

Sep. 2020 Ver.3.0N TDK Corporation

Multilayer Band Pass Filter

MMC Series 3.5 × 3.5 mm

TYPE

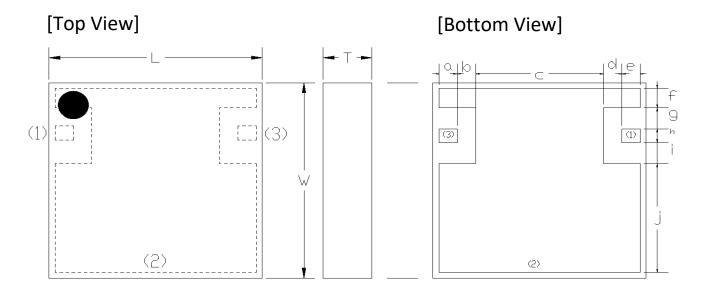
P/N: MMCB3528G0T-0041A1



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MMCB3528G0T-0041A1

SHAPES AND DIMENSIONS



Dimensions (mm)

		1010110	\									
L	W	T	а	b	С	d	е	f	g	h	i	j
3.50	3.50	0.80	0.30	0.30	2.10	0.30	0.30	0.35	0.375	0.25	0.375	1.95
+/-0.15	+/-0.15	+/-0.10	+0.1/-0.05	+0.1/-0.05	+/-0.15	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+/-0.15

Terminal functions

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



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ELECTRICAL CHARACTERISTICS

(Measurement)

Insertion Loss (dB) 26.5 to 29.5 - 1.21 2.0 26 to 30 - 1.74 3.0 10 10 105 °C 26 to 30 - 2.4 (-40 to +105 °C) 26 to 30 - 1.50 1.5 VSWR 26 to 30 - 1.50 1.5 VSWR 26 to 30 - 1.50 1.5 (-40 to +105 °C) 26 to 30 - 1.5 Attenuation (dB) 0.05 to 6 30 78.9 - 17.1 to 20.1 30 67.4 - 21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - Attenuation (dB) 0.05 to 6 30 - (-40 to +105 °C) 17.1 to 20.1 30 - 21.8 to 24.3 50 - 24.3 to 24.8 20 - 33 to 37 25 - Amplitude ripple (dB) 26.5 to 29.5 - 0.23 1 Group delay ripple(ps) 26.5 to 29.5 - 119 25 Group delay ripple (ps) 26.5 to 29.5 - 29 (-40 to +105 °C) 26 to 30 - 88 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to 29.5 - 90 Group delay ripple variation(ps) 26.5 to	Parameter	Eroguo	nev	(CH-)	T	DK Spec		
26 to 30 - 1.74 3.0	Farailletei	. ,			Min.	Тур.	Max.	
Insertion Loss (dB) (-40 to +105 °C) 26 to 30 - 4.1 VSWR 26 to 30 - 1.50 1.9 VSWR 26 to 30 - 1.50 1.9 (-40 to +105 °C) Attenuation (dB) 0.05 to 6 30 78.9 - 1.1 21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - 24.3 to 24.8 35 47.0 - 21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - 24.3 to 24.8 20 - 25.5 to 29.5 - 0.23 1 26 to 30 - 0.76 2 26 to 30 - 301 700 Group delay ripple(ps) 26.5 to 29.5 - 119 250 Group delay ripple(ps) 26.5 to 29.5 - 29.5 - 29.5 (-40 to +105 °C) 26 to 30 - 301 700 Group delay ripple variation(ps) 26.5 to 29.5 - 90.5 Group delay ripple variation(ps)	Insertion Loss (dB)	26.5	to	29.5	-	1.21	2.00	
(-40 to +105 °C) 26 to 30 - 1.50 1.9 VSWR 26 to 30 - 1.50 1.9 VSWR 26 to 30 - 1.50 1.9 (-40 to +105 °C) 1.9 Attenuation (dB) 0.05 to 6 30 78.9 - 1.9 17.1 to 20.1 30 67.4 - 21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - 1.9 Attenuation (dB) 0.05 to 6 30 - 30 - 1.0 (-40 to +105 °C) 17.1 to 20.1 30 - 2.0 21.8 to 24.3 50 - 24.3 50 - 24.3 to 24.8 20 - 33 to 37 25 - 33 to 24.8 20 - 33 to 37 25 - 33 to 24.8 20 - 33 to 37 25 - 33 to 24.8 20 - 33 to 37 25 - 33 to 24.8 20 - 33 to 37 25 - 33 to 24.8 20 - 33 to 37 25 - 34 to 24.8 20 to 30 - 30.76 20 to 30 - 30.70 to 30 t		26	to	30	ı	1.74	3.00	
VSWR 26 to 30 - 1.50 1.9 VSWR 26 to 30 - 1.9 (-40 to +105 °C) 0.05 to 6 30 78.9 - 1.9 Attenuation (dB) 0.05 to 6 30 78.9 - 1.9 21.8 to 24.3 50 54.6 - 24.3 50 54.6 - 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - Attenuation (dB) 0.05 to 6 30 - - (-40 to +105 °C) 17.1 to 20.1 30 - - 21.8 to 24.3 50 - - 24.3 to 24.8 20 - - 33 to 37 25 - - Amplitude ripple (dB) 26.5 to 29.5 - 0.23 1 26 to 30 - 0.76 2 2 Group delay ripple(ps) 26.5 to 29.5 - 119 25 26 to 30 - 301 70 Group delay ripple (ps) 26.5 to 29.5 - 29.5 - (-40 to +105 °C) 26 to 30 - 88 Group delay ripple variation(ps) 26.5 to </td <td>Insertion Loss (dB)</td> <td>26.5</td> <td>to</td> <td>29.5</td> <td>ı</td> <td></td> <td>2.40</td>	Insertion Loss (dB)	26.5	to	29.5	ı		2.40	
VSWR (-40 to +105 °C) Attenuation (dB) 0.05 to 6 30 78.9 - 17.1 to 20.1 30 67.4 - 21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - Attenuation (dB) (-40 to +105 °C) 17.1 to 20.1 30 - 33 to 37 27 32.3 - Attenuation (dB) (-40 to +105 °C) 17.1 to 20.1 30 - 21.8 to 24.3 50 - 24.3 to 24.8 20 - 33 to 37 25 - Amplitude ripple (dB) 26.5 to 29.5 - 0.23 1 26 to 30 - 0.76 2 Group delay ripple(ps) 26.5 to 29.5 - 119 250 26 to 30 - 301 700 Group delay ripple(ps) (-40 to +105 °C) 26 to 30 - 886 Group delay ripple variation(ps) 26.5 to 29.5 - 90	(–40 to +105 °C)	26	to	30	ı		4.10	
(-40 to +105 °C) 0.05 to 6 30 78.9 - Attenuation (dB) 0.05 to 20.1 30 67.4 - 21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - Attenuation (dB) 0.05 to 6 30 - (-40 to +105 °C) 17.1 to 20.1 30 - 21.8 to 24.3 50 - - 24.3 to 24.8 20 - - 24.3 to 24.8 20 - - 24.3 to 29.5 - 0.23 1 - Amplitude ripple (dB) 26.5 to 29.5 - 0.23 1 - Group delay ripple(ps) 26.5 to 29.5 - 119 25 26 to 30 - 301 70 - - Group delay ripple(ps) 26.5 to 29.5 - 29.5 - 29 - (-40 to +105 °C) 26 to 30 - 886 Group delay ripple variation(ps) 26.5 to 29.5 - 90	VSWR	26	to	30	1	1.50	1.92	
Attenuation (dB) 0.05 to 6 30 78.9 - 17.1 to 20.1 30 67.4 - 21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - Attenuation (dB) (-40 to +105 °C) Amplitude ripple (dB) Group delay ripple(ps) Group delay ripple(ps) (-40 to +105 °C) 20.05 to 6 30 - 21.8 to 24.3 50 - 24.3 to 24.8 20 - 33 to 37 25 - 24.3 to 24.8 20 - 33 to 37 25 - 26.5 to 29.5 - 0.23 1 26 to 30 - 0.76 2 27 32.3 - 28 to 29.5 - 29.5	VSWR	26	to	30	-		1.92	
17.1 to 20.1 30 67.4 -	(–40 to +105 °C)							
21.8 to 24.3 50 54.6 - 24.3 to 24.8 35 47.0 - 33 to 37 27 32.3 - Attenuation (dB) (-40 to +105 °C) Amplitude ripple (dB) Group delay ripple(ps) (-40 to +105 °C) 21.8 to 24.3 50 - 24.3 to 24.8 20 - 33 to 37 25 - 26 to 30 - 0.76 2 Group delay ripple(ps) (-40 to +105 °C) Group delay ripple(ps) (-40 to +105 °C) Group delay ripple variation(ps) Group delay ripple variation(ps) 26.5 to 29.5 - 2	Attenuation (dB)	0.05	to	6	30	78.9	-	
24.3 to 24.8 35 47.0 -33 to 37 27 32.3 -44 tenuation (dB)		17.1	to	20.1	30	67.4	-	
Attenuation (dB) (-40 to +105 °C) Amplitude ripple (dB) Group delay ripple(ps) (-40 to +105 °C) Attenuation (dB) (0.05 to 6 30		21.8	to	24.3	50	54.6	-	
Attenuation (dB) (-40 to +105 °C) Amplitude ripple (dB) Group delay ripple(ps) Group delay ripple(ps) (-40 to +105 °C) 20.05 to 6 30		24.3	to	24.8	35	47.0	-	
(-40 to +105 °C)		33	to	37	27	32.3	-	
21.8 to 24.3 50	Attenuation (dB)	0.05	to	6	30		-	
24.3 to 24.8 20	(–40 to +105 °C)	17.1	to	20.1	30		-	
33 to 37 25		21.8	to	24.3	50		-	
Amplitude ripple (dB) 26.5 to 29.5 - 0.23 1 26 to 30 - 0.76 2 Group delay ripple(ps) 26.5 to 29.5 - 119 256 26 to 30 - 301 706 Group delay ripple(ps) 26.5 to 29.5 - 296 (-40 to +105 °C) 26 to 30 - 886 Group delay ripple variation(ps) 26.5 to 29.5 - 90		24.3	to	24.8	20		-	
26 to 30 - 0.76 2 Group delay ripple(ps) 26.5 to 29.5 - 119 250 26 to 30 - 301 700 Group delay ripple(ps) 26.5 to 29.5 - 290 (-40 to +105 °C) 26 to 30 - 880 Group delay ripple variation(ps) 26.5 to 29.5 - 90		33	to	37	25		-	
Group delay ripple(ps) 26.5 to 29.5 - 119 25.5 to 26 to 30 - 301 70.0 to Group delay ripple(ps) 26.5 to 29.5 - 29.5 - 29.5 to (-40 to +105 °C) 26 to 30 - 88.0 to Group delay ripple variation(ps) 26.5 to 29.5 - 90.0 to	Amplitude ripple (dB)	26.5	to	29.5	-	0.23	1	
26 to 30 - 301 700 Group delay ripple(ps) 26.5 to 29.5 - 290 (-40 to +105 °C) 26 to 30 - 880 Group delay ripple variation(ps) 26.5 to 29.5 - 90		26	to	30	ı	0.76	2	
Group delay ripple(ps) 26.5 to 29.5 - 29.6 (-40 to +105 °C) 26 to 30 - 88.6 Group delay ripple variation(ps) 26.5 to 29.5 - 90.6	Group delay ripple(ps)	26.5	to	29.5	-	119	250	
(-40 to +105 °C) 26 to 30 - 886 Group delay ripple variation(ps) 26.5 to 29.5 - 90		26	to	30	•	301	700	
Group delay ripple variation(ps) 26.5 to 29.5 - 90	Group delay ripple(ps)	26.5	to	29.5	-		290	
	(–40 to +105 °C)	26	to	30	-		880	
from +105 to -40 °C 26 to 30 - 38	Group delay ripple variation(ps)	26.5	to	29.5	-		90	
	from +105 to -40 °C	26	to	30	•		380	
Group delay ripple variation(ps) 26.5 to 29.5 - 50	Group delay ripple variation(ps)	26.5	to	29.5	-		50	
from +105 to +25 °C 26 to 30 - 16	from +105 to +25 °C	26	to	30	-		160	
Group delay ripple variation(ps) 26.5 to 29.5 - 50	Group delay ripple variation(ps)	26.5	to	29.5	-		50	
from +25 to -40 °C 26 to 30 - 240	from +25 to -40 °C	26	to	30	-		240	
Characteristic Impedance (ohm) 50 (Nominal)	Characteristic Impedance (ohm)				50	(Nomi	nal)	

 $Ta = +25 + /-5 ^{\circ}C$

MAXIMUM RATINGS

Parameter	TDK S	Spec
	Min.	Max.
Operating temperature (°C)	-40 to +	105 °C
Storage temperature (°C)	-40 to +	105 °C
Power Handling (W)	-	1

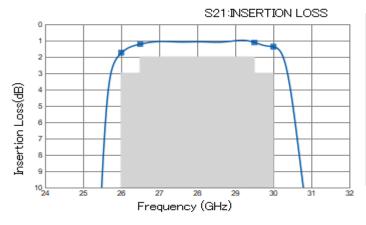
Ambient temperature: +25+/-5°C



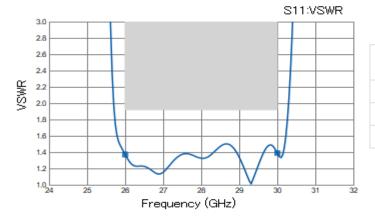
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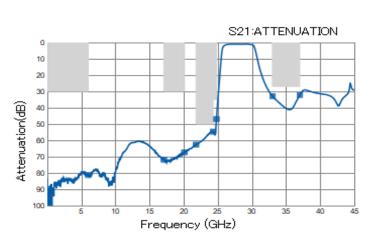
FREQUENCY CHARACTERISTICS



Ver_2_0_N
1.21
1.74
1.74
1.21
1.11
1.37



P/N Freq	Ver_2_0_N
26-30	1.5
26	1.37
30	1.39



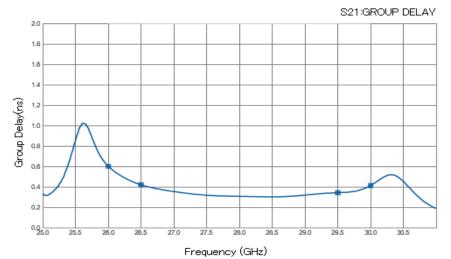
P/N Freq	Ver_2_0_N			
0.05-6	78.86			
17.1-20.1	67.35			
21.8-24.3	54.57			
243-248	46.95			
33-37	32.26			
0.05	89.83			
6	81.25			
17.1	71.89 67.35			
20.1				
21.8	62.63			
24.3	54.67			
24.8	46.95			
33	32.92			
37	32.26			



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■ FREQUENCY CHARACTERISTICS



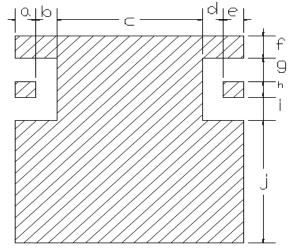
P/N Freq	Ver_2_0_N
26.5-29.5	0.119 max0.419 min:0.3
26-30	0301 max0.601 min:03
26	103.0
26.5	0.419
29.5	0.341
30	0.411



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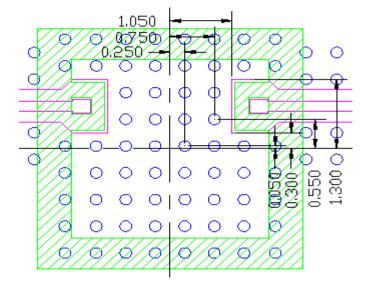
RECOMMENDED LAND PATTERN



Unit:mm

а	b	С	d	е	f	g	h	i	j
0.30	0.30	2.10	0.30	0.30	0.35	0.375	0.25	0.375	1.95
+0.1/-0.05	+0.1/-0.05	+/-0.15	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+0.1/-0.05	+/-0.15

EVALUATION BOARD







Resist

Material & Layer	Thickness	
Top Resist	-	
Copper Surface Pattern	0.035 mm	
Megtron7(R-5785(N))	0.089 mm	
Copper inner GND	0.035 mm	
Megtron7(R-5680(N))	0.3 mm	
Megtron7(R-5785(N))	0.3 11111	
Copper Bottom GND	0.035 mm	

Please make sure to place Thru hole to connect under layer GND at your PCB similar with TDK EVB drawing. If you have any concern about your PCB design, please do not hesitate to contact TDK.

■ ENVIROMENT INFORMATION

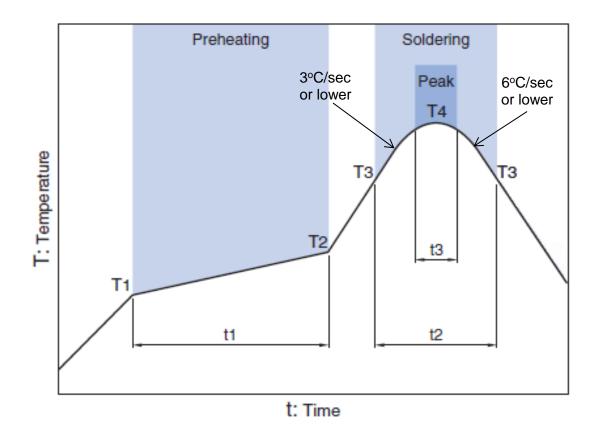
RoHS Statement RoHS Compliance



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RECOMMENDED REFLOW PROFILE



	Preheating		ating		Sold	ering	
Field		Frene	aung	Critical zon	e (T3 to T4)	Pe	ak
	Ter	np.	Time	Temp.	Time	Temp.	Time
1	Γ1	T2	t1	T3	t2	T4	t3 *
15	0°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)

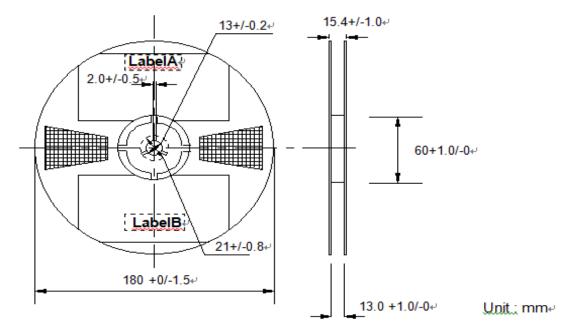


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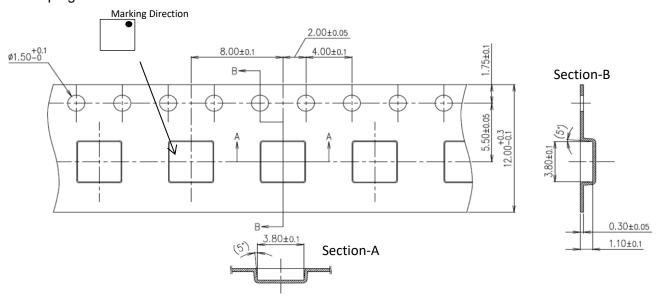
PACKAGING STYLE

Reel Dimensions



Taping Dimensions

Dimension in mm



STANDARD PACKAGE QUANTITY
(pieces/reel)
1,500



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.