

## ■ Minimum Quantity Guide

Part Number		Dimensions (mm)			Quantity (pcs.)					
					ø180mm Reel		ø330mm Reel		Bulk Case	Bulk Bag
Packaging Code		L	W	T	Paper Tape	Embossed Tape	Paper Tape	Embossed Tape		
For General Purpose	GRM02	0.4	0.2	0.2	20,000 <sup>1)</sup>	40,000 <sup>1)</sup>	-	-	-	1,000
	GRM03	0.6	0.3	0.3	15,000	-	50,000	-	-	1,000
	GRM15	1.0	0.5	0.25/0.3	10,000	-	50,000	-	-	1,000
				0.5	10,000	-	50,000	-	50,000	1,000
	GRM18	1.6	0.8	0.5	4,000	-	10,000	-	-	1,000
				0.8	4,000	-	10,000	-	15,000 <sup>2)</sup>	1,000
	GRM21	2.0	1.25	0.6	4,000	-	10,000	-	10,000	1,000
				0.85	4,000	-	10,000	-	-	1,000
				1.0/1.25	-	3,000	-	10,000	-	5,000 <sup>2)</sup>
	GRM31	3.2	1.6	0.6/0.85	4,000	-	10,000	-	-	1,000
				1.15	-	3,000	-	10,000	-	1,000
				1.6	-	2,000	-	6,000	-	1,000
	GRM32	3.2	2.5	0.85	4,000	-	10,000	-	-	1,000
				1.15	-	3,000	-	10,000	-	1,000
				1.35	-	2,000	-	8,000	-	1,000
				1.6	-	2,000	-	6,000	-	1,000
	GRM43	4.5	3.2	1.8/2.0	-	1,000	-	4,000	-	1,000
				2.5	-	500	-	2,000	-	1,000
				2.8	-	500	-	1,500	-	500
				1.15	-	1,000	-	5,000	-	1,000
	GRM55	5.7	5.0	1.35/1.6	-	1,000	-	4,000	-	1,000
				1.8/2.0	-	500	-	2,000	-	500
				2.5	-	500	-	2,000	-	500
	High Power Type	GJM03	0.6	0.3	0.3	15,000	-	50,000	-	-
GJM15		1.0	0.5	0.5	10,000	-	50,000	-	50,000	1,000
High Frequency	QQM18	1.6	0.8	0.7/0.8	4,000	-	10,000	-	-	1,000
	QQM21	2.0	1.25	0.85	4,000	-	10,000	-	-	1,000
	ERB18	1.6	0.8	0.9 max.	4,000	-	10,000	-	-	1,000
	ERB21	2.0	1.25	1.35 max.	-	3,000	-	10,000	-	1,000
	ERB32	3.2	2.5	1.7 max.	-	2,000	-	8,000	-	1,000
Microchip	GMA0D	0.38	0.38	0.3	-	-	-	-	-	400 <sup>3)</sup>
	GMA05	0.5	0.5	0.35	-	-	-	-	-	400 <sup>3)</sup>
	GMA08	0.8	0.8	0.5	-	-	-	-	-	400 <sup>3)</sup>
	GMD03	0.6	0.3	0.3	15,000	-	50,000	-	-	1,000
	GMD15	1.0	0.5	0.5	10,000	-	50,000	-	-	1,000
Array	GNM0M	0.9	0.6	0.45	10,000	-	50,000	-	-	1,000
	GNM1M	1.37	1.0	0.5/0.6/0.8	4,000	-	10,000	-	-	1,000
	GNM21	2.0	1.25	0.5/0.6/0.85	4,000	-	10,000	-	-	1,000
	GNM31	3.2	1.6	0.8/0.85 1.0/1.15	4,000 -	- 3,000	- -	10,000 10,000	- -	1,000 1,000
Low ESL	LLL15	0.5	1.0	0.3	10,000 <sup>4)</sup>	-	50,000 <sup>4)</sup>	-	-	1,000
	LLL18	0.8	1.6	0.5	-	4,000	-	10,000	-	1,000
				0.5/0.6	-	4,000	-	10,000	-	1,000
	LLL21	1.25	2.0	0.85	-	3,000	-	10,000	-	1,000
				0.5/0.7	-	4,000	-	10,000	-	1,000
	LLL31	1.6	3.2	1.15	-	3,000	-	10,000	-	1,000
				0.5	-	4,000	-	10,000	-	1,000
	LLA18	1.6	0.8	0.5	-	4,000	-	10,000	-	1,000
	LLA21	2.0	1.25	0.5	-	4,000	-	10,000	-	1,000
				0.85	-	3,000	-	10,000	-	1,000
	LLA31	3.2	1.6	0.5	-	4,000	-	10,000	-	1,000
				0.85	-	3,000	-	10,000	-	1,000
LLM21	2.0	1.25	0.5	-	4,000	-	10,000	-	1,000	
LLM31	3.2	1.6	0.5	-	4,000	-	10,000	-	1,000	

1) 8mm width 2mm pitch Paper Taping. 4mm width 1mm pitch Embossed Taping.

2) There are parts number without bulk case.

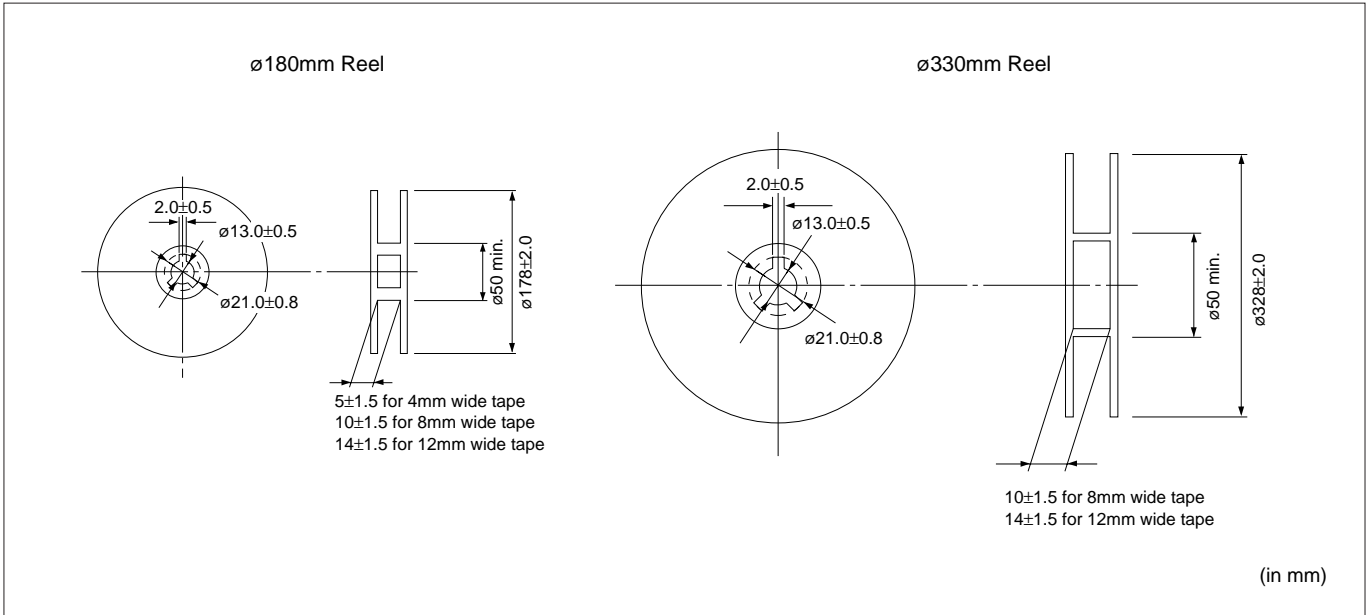
3) Tray

4) LLL15: ø180mm Reel Paper Taping Packaging Code: E, ø330mm Reel Paper Taping Packaging Code: F

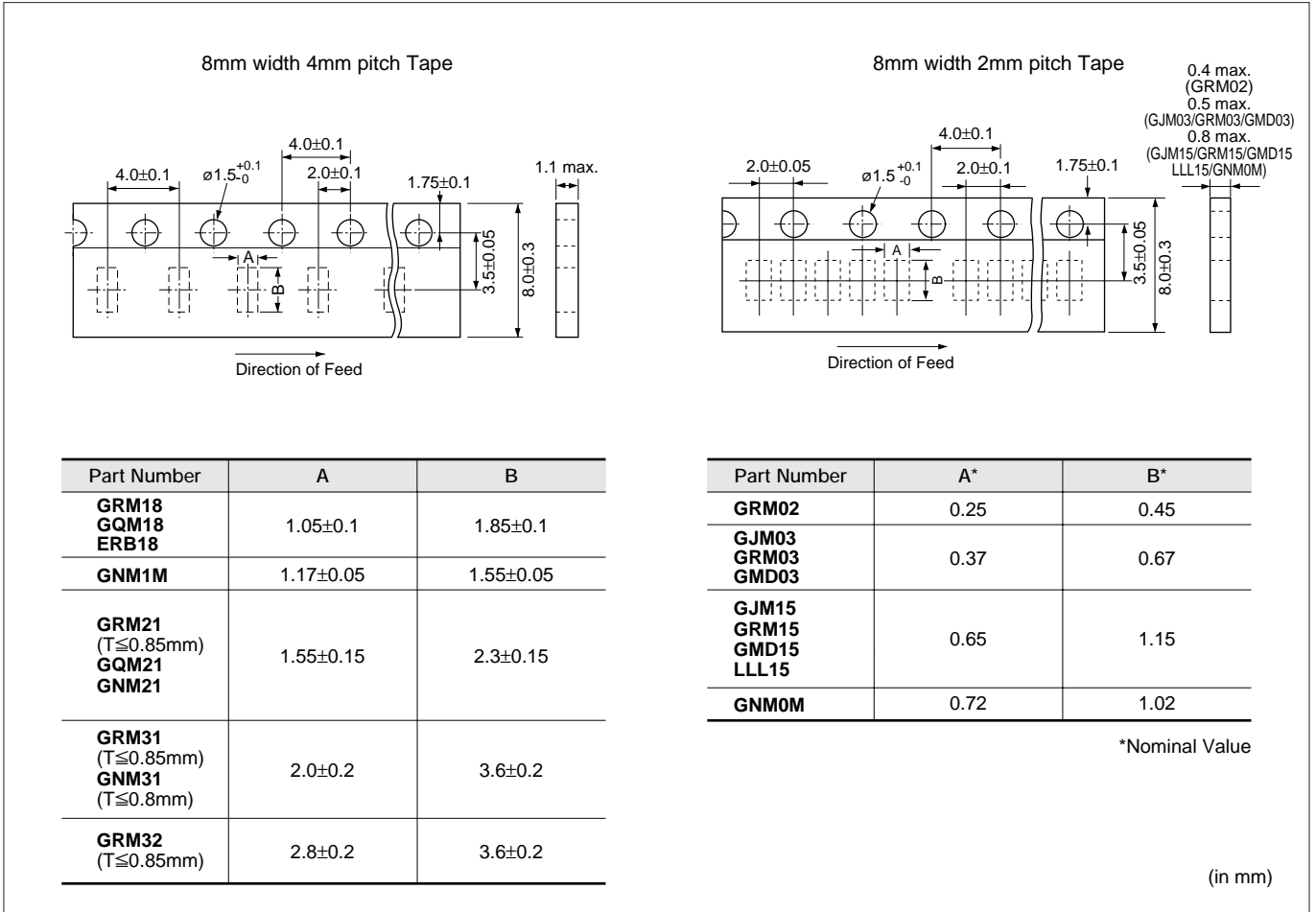
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## ■ Tape Carrier Packaging

### (1) Dimensions of Reel



### (2) Dimensions of Paper Tape

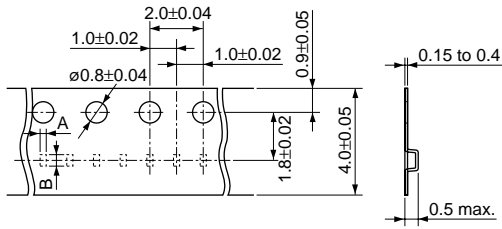


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### (3) Dimensions of Embossed Tape

4mm width 1mm pitch Tape

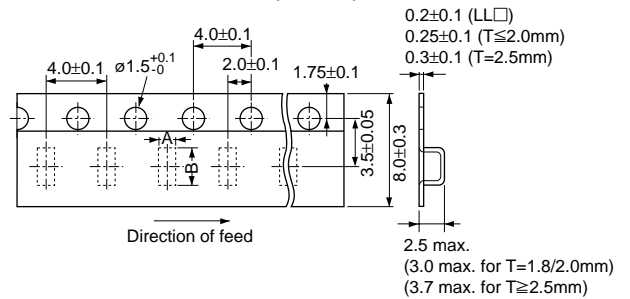


Part Number	A*	B*
<b>GRM02</b>	0.23	0.43

\*Nominal Value

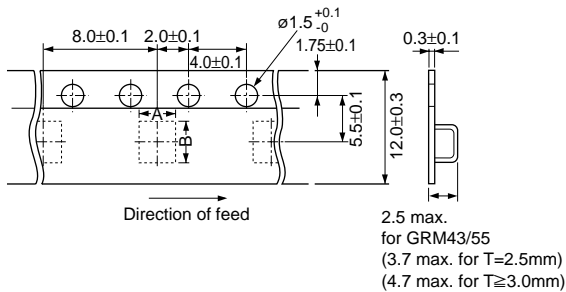
\*GRM03 is also available by 4mm width 1mm pitch Tape.

8mm width 4mm pitch Tape



Part Number	A	B
<b>LLL18, LLA18</b>	1.05±0.1	1.85±0.1
<b>GRM21</b> (T≥1.0mm) <b>LLL21</b> <b>LLA21, LLM21</b>	1.45±0.2	2.25±0.2
<b>ERB21</b>	1.55±0.2	2.3±0.2
<b>GRM31</b> (T≥1.15mm) <b>LLL31</b> <b>LLA31, LLM31</b> <b>GNM31</b> (T≥1.0mm)	1.9±0.2	3.5±0.2
<b>GRM32, ERB32</b> (T≥1.0mm)	2.8±0.2	3.5±0.2

12mm width 8mm pitch Tape



Part Number	A*	B*
<b>GRM43</b>	3.6	4.9
<b>GRM55</b>	5.2	6.1

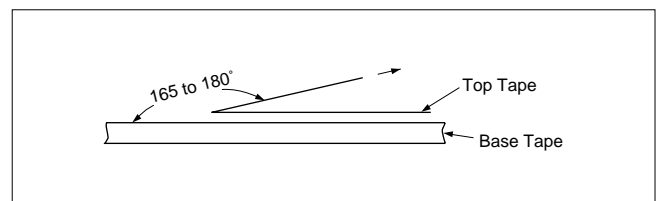
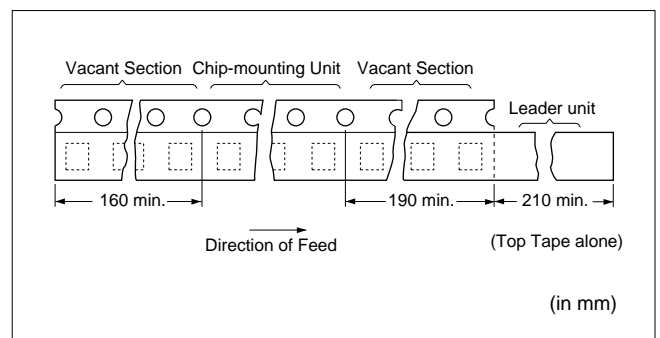
\*Nominal Value

(in mm)

### (4) Taping Method

- Tapes for capacitors are wound clockwise. The sprocket holes are to the right as the tape is pulled toward the user.
- Part of the leader and part of the empty tape should be attached to the end of the tape as follows.
- The top tape and base tape are not attached at the end of the tape for a minimum of 5 pitches.
- Missing capacitors number within 0.1% of the number per reel or 1 pc, whichever is greater, and are not continuous.
- The top tape and bottom tape should not protrude beyond the edges of the tape and should not cover sprocket holes.
- Cumulative tolerance of sprocket holes, 10 pitches: ±0.3mm.
- Peeling off force: 0.1 to 0.6N\* in the direction shown below.

\*GRM02  
GRM03  
GJM03  
GMD03 } : 0.05 to 0.5N



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■ Dimensions of Bulk Case Packaging

The bulk case uses antistatic materials. Please contact Murata for details.

