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TDK Corporation

Multilayer Band Pass Filter

For WiFi 5g C-band

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

P/N: **DEA166200BT-2363A2**

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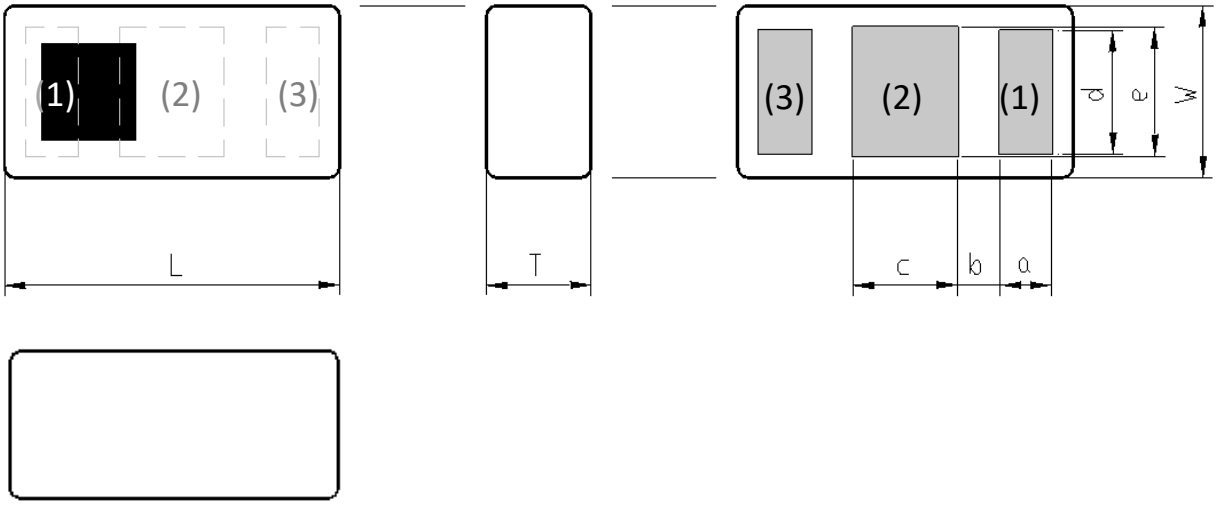
SHAPES AND DIMENSIONS



Dimensions (mm)

L	W	T	a	b	c	d	e
1.60 +/-0.10	0.80 +/-0.10	0.70 Max	0.25 +/-0.10	0.23 +/-0.10	0.40 +/-0.10	0.55 +/-0.15	0.60 +/-0.15

Terminal functions

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

TERMINATION FINISH

Material
Ag

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■ ELECTRICAL CHARACTERISTICS

(Measurement)

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Insertion Loss (dB)	5150 to 5710	-	0.68	0.90
	5710 to 5925	-	0.54	0.90
	5925 to 6425	-	0.56	0.90
	6425 to 7125	-	0.91	1.60
	7125 to 7150	-	0.95	2.00
Insertion Loss (dB) (–40 to +90 °C)	5150 to 5710	-	-	1.05
	5710 to 5925	-	-	1.00
	5925 to 6425	-	-	1.05
	6425 to 7125	-	-	1.75
	7125 to 7150	-	-	2.20
Return Loss@Input (dB)	5150 to 5925	10	17.0	-
	5925 to 6425	10	18.9	-
	6425 to 7125	10	16.5	-
	7125 to 7150	10	16.1	-
Return Loss@Output (dB)	5150 to 5925	10	16.5	-
	5925 to 6425	10	19.1	-
	6425 to 7125	10	17.4	-
	7125 to 7150	10	18.1	-
Attenuation (dB)	100 to 960	22	28.1	-
	1166 to 1249	22	26.7	-
	1427 to 1610	22	26.2	-
	1695 to 2200	22	26.3	-
	2300 to 2370	22	29.0	-
	2400 to 2483	22	29.9	-
	2496 to 2690	22	31.1	-
	3300 to 4200	17	24.9	-
	4500 to 4600	-	6.2	-
	4800 to 4900	-	1.1	-
	7250 to 7800	-	1.2	-
	7600 to 8400	-	3.5	-
	9000 to 9200	25	34.0	-
	9600 to 9800	25	35.3	-
	10300 to 11850	25	37.7	-
	11850 to 14250	10	17.0	-
Characteristic Impedance (ohm)		50 (Nominal)		

Ta = +25+/-5°C

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■ 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 7150	1	CW
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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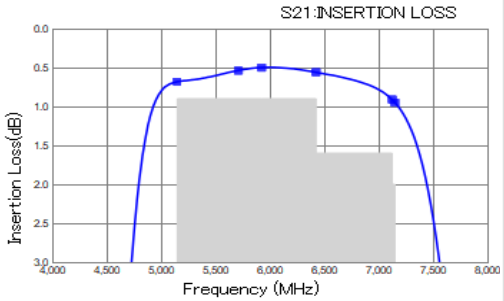
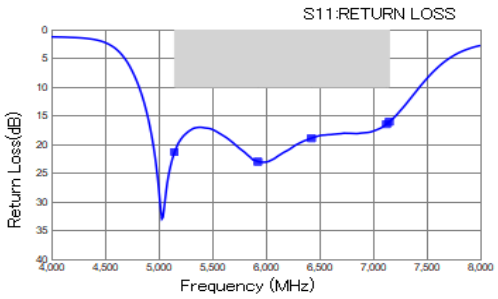
■ FREQUENCY CHARACTERISTICS

Insertion Loss



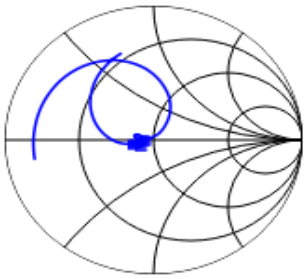
P/N Freq	DEA166200BT- 2363A2_ver_1_5_201223
5150-5710	0.68
5710-5925	0.54
5925-6425	0.56
6425-7125	0.91
7125-7150	0.95
5150	0.68
5710	0.54
5925	0.50
6425	0.56
7125	0.91
7150	0.95

Return Loss (Input Port)



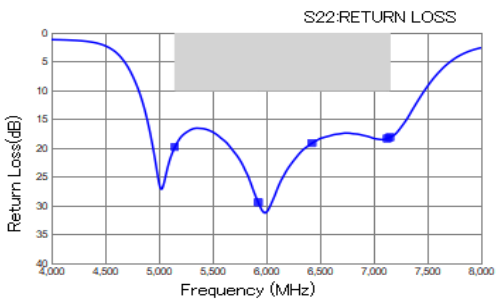
P/N Freq	DEA166200BT- 2363A2_ver_1_5_201223
5150-5925	17.01
5925-6425	18.92
6425-7125	16.45
7125-7150	16.06
5150	21.28
5925	23.00
6425	18.92
7125	16.45
7150	16.06

Smith Chart (Input Port)



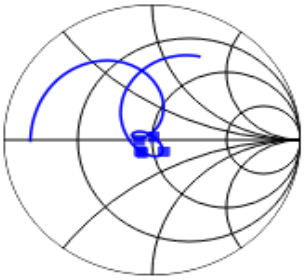
P/N Freq	DEA166200BT- 2363A2_ver_1_5_201223
5150	42.06 / 0.27
5925	43.39 / 0.06
6425	40.67 / -4.31
7125	37.06 / -2.06
7150	36.55 / -2.16

Return Loss (Output Port)



P/N Freq	DEA166200BT- 2363A2_ver_1_5_201223
5150-5925	16.54
5925-6425	19.1
6425-7125	17.39
7125-7150	18.12
5150	19.78
5925	29.40
6425	19.10
7125	18.33
7150	18.12

Smith Chart (Output Port)



P/N Freq	DEA166200BT- 2363A2_ver_1_5_201223
5150	40.72 / 0.64
5925	49.97 / 3.39
6425	57.44 / -9.37
7125	41.84 / -7.62
7150	40.86 / -6.67

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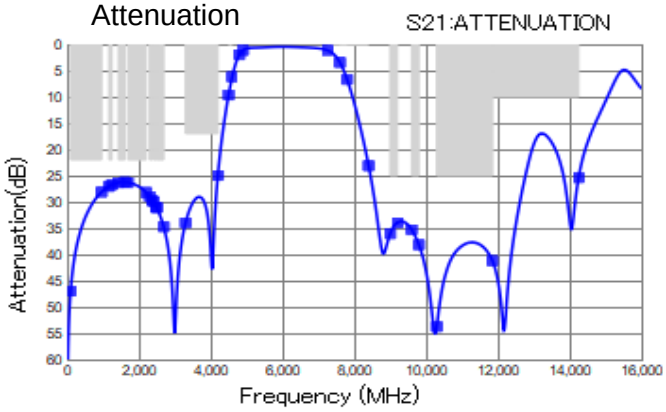
FREQUENCY CHARACTERISTICS

Attenuation



P/N Freq	DEA166200BT- 2363A2_ver1_5_201223
100-960	28.12
1166-1249	26.74
1427-1610	26.23
1695-2200	26.31
2300-2370	28.97
2400-2483	29.93
2496-2690	31.12
3300-4200	24.93
4500-4600	6.19
4800-4900	1.13
7250-7800	1.15
7600-8400	3.45
9000-9200	33.95
9600-9800	35.28
10300-11850	37.71
11850-14250	16.99
100	46.93
960	28.12
1166	27.04
1249	26.74
1427	26.33
1610	26.24
1695	26.31

2200	28.20
2300	28.97
2370	29.61
2400	29.93
2483	30.94
2496	31.12
2690	34.74
3300	33.98
4200	24.93
4500	9.62
4600	6.19
4800	1.95
4900	1.13
7250	1.15
7600	3.45
7800	6.68
8400	23.11
9000	36.05
9200	33.95
9600	35.28
9800	38.16
10300	53.72
11850	41.20
14250	25.38

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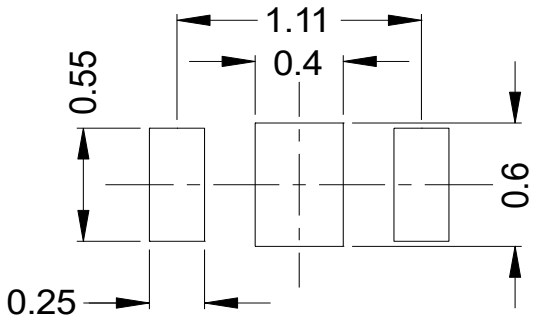
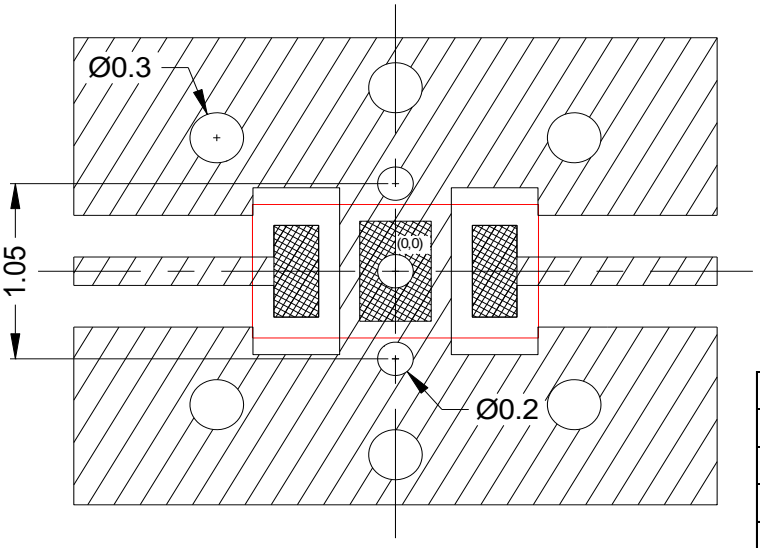
RECOMMENDED LAND PATTERN



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 throuh hole which have possibility of influence to the prerformance are indicated by dimension line.

ENVIRONMENT INFORMATION

RoHS Statement
RoHS Compliance

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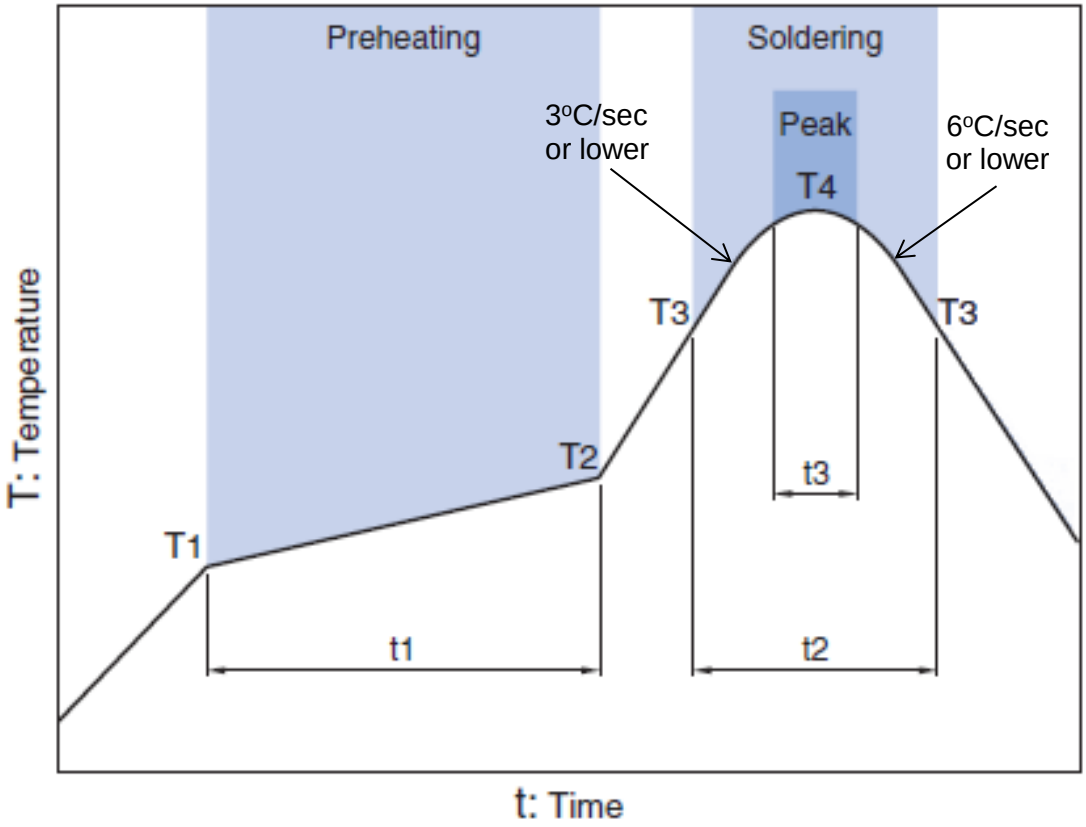
■ RECOMMENDED REFLOW PROFILE



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)

■ 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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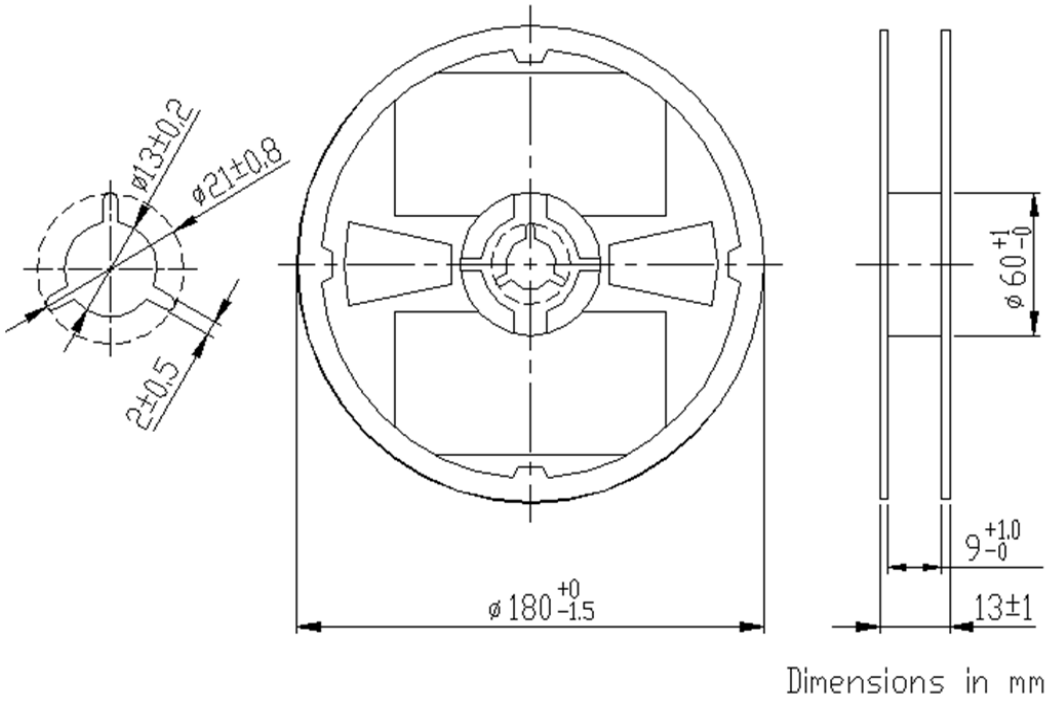
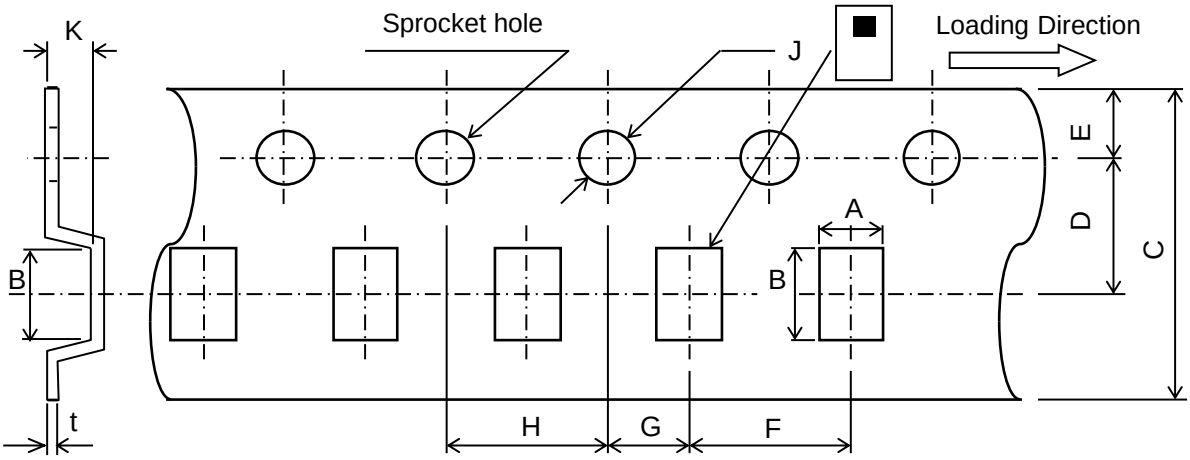
■ PACKAGING STYLE

Reel Dimensions



Dimensions in mm

Carrier Tape



Dimensions (mm)

A	B	C	D	E	F	G	H	J	K	t
0.97 +/-0.05	1.8 +/-0.05	8.0 +0.3/-0.1	3.5 +/-0.05	1.75 +/-0.1	4.0 +/-0.1	2.0 +/-0.05	4.0 +/-0.1	1.5 +0.1/-0	0.9 MAX	0.25 +/-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.