



May. 2021 Ver.3.0
TDK Corporation

Multilayer Low Pass Filter

For 5GHz W-LAN

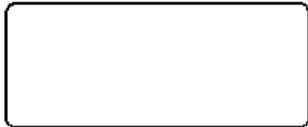
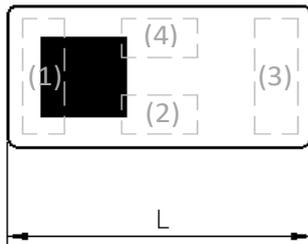
DEA Series 1.6x0.8mm [EIA 0603] TYPE

P/N: **DEA165950LT-5134A1**

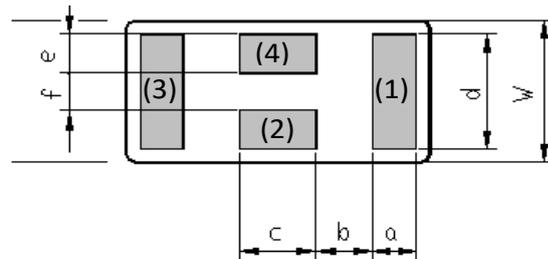
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■ SHAPES AND DIMENSIONS

[Top View]



[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	e	f
1.60	0.80	0.65	0.225	0.30	0.40	0.65	0.22	0.21
+/-0.10	+/-0.10	Max	+/-0.05	+/-0.05	+/-0.05	+/- 0.05	+/-0.05	+/-0.05

Terminal functions

(1)	Input / Output Port
(2)	GND
(3)	Output / Input Port
(4)	GND

■ TERMINATION FINISH

Material
Ag

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■ ELECTRICAL CHARACTERISTICS

(Measurement)

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	4900 to 5950	-	0.35	0.55
Insertion Loss (dB) (-40 to +85 °C)	4900 to 5950 to	-	-	0.70
Return Loss@Input (dB)	4900 to 5950	12	26	-
Return Loss@Output (dB)	4900 to 5950	12	27	-
Attenuation (dB)	9800 to 11900	35	44	-
	14700 to 17850	29	36	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

■ MAXIMUM RATINGS

Parameter		TDK Spec	Conditions
Operating temperature (°C)		-40 to +85 °C	
Storage temperature (°C)		-40 to +85 °C	
Power Handling (W) *1	Frequency (MHz)		
	4900 to 5950	1	CW Duty 100%
Human Body Model : HBM	@Each Port (V)	+/-1000	100pF / 1500ohm
Machine Model : MM	@Each Port (V)	+/-150	200pF / 0ohm
Charged Device Model : CDM	@Each Port (V)	+/-500	Humidity : 60%RH max

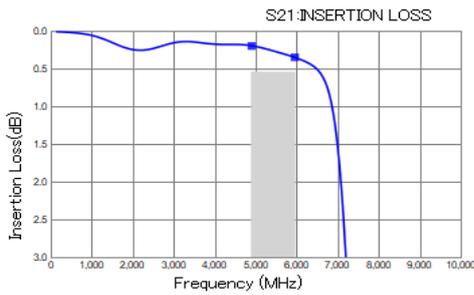
*1 : Refer to 3GPP TS 38.101-1 V15.2.0

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FREQUENCY CHARACTERISTICS

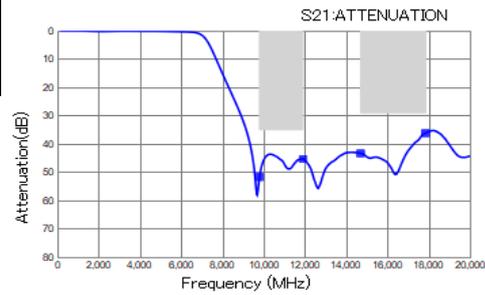
■ TDK Spec

Insertion Loss



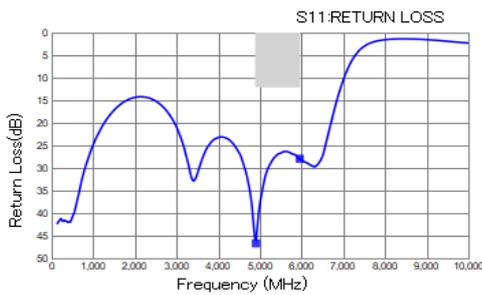
Freq	dB
4900	0.20
5950	0.35

Attenuation



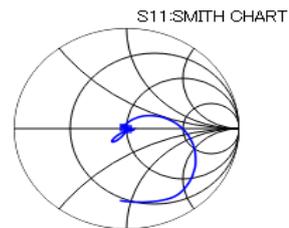
Freq	dB
9800	51.71
11900	45.23
14700	43.35
17850	36.21

Return Loss (Input Port)



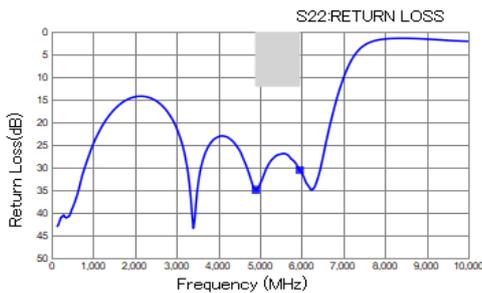
Freq	dB
4900	46.70
5950	27.95

Smith Chart (Input Port)



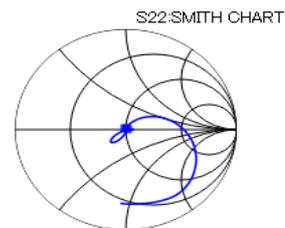
Freq	r/x
4900	50.11/0.45
5950	46.60/1.84

Return Loss (Output Port)



Freq	dB
4900	34.92
5950	30.54

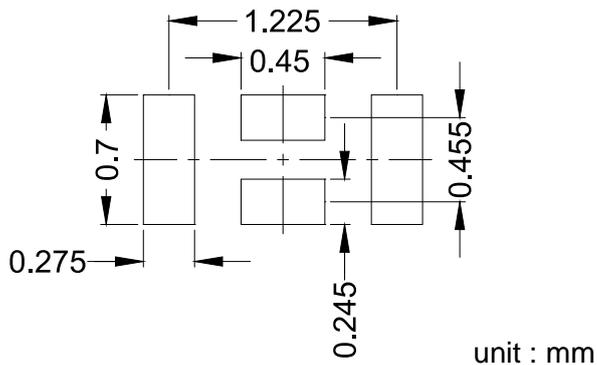
Smith Chart (Output Port)



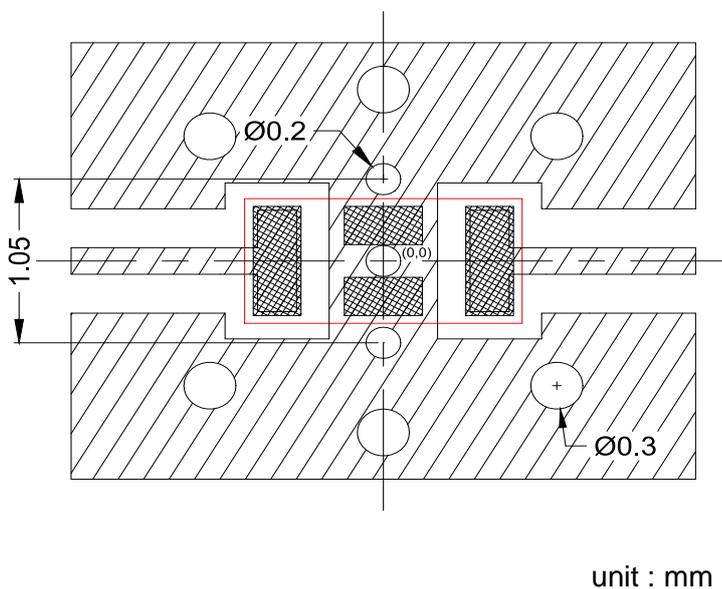
Freq	r/x
4900	50.80/1.62
5950	48.49/2.51

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RECOMMENDED LAND PATTERN



EVALUATION BOARD



Material & Layer	Thickness
Copper Surface Pattern	0.035 mm
FR-4	0.10 mm
Inner GND	0.018 mm
FR-4	0.30 mm
Copper Bottom GND	0.035 mm

* Line width should be designed to match 50 ohm characteristic impedance depending on PCB material and thickness.

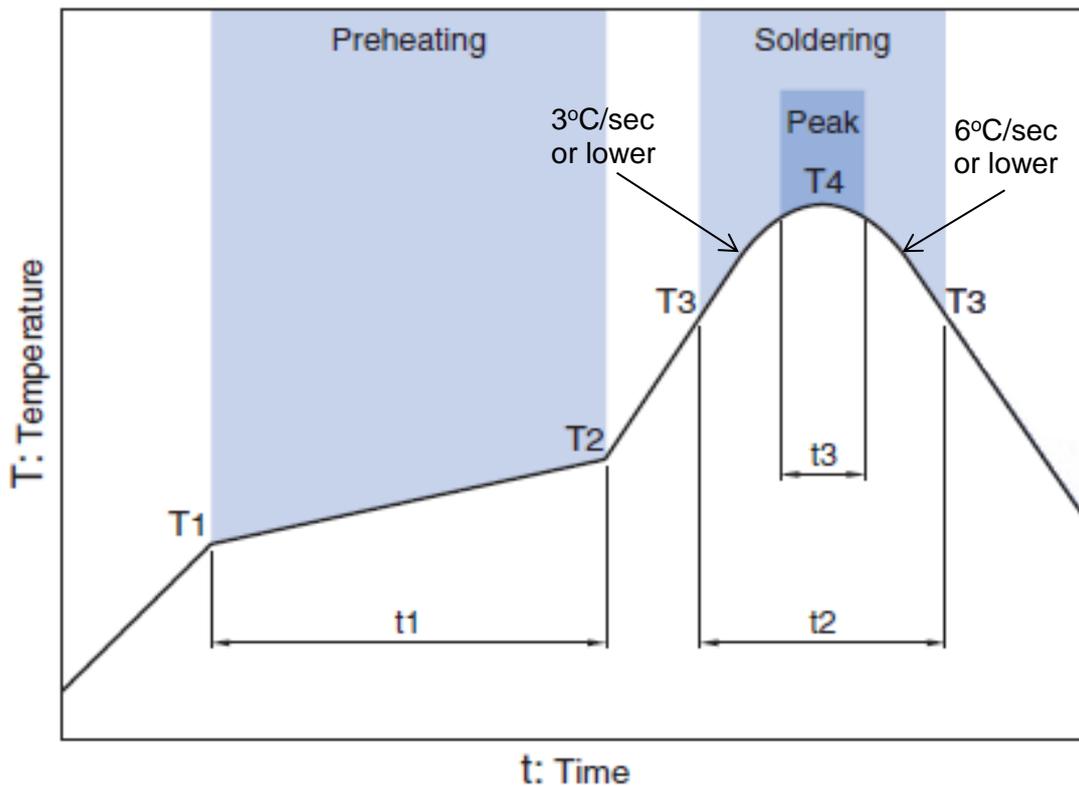
** The position of the through hole which have possibility of influence to the performance are indicated by dimension line.

ENVIRONMENT INFORMATION

RoHS Statement
RoHS Compliance

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RECOMMENDED REFLOW PROFILE



Preheating			Soldering			
			Critical zone (T3 to T4)		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3 *
150°C	200°C	60 to 120sec	217°C	60 to 120sec	240 to 260°C	30 sec Max

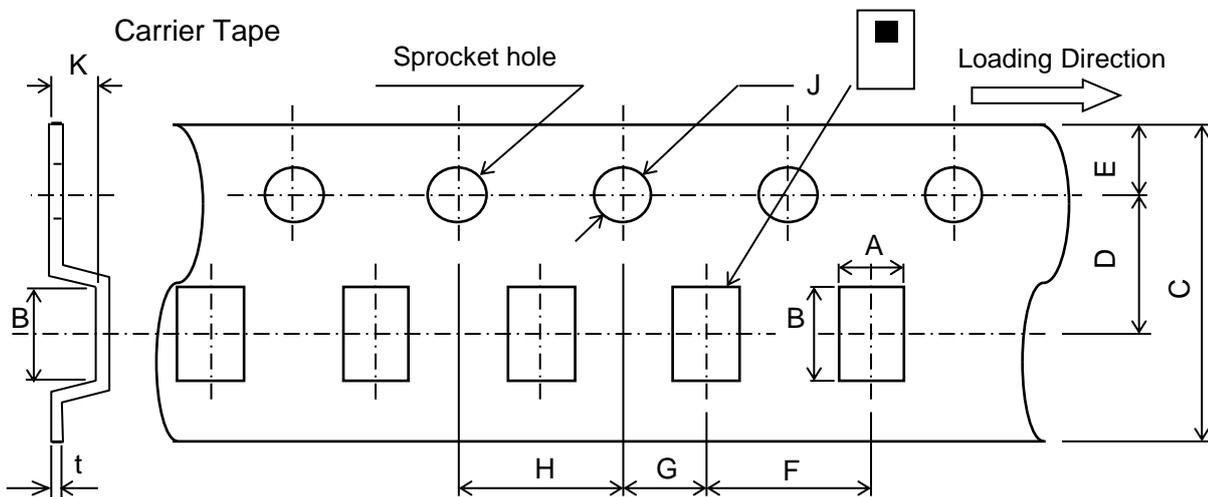
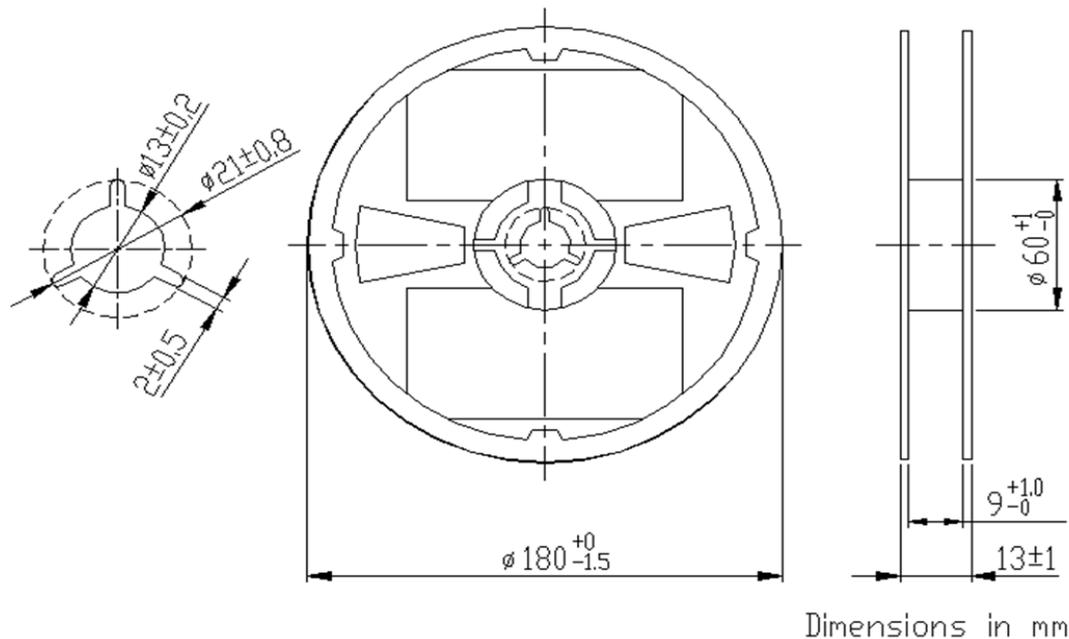
* t3 : Time within 5°C of actual peak temperature

The maximum number of reflow is 3.

Note: Lead free solder is recommended.
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

DEA165950LT-5134A1**PACKAGING STYLE**

Reel Dimensions



Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	t
1.0	1.8	8.0	3.5	1.75	4.0	2.0	4.0	1.5	0.8	0.25
+/-0.05	+/-0.05	+/-0.2	+/-0.05	+/-0.1	+/-0.1	+/-0.05	+/-0.1	+0.1/-0	MAX	+/-0.05

STANDARD PACKAGE QUANTITY**(pieces/reel)**

4,000

REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

REMINDERS

The products listed on this specification sheet are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet.

1. Aerospace/Aviation equipment
2. Transportation equipment (cars, electric trains, ships, etc.)
3. Medical equipment
4. Power-generation control equipment
5. Atomic energy-related equipment
6. Seabed equipment
7. Transportation control equipment
8. Public information-processing equipment
9. Military equipment
10. Electric heating apparatus, burning equipment
11. Disaster prevention/crime prevention equipment
12. Safety equipment
13. Other applications that are not considered general-purpose applications

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.