

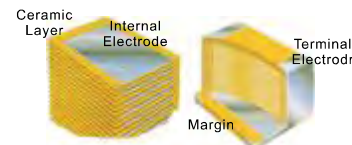
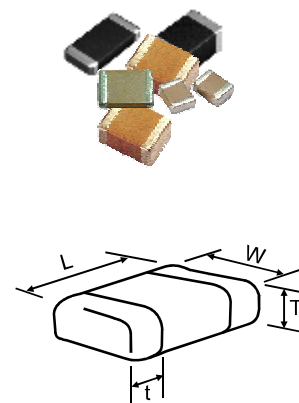
Multilayer ceramic capacitors

SMD type



Shape and Dimensions

Size	Length (L) mm (in.)	Width (W) mm (in.)	Terminal (t) mm (in.)	Soldering	Packaging	Remarks
0201	0.60±0.03 (0.024±0.001)	0.30±0.03 (0.011±0.001)	0.15±0.05 (0.006±0.002)	Reflow	Paper	•
0402	1.00±0.10 (0.040±0.004)	0.50±0.10 (0.020±0.004)	0.25±0.15 (0.010±0.006)	Reflow	Paper	□
0603	1.60±0.15 (0.063±0.006)	0.81±0.15 (0.032±0.006)	0.35±0.15 (0.014±0.006)	Reflow	Paper	□
0805	2.01±0.20 (0.079±0.008)	1.25±0.20 (0.049±0.008)	0.50±0.25 (0.020±0.010)	Reflow or Wave	Embossed or Paper	□
1206	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	0.50±0.25 (0.020±0.010)	Reflow or Wave	Embossed or Paper	□
1210	3.20±0.20 (0.126±0.008)	2.50±0.20 (0.098±0.008)	0.50±0.25 (0.020±0.010)	Reflow	Embossed or Paper	□
1812	4.50±0.30 (0.177±0.012)	3.20±0.20 (0.126±0.008)	0.61±0.36 (0.024±0.014)	Reflow	Embossed	□
1825	4.50±0.30 (0.177±0.012)	6.40±0.40 (0.252±0.016)	0.61±0.36 (0.024±0.014)	Reflow	Embossed	□
2220	5.70±0.40 (0.225±0.016)	5.00±0.40 (0.197±0.016)	0.64±0.39 (0.025±0.015)	Reflow	Embossed	□
2225	5.72±0.25 (0.225±0.010)	6.35±0.25 (0.250±0.010)	0.64±0.39 (0.025±0.015)	Reflow Only	Embossed	□



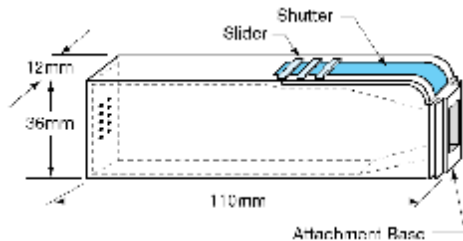
Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness (T)	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.90 (0.035)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	0.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSED							

Bulk Case Packaging

Benefits

- Easier handling
- Smaller packaging volume
(1/20 of T/R packaging)
- Easier inventory control
- Flexibility
- Recyclable

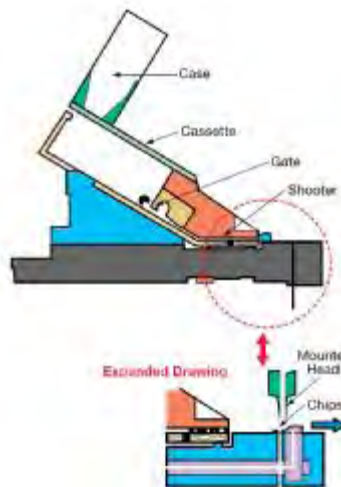
Case dimensions



Case quantities

Part size	0402	0603	0805	1206
Qty. (pcs / cassette)	80, 000	15, 000	10, 000 (T=0.6mm) 8, 000 (T=0.8mm) 6, 000 (T=1.1mm)	5, 000 (T=0.6mm) 4, 000 (T=0.8mm) 3, 000 (T=1.1mm)

Bulk feeder



Multilayer ceramic capacitors

SMD type



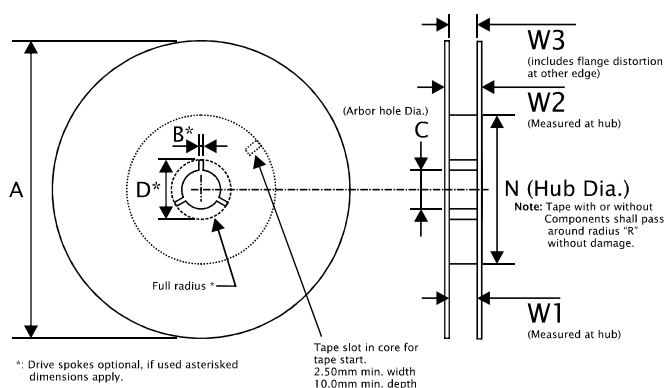
Automatic Insertion Packaging

■ Tape & Reel Quantities

All tape and reel specifications are in compliance with RS481.

Tape size	8mm	12mm
Paper or Embossed Carrier	0805, 1206, 1210	
Embossed Only		1812, 1825, 2220, 2225
Paper Only	0201, 0402, 0603	
Qty. per Reel / 7" Reel	2 000, 3 000 or 4 000, 10 000, 15 000 Contact factory for exact quantity	500, 1 000 Contact factory for exact quantity
Qty. per Reel / 13" Reel	5 000, 10 000, 50 000 Contact factory for exact quantity	4 000

■ Reel Dimensions

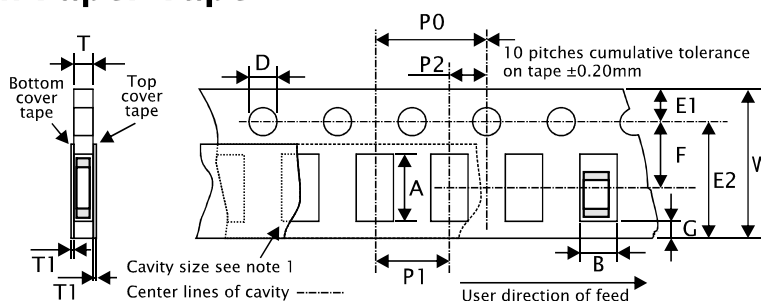


Tape size	A max.	B* min.	C	D* min.	N min.
8mm	330	1.5	13.0 (+0.50/-0.20)	20.2	50.0
12mm					

Tape size	W1	W2	W3
8mm	8.40 ^{+1.5} ₋₀	14.4 max.	7.90~10.9
12mm	12.4 ^{+2.0} ₋₀	18.4 max.	11.9~15.4

Unit: mm

■ 8 / 12mm Paper Tape



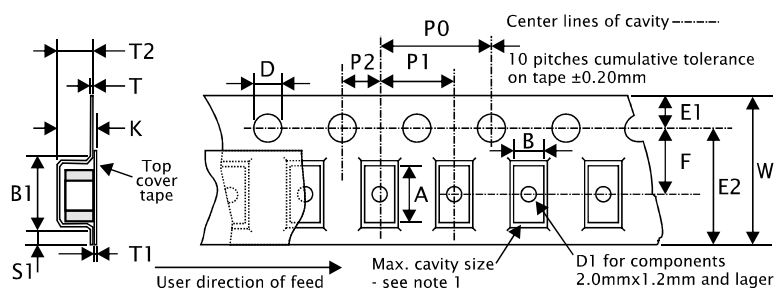
Constant Dimensions (mm)

Tape size	D	E1	P0	P2	T1 max.	G min.	R min.
8mm	1.50 ^{+0.10} _{-0.0}	1.75±0.10	4.00±0.10	2.00±0.05	0.10	0.75	25.0
12mm							See note 2

Variable Dimensions (mm)

Tape size	P1 (See note 5)	E2 min.	F	W	A, B	T max.
8mm	4.00±0.10	6.25	3.50±0.05	8.00 ^{+0.30} _{-0.10}	See note 1	1.10 for paper base tape and
12mm	4.00±0.10	10.25	5.50±0.05	12.0±0.30		1.60 for non-paper base compositions
8mm ½ pitch	2.00±0.10	6.25	3.50±0.05	8.00 ^{+0.30} _{-0.10}		
12mm double pitch	8.00±0.10	10.25	5.50±0.05	12.0±0.30		

8 / 12mm Embossed Tape



Constant Dimensions (mm)

Tape size	D	E1	P0	P2	S1 min.	T max.	T1 max.
8mm	1.50 ^{+0.10} _{-0.0}	1.75 $\pm$ 0.10	4.00 $\pm$ 0.10	2.00 $\pm$ 0.05	0.60	0.60	0.10
12mm							

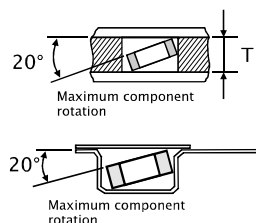
Variable Dimensions (mm)

Tape size	B1 max.	D1 min.	E2 min.	F	P1 (See note 5)	R min. (See note 2)	T2 max.	W max.	A, B, K
8mm	4.35	1.00	6.25	3.50 $\pm$ 0.05	4.00 $\pm$ 0.10	25.0	2.50	8.30	See note 1
12mm	8.20	1.50	10.25	5.50 $\pm$ 0.05	4.00 $\pm$ 0.10	30.0	6.50	12.30	
8mm ½ pitch	4.35	1.00	6.25	3.50 $\pm$ 0.05	2.00 $\pm$ 0.10	25.0	2.50	8.30	
12mm double pitch	8.20	1.50	10.25	5.50 $\pm$ 0.05	8.00 $\pm$ 0.10	30.0	6.50	12.30	

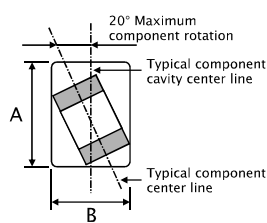
Note

- The cavity defined A, B (and K) shall be configured to provide the following:
 - the component does not protrude beyond either surface of the carrier tape
 - the component can be removed from the cavity in a vertical direction without mechanical restriction, after the top cover tape has been removed.
 - rotation of the component is limited to 20° maximum (see sketches A & B).
 - lateral movement of the component is restricted to 0.5mm maximum (see sketch C).

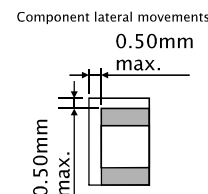
Side or front sectional view
Sketch "A"



Top view
Sketch "B"



Top view
Sketch "C"



- Tape with or without components shall pass around radius "R" without damage.
- Bar code labeling (if required) shall be on the side reel opposite the round sprocket holes. Refer to EIA-556.
- B dimension is a reference dimension for tape feeder clearance only.
- if P1=2mm, the tape may not properly index in all tape feeders.