



Jan. 2022 Ver.3.1a
TDK Corporation

Multilayer Low Pass Filter

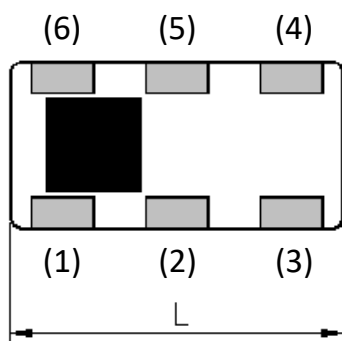
For 2647-3500MHz

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

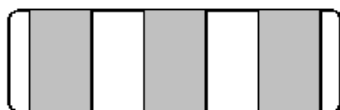
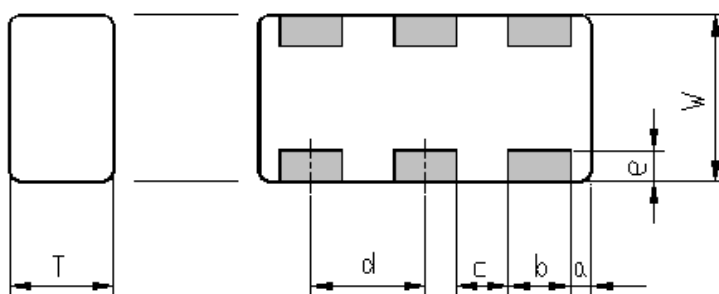
P/N: **DEA163500LT-5106C1**

DEA163500LT-5106C1**SHAPES AND DIMENSIONS**

[Top View]



[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	e
1.60	0.80	0.60	0.10	0.30	0.25	0.55	0.15
+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10	+/-0.10

Terminal functions

(1)	GND
(2)	Output Port
(3)	GND

(4)	GND
(5)	Input Port
(6)	GND

TERMINATION FINISH

Material
Sn plate

DEA163500LT-5106C1

ELECTRICAL CHARACTERISTICS

(Measurement)

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	2647 to 3500	-	0.51	0.60
Insertion Loss (dB) (-40 to +105 °C)	2647 to 3500	-	-	0.71
Return Loss@Input (dB)	2647 to 3500	10	16.9	-
Return Loss@Input (dB) (-40 to +105 °C)	2647 to 3500	10	-	-
Return Loss@Output (dB)	2647 to 3500	10	17.2	-
Return Loss@Output (dB) (-40 to +105 °C)	2647 to 3500	10	-	-
Attenuation (dB)	5294 to 6994	32	38.9	-
	7941 to 10491	27	35.4	-
	10588 to 13988	25	30.8	-
Attenuation (dB) (-40 to +105 °C)	5294 to 6994	30	-	-
	7941 to 10491	26	-	-
	10588 to 13988	23	-	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

MAXIMUM RATINGS

Parameter		TDK Spec	Conditions
Operating temperature (°C)		-40 to +105 °C	
Storage temperature (°C)		-40 to +105 °C	
Power Handling (W) *1	Frequency (MHz)		
	2647 to 3500	2	CW Duty 100%
Human Body Model : HBM	@Each Port (V)	TBD	100pF / 1500ohm
Machine Model : MM	@Each Port (V)	TBD	200pF / 0ohm
Charged Device Model : CDM	@Each Port (V)	TBD	Humidity : 60%RH max

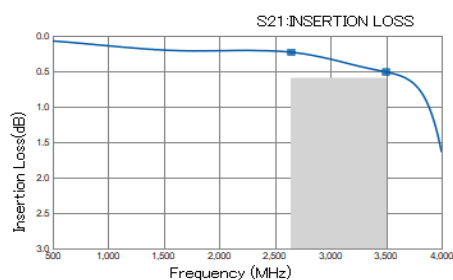
*1 : Refer to 3GPP TS 38.101-1 V15.2.0

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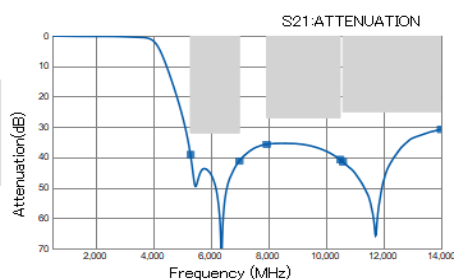
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FREQUENCY CHARACTERISTICS

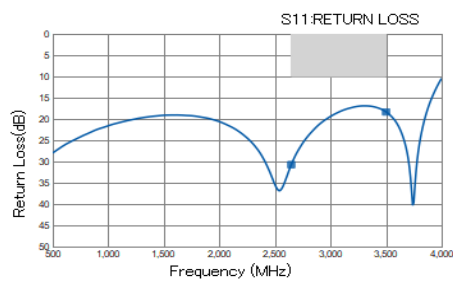
TDK Spec (Ta = +25+/-5°C)



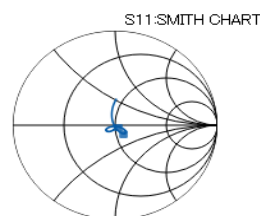
P/N	DEA163500LT-5106C1_Ver.3.1_2021.0728
Freq	
2647	0.23
3500	0.51



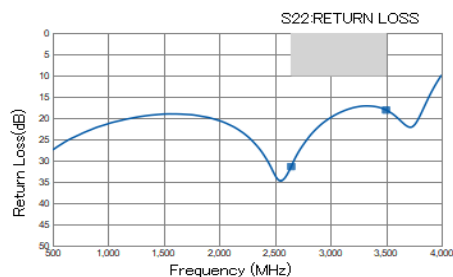
P/N	DEA163500LT-5106C1_Ver.3.1_2021.0728
Freq	
5294	39.11
6934	41.17
7941	35.69
10481	40.73
10688	41.48
13988	30.79



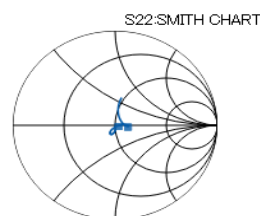
P/N	DEA163500LT-5106C1_Ver.3.1_2021.0728
Freq	
2647	30.75
3500	18.33



P/N	DEA163500LT-5106C1_Ver.3.1_2021.0728
Freq	
2647	52.4 / -1.75
3500	57.31 / -10.84



P/N	DEA163500LT-5106C1_Ver.3.1_2021.0728
Freq	
2647	31.39
3500	18.10



P/N	DEA163500LT-5106C1_Ver.3.1_2021.0728
Freq	
2647	52.67 / -0.73
3500	64.14 / -1.39

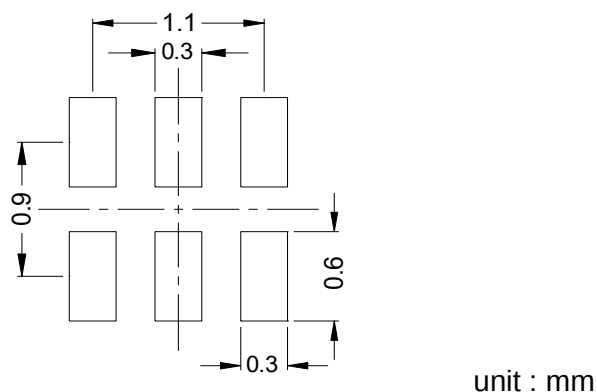
All specifications are subject to change without notice.

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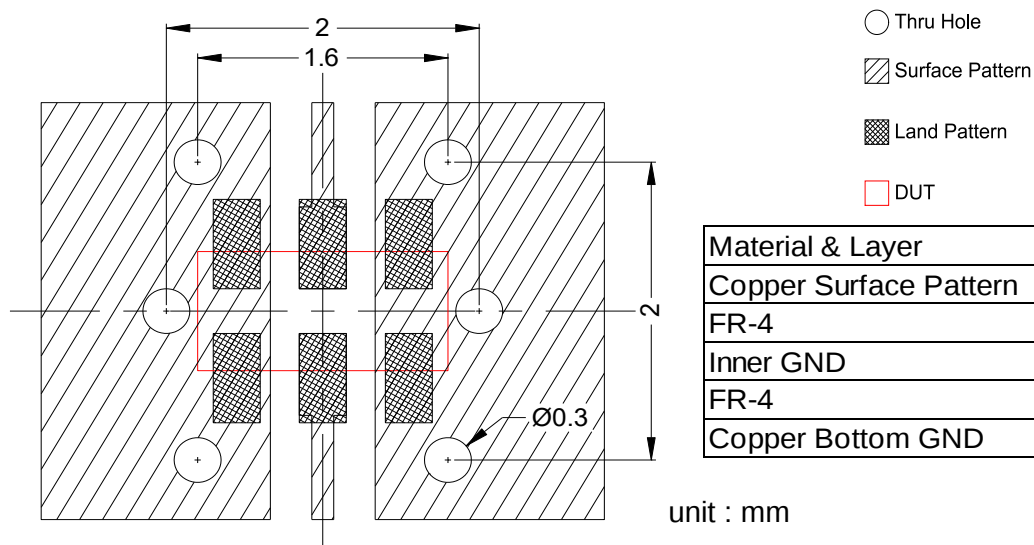
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DEA163500LT-5106C1

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.

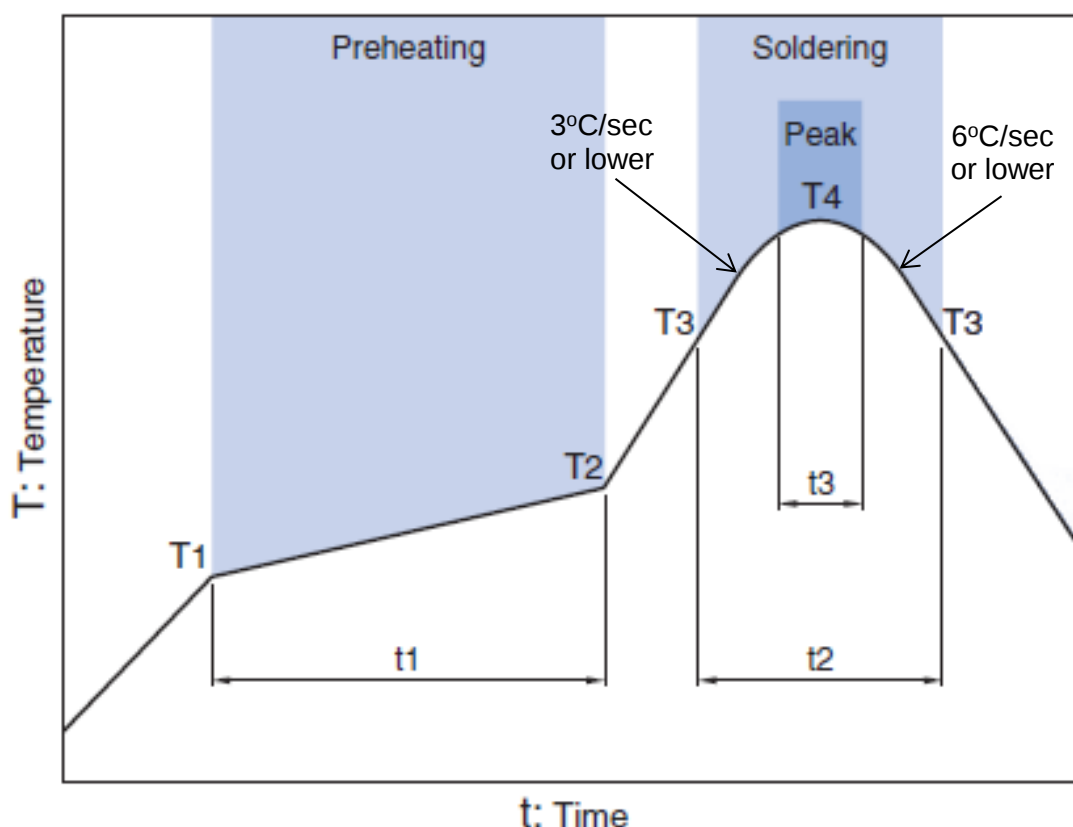
** The position of the through hole which have possibility of influence to the performance are indicated by dimension line.

ENVIRONMENT INFORMATION

RoHS Statement
RoHS Compliance

TDK Corporation

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)

GENERAL TECHNICAL INFORMATION

https://product.tdk.com/en/system/files?file=dam/doc/product/rf/rf/coupler/general_tech_info/rf_general-technical-info_02_en.pdf

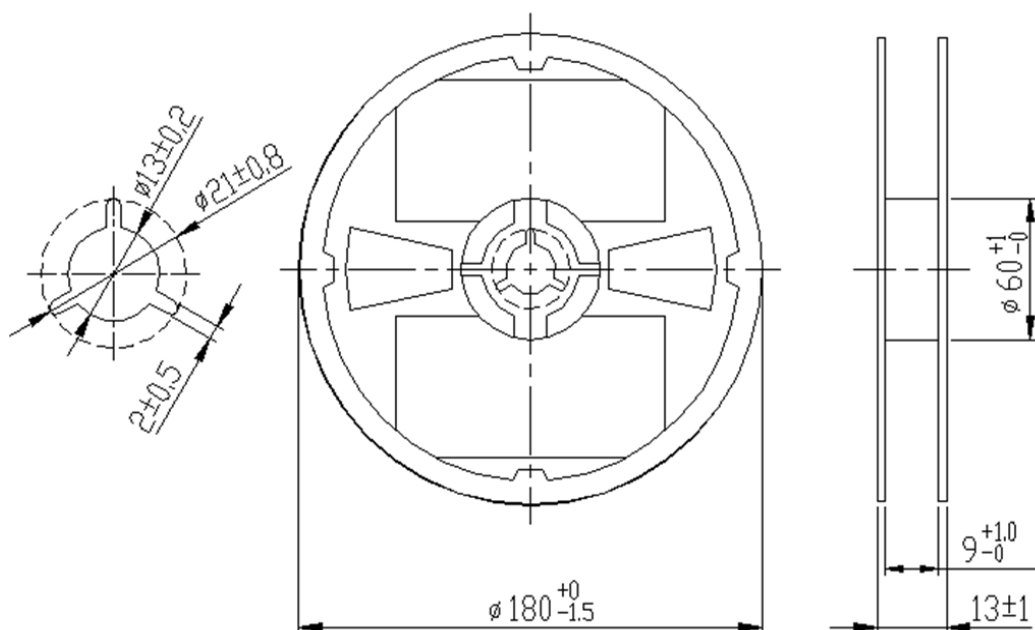
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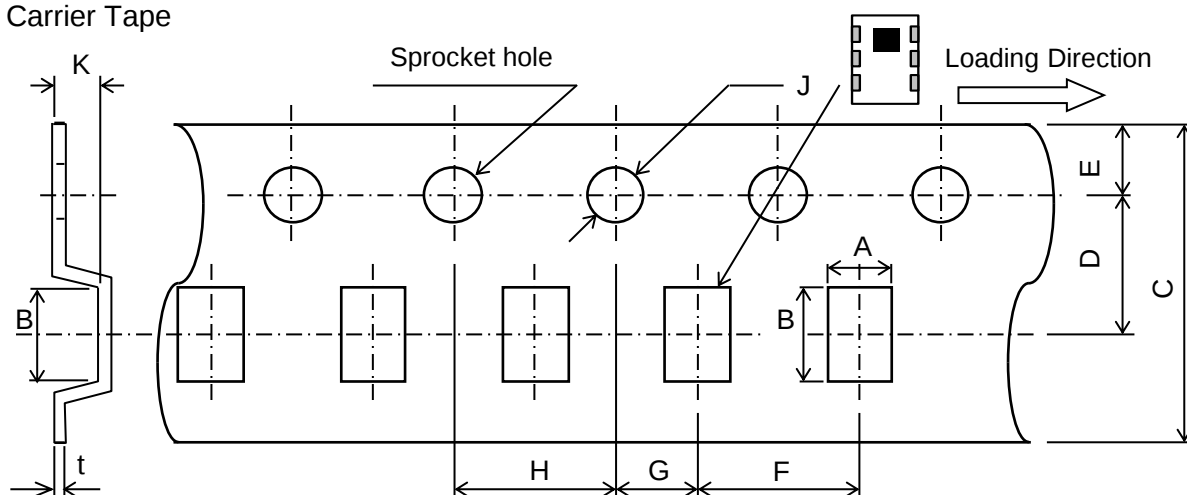
PACKAGING STYLE

Reel Dimensions



Dimensions in mm

Carrier Tape



Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	t
0.97	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	$\pm 0.1/0$	MAX	± 0.05

STANDARD PACKAGE QUANTITY (pieces/reel)

4,000

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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 catalog 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 catalog.

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

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.