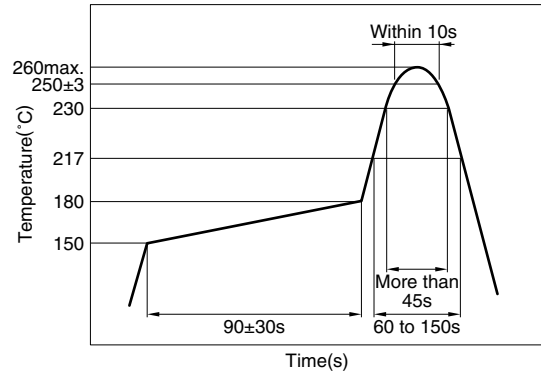
Conformity to RoHS Directive

TFSD Series TFSD10055950-5102A2

## SHAPES AND DIMENSIONS

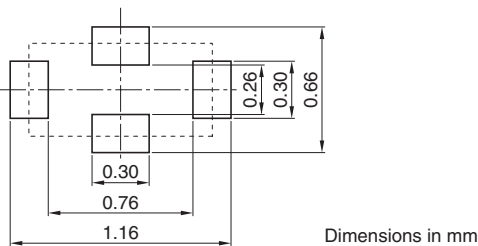


## RECOMMENDED REFLOW SOLDERING CONDITION



\* In this product, the recommended soldering condition is 'reflow'.  
Reflow Soldering : Maximum 2 times

## RECOMMENDED PC BOARD PATTERNS



The recommended distance to the PCB ground plane is 0.2mm.  
Line width be designed to match 50Ω characteristic impedance depending on PCB Material and thickness.

## ELECTRICAL CHARACTERISTICS

Item	Port	Frequency range	Minimum value	Typical value	Maximum value
Insertion loss	Low-band*1	2400 to 2496MHz	(dB) —	0.35	0.5
	High-band*1	4900 to 5950MHz	(dB) —	0.74	0.12
	Low-band*2	2400 to 2496MHz	(dB) —	—	0.65
	High-band*2	4900 to 5950MHz	(dB) —	—	1.4
Return loss	ANT	2400 to 2500MHz	(dB) 10	21.2	—
	ANT	4900 to 5950MHz	(dB) 10	15.2	—
	Low-band	2400 to 2500MHz	(dB) 10	18.0	—
	High-band	4900 to 5950MHz	(dB) 10	14.8	—
Attenuation	Low-band	4900 to 5950MHz	(dB) 20	24.6	—
	Low-band	7200 to 7488MHz	(dB) 20	27.3	—
	High-band	500 to 2700MHz	(dB) 26	30.8	—
Isolation	High-band	9800 to 11900MHz	(dB) 15	20.5	—
	Low-band	500 to 2700MHz	(dB) 26	30.8	—
Temperature range	Operating	(°C)	−40	—	+85
	Storage	(°C)	−40	—	+85

\*1 +25°C

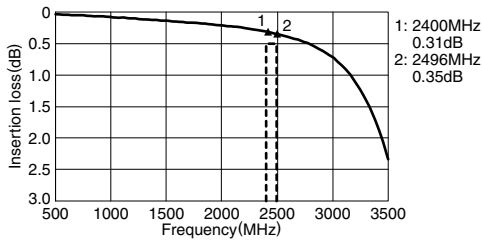
\*2 −40 to +85°C

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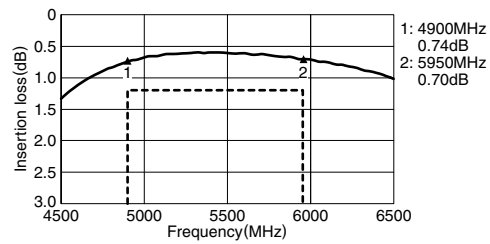
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### FREQUENCY CHARACTERISTICS

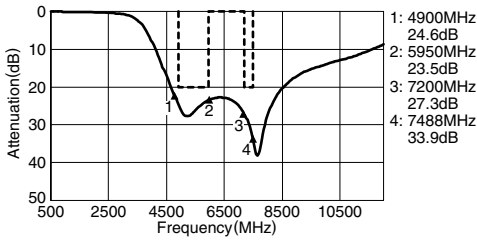
#### Low-BAND PORT INSERTION LOSS



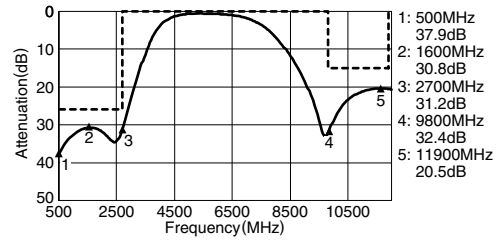
#### High-BAND PORT INSERTION LOSS



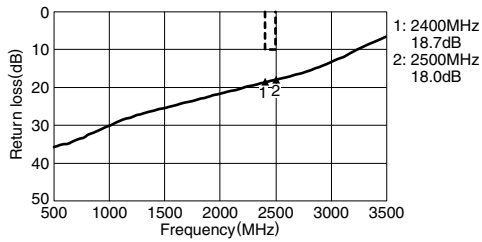
#### Low-BAND PORT ATTENUATION



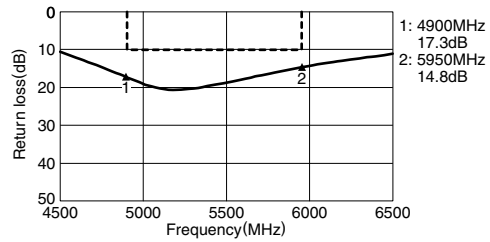
#### High-BAND PORT ATTENUATION



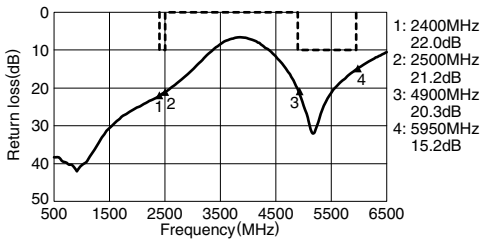
#### Low-BAND PORT RETURN LOSS



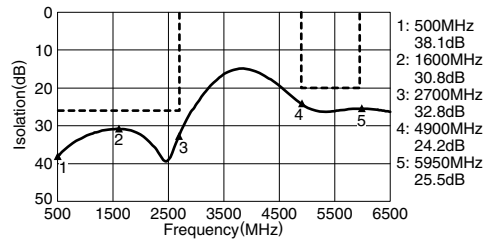
#### High-BAND PORT RETURN LOSS



#### ANTENNA PORT RETURN LOSS



#### ISOLATION (Low-High)



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