



May. 2021 Ver.3.0
TDK Corporation

Multilayer Band Pass Filter

For 5GHz W-LAN

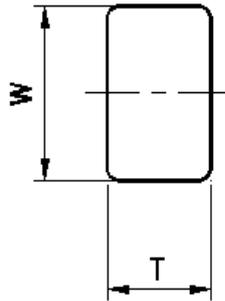
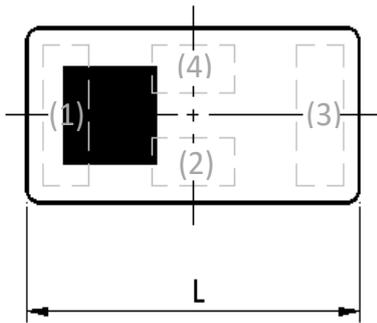
DEA Series 1.6x0.8mm [EIA 0603] TYPE

P/N: **DEA165538BT-2208F1**

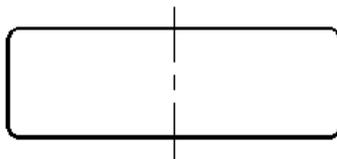
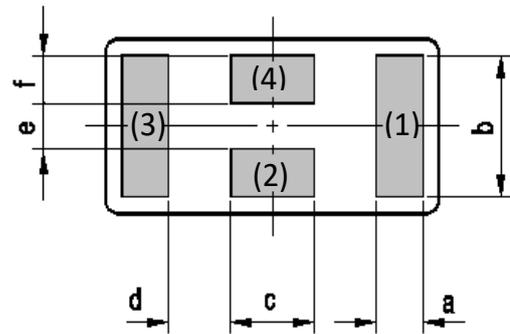
DEA165538BT-2208F1

■ SHAPES AND DIMENSIONS

[Top View]



[Bottom View]



Dimensions (mm)

L	W	T	a	b	c	d	e	f
1.60	0.80	0.65	0.23	0.65	0.40	0.30	0.21	0.22
+/-0.15	+/-0.10	Max	+/-0.05	+/-0.05	+/-0.05	+/-0.05	+/-0.05	+/-0.05

Terminal functions

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

■ TERMINATION FINISH

Material
Ag

DEA165538BT-2208F1

■ ELECTRICAL CHARACTERISTICS

(Measurement)

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	5150 to 5925	-	0.68	0.95
Insertion Loss (dB) (-40 to +90 °C)	5150 to 5925 to	-	-	1.15
VSWR	5150 to 5925	-	1.2	1.6
Attenuation (dB)	699 to 960	45	56.1	-
	960 to 1710	40	44.9	-
	1710 to 2690	37	38.5	-
	2690 to 3550	20	38.5	-
	3400 to 3600	32	38.7	-
	3600 to 3800	22	28.2	-
	3550 to 4000	12	20.8	-
	4400	6.15	9.0	-
	4000 to 4500	-	6.5	-
	6500 to 7000	-	1.7	-
	6850 to 7000	-	6.3	-
	7000 to 7400	3	9.2	-
	7400 to 9750	10	16.7	-
9750 to 10300	20	59.7	-	
10300 to 12750	35	46.7	-	
15450 to 17550	35	44.9	-	
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

■ MAXIMUM RATINGS

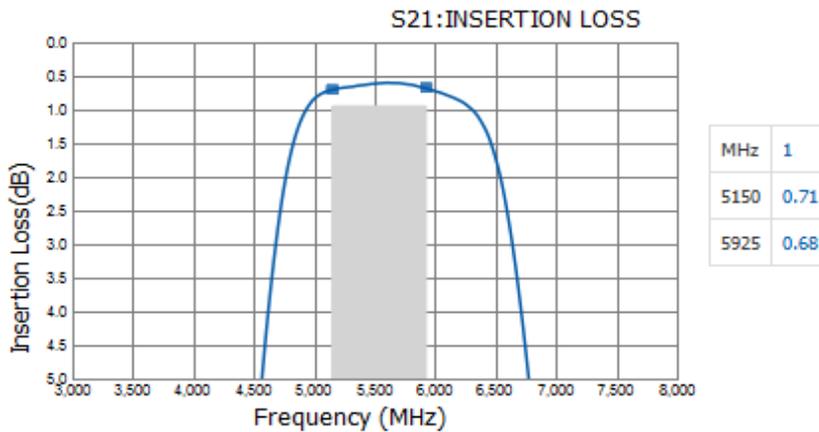
Parameter		TDK Spec	Conditions
Operating temperature (°C)		-40 to +90 °C	
Storage temperature (°C)		-40 to +90 °C	
Power Handling (W) *1	Frequency (MHz)		
	5150 to 5925	2	
Human Body Model : HBM	@Each Port (V)	+/-1000	100pF / 1500ohm
Machine Model : MM	@Each Port (V)	+/-150	200pF / 0ohm
Charged Device Model : CDM	@Each Port (V)	+/-500	Humidity : 60%RH max

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

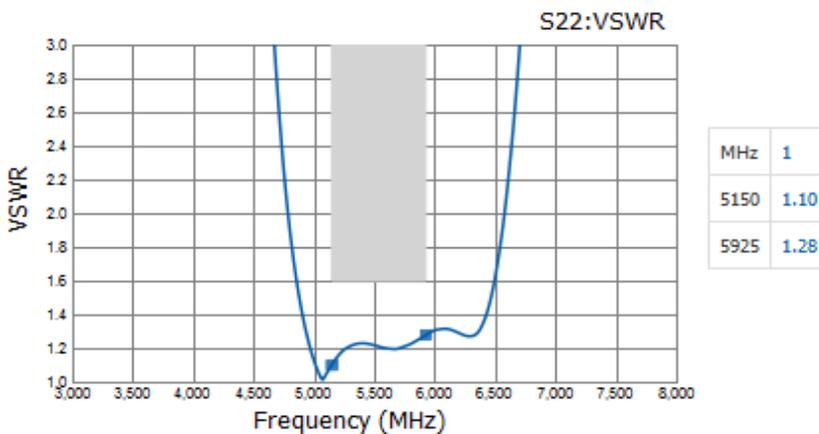
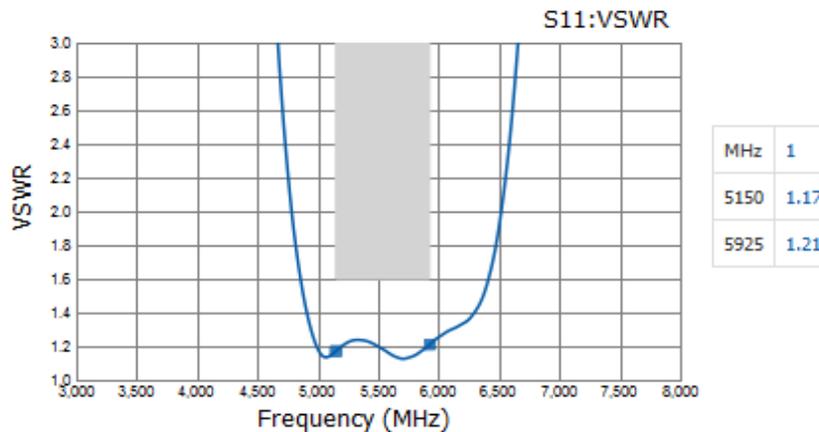
DEA165538BT-2208F1

■ FREQUENCY CHARACTERISTICS

Insertion Loss



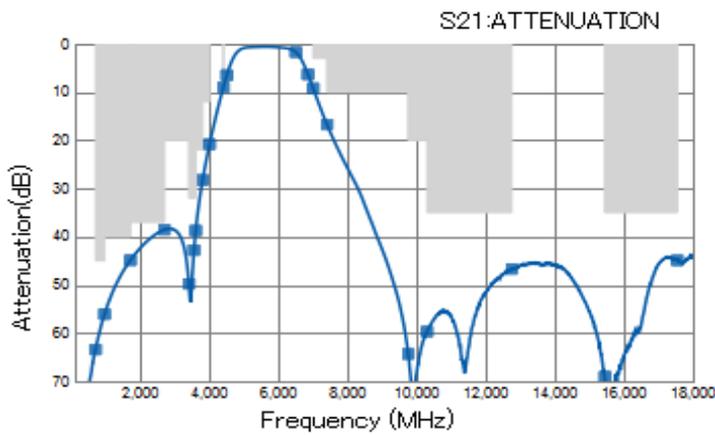
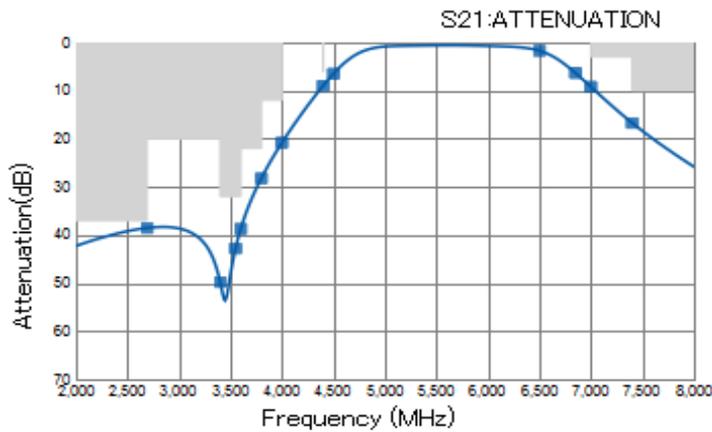
VSWR



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FREQUENCY CHARACTERISTICS

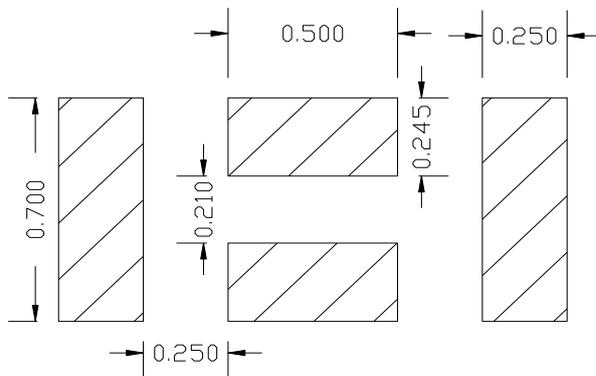
Attenuation



MHz	1
699	63.40
960	56.08
1710	44.88
2690	38.54
3400	49.76
3550	42.79
3600	38.73
3800	28.23
4000	20.83
4400	8.99
4500	6.50
6500	1.72
6850	6.34
7000	9.22
7400	16.70
9750	64.33
10300	59.69
12750	46.70
15450	69.03
17550	44.91

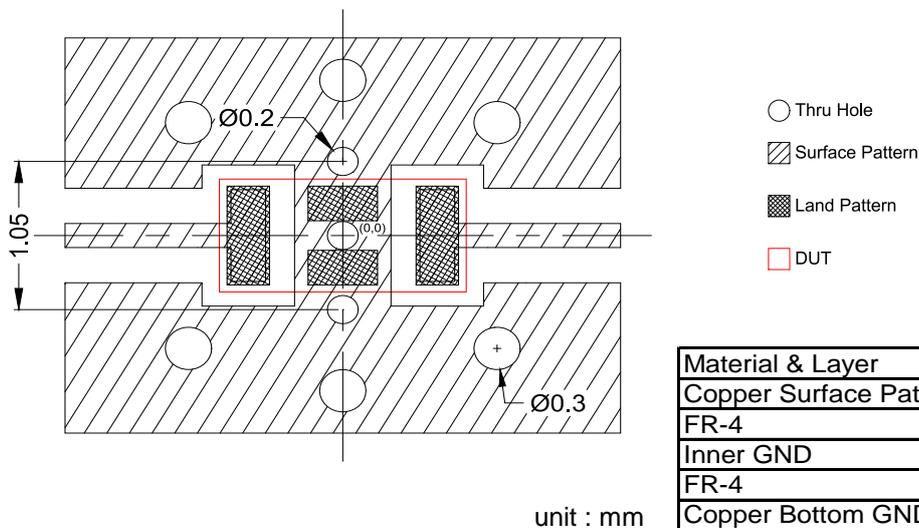
DEA165538BT-2208F1

RECOMMENDED LAND PATTERN



Unit[mm]

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

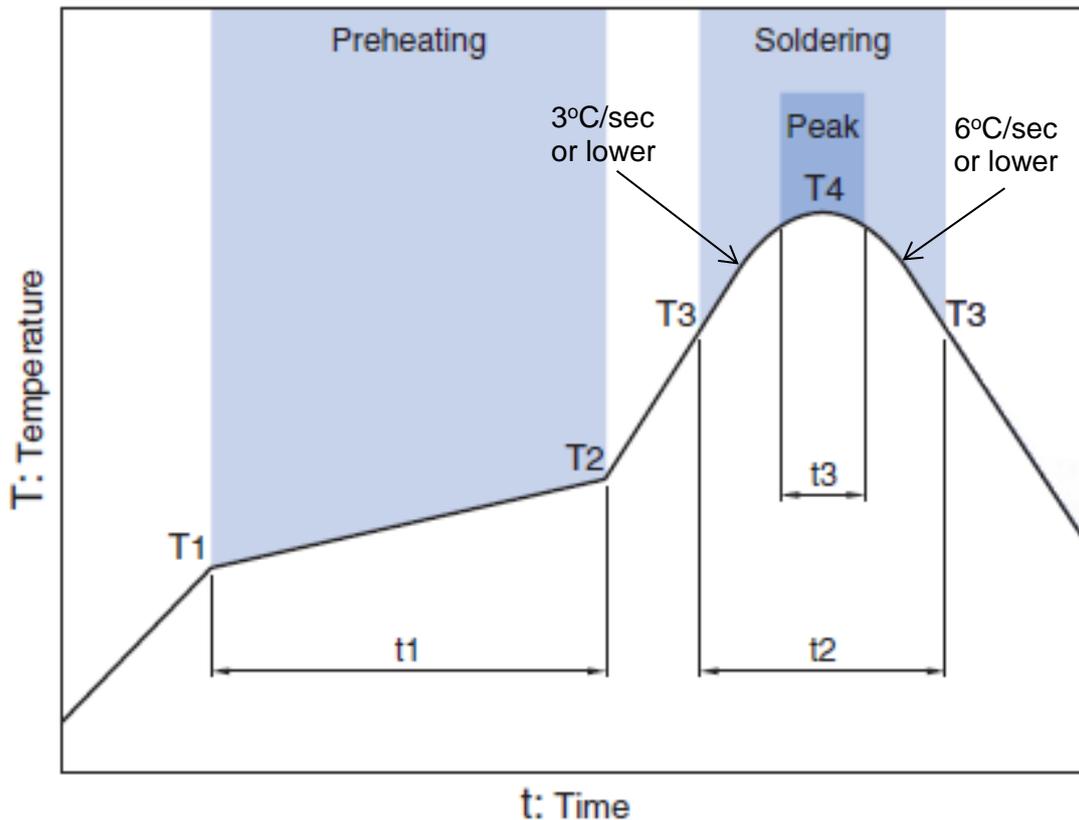
unit : mm

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

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

ENVIRONMENT INFORMATION

RoHS Statement
RoHS Compliance

DEA165538BT-2208F1**RECOMMENDED REFLOW PROFILE**

Preheating			Soldering			
Temp.		Time	Critical zone (T3 to T4)		Peak	
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

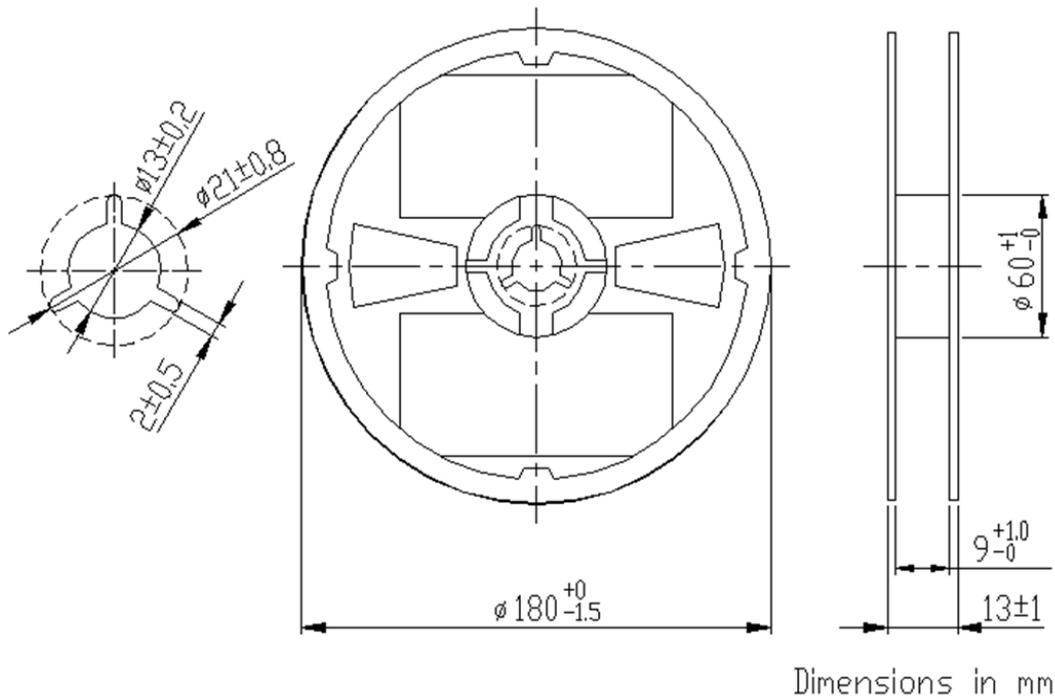
* t3 : Time within 5°C of actual peak temperature

The maximum number of reflow is 3.

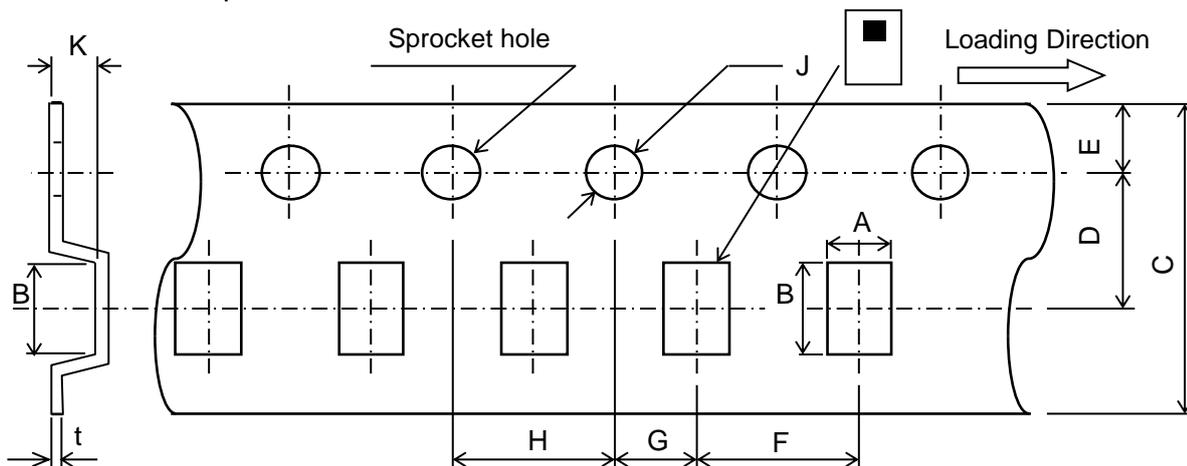
Note: Lead free solder is recommended.
Recommended solder is Sn-3.0Ag-0.5Cu. (M705 by Senju Metal Industry)

DEA165538BT-2208F1**PACKAGING STYLE**

Reel Dimensions



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	$+0.1/-0$	MAX	± 0.05

STANDARD PACKAGE QUANTITY (pieces/reel)
4,000

All specifications are subject to change without notice.

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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
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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.