



Feature

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COG COH

*X7R X7S X7T X6S X6T X5R

GB/T 21041-2007 GB/T 21042-2007

Appl i cati on

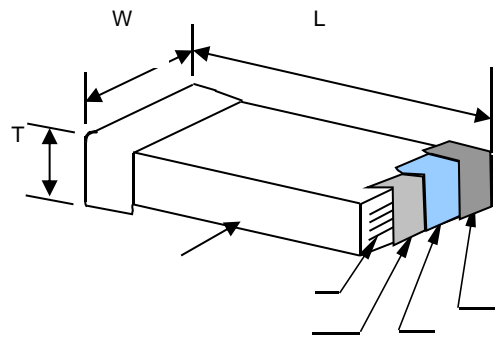
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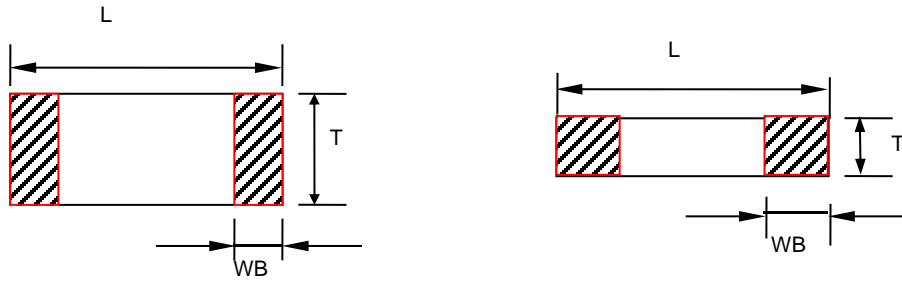
0805			CG		102		J		500			N		T	
	× (L×W)	× (L×W)								V					
1005	0.01×0.005	0.40×0.20	0R5	0.5	6R3	6.3	B								
0201	0.02×0.01	0.60×0.30	1R0	1.0	500	50 10 ⁰	T								
0402	0.04×0.02	1.00×0.50	102	10 10 ²	201	20 10 ¹									
0603	0.06×0.03	1.60×0.80	R O		R O										
0805	0.08×0.05	2.00×1.25													
1206	0.12×0.06	3.20×1.60													
1210	0.12×0.10	3.20×2.50													
1808	0.18×0.08	4.50×2.00													
1812	0.18×0.12	4.50×3.20													

CG	C0G
X	X5R
B	X7R
BS	X7S
BT	X7T
DS	X6S
DT	X6T

A	±0.05pF	A B C D 10pF
B	±0.10pF	
C	±0.25pF	
D	±0.50pF	
F	±1%	
G	±2%	
J	±5%	
K	±10%	
M	±20%	
S	-20% +50%	
Z	-20% +80%	

	C
	N





		L	W	T	WB
1005	0402	0.4±0.02	0.2±0.02		

1 " T" " " 2

/ Temperature Coefficient /Characteristics

COG	20°C	0±30 ppm/°C	-55 125
X7R	20°C	±15%	-55 125
X7S	20°C	±22%	-55 125
X7T	20°C	-33%+22%	-55 125
X6S	20°C	±22%	-55 105
X6T	20°C	-33%+22%	-55 105
X5R	20°C	±15%	-55 85

20°C 20°C 85°C



*1

/	1005 (0.4mm*0.2mm)				0201 (0.6mm*0.3mm)		0402 (1.0mm*0.5mm)		0603 (1.6mm*0.8mm)	
	10V	16V	25V	50V	25V	50V	25V	50V	25V	50V
0.1pF										
0.2pF										
0.5pF										
1pF										
1.2pF										
1.5pF										
1.8pF										
2.0pF										
2.2pF										
2.7pF										
3.0pF										
3.3pF										
3.6pF										
3.9pF										
4.7pF										
5.0pF										
5.6pF										
6.8pF										
8.0pF										
8.2pF										
10pF										
12pF										
15pF										
18pF										
22pF										
27pF										
33pF										
39pF										
47pF										
56pF										
68pF										
100pF										
120pF										
150pF										
180pF										
220pF										
270pF										
330										

/	COG							
	0805 (2.0mm*1.25mm)		1206 (3.2mm*1.6mm)		1210 (3.2mm*2.5mm)		1812 (4.5mm*3.2mm)	
	25V	50V	25V	50V	25V	50V	25V	50V
0.1pF	0.8±0.02		0.8±0.02		1.25±0.20		1.6±0.30	
0.22pF								
0.3pF								
0.47pF								
1pF								
1.2pF								
1.5pF								
1.8pF								
2.0pF								
2.2pF								
2.7pF								
3.0pF								
3.3pF								
3.6pF								
3.9pF								
4.7pF								
5.0pF								
5.6pF								
6.8pF								
8.0pF								
8.2pF								
10pF								
12pF								
15pF								
18pF								
22pF								
27pF								
33pF								
39pF								
47pF								
56pF								
68pF								
100pF								
120pF								
150pF								
180pF								
220pF								
270pF								
330pF								
390pF								
470pF								
560pF								
680pF								
1nF								
1.5nF								
1.8nF								
2.2nF								
2.7nF								
3.3nF								
4.7nF								
6.8nF								
10nF								
12nF								
22nF								
33nF								
47nF								
100nF								

0201
(0.6mm*0.3mm)

X7R

X7S

X7T

X6S/X6T

X5R

/ 6.3V 10V 16V 25V 50V 6.3V 10V 16V 25V

		0805 (2.0mm*1.25mm)																								
		X7R					X7S					X7T					X6S/X6T					X5R				
/		6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
18nF																										
22nF																										
33nF																										
47nF																										
56nF		0.8	0.2				0.8	0.2			0.8	0.2				0.8	0.2									
68nF																										
100nF																										
220nF																										
330nF																										
470nF																										
680nF		1.25	0.2				1.25	0.2			1.25	0.2				1.25	0.2									
1μF																										
2.2μF																										
3.3μF		1.25	0.2				1.25	0.2																		
4.7μF																										
6.8μF		1.25	0.2				1.25	0.2			1.25	0.2				1.25	0.2									
10μF																										
15μF																										
22μF																										
47μF																										

		1206 (3.2mm*1.6mm)																								
		X7R					X7S					X7T					X6S/X6T					X5R				
/		6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
330pF																										
470pF																										
560pF																										
680pF																										
1nF																										
2.2nF																										
3.9nF																										
4.7nF																										
5.6nF																										
6.8nF		0.8±	0.2				0.8±	0.2			0.8±	0.2				0.8±	0.2									
10nF																										
15nF																										
18nF																										
22nF																										
33nF																										
47nF																										
56nF																										
68nF																										
100nF																										
220nF																										
330nF																										
470nF		1.25±	0.2				1.25±	0.2			1.25±	0.2				1.25±	0.2									
680nF																										
1μF		1.6±	0.3				1.6±	0.3			1.6±	0.3				1.6±	0.3									
2.2μF																										

1 mm 2

		1206 (3.2mm*1.6mm)																													
		X7R					X7S					X7T					X6S/X6T					X5R									
/		6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V					
3.3μF		1.6	0.3				1.6	0.3				1.6	0.3				1.6	0.3				1.6	0.3				1.6	0.3			

1nF																									
2.2nF																									
3.9nF																									
4.7nF																									
5.6nF																									
6.8nF																									
10nF																									
15nF																									
18nF																									
22nF																									
33nF																									
47nF																									
56nF																									
68nF																									
100nF																									
220nF																									
330nF																									
470nF																									
680nF																									
1μ F																									
2.2μ F	1.6±0.3																								
3.3μ F	1.6±0.3					1.6±0.3																			
4.7μ F	1.6±0.3					1.6±0.3																			
6.8μ F																									

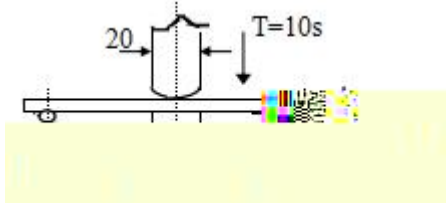
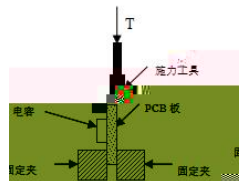
	1812 (4.5mm×3.2mm)																								
	X7R					X7S					X7T					X6S/X6T					X5R				
/	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
330pF	1.60±0.20					1.60±0.20					1.60±0.20					1.60±0.20					1.60±0.20				
470pF																									
560pF																									
680pF																									
1nF																									
2.2nF																									
3.9nF																									
4.7nF																									
5.6nF																									
6.8nF																									
10nF																									
15nF																									
18nF																									
22nF																									
33nF																									
47nF																									
56nF																									
68nF																									
100nF																									
220nF																									

	1812 (4.5mm×3.2mm)																								
	X7R					X7S					X7T					X6S/X6T					X5R				
/	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
330nF	1.60±0.20					1.60±0.20					1.60±0.20					1.60±0.20					1.60±0.20				
470nF																									

680nF						
1μ F						
2.2μ F	2.0± 0.20	2.0± 0.20	2.0± 0.20	2.0± 0.20		2.0± 0.20
3.3μ F						
4.7μ F						
6.8μ F						
1		mm 2				

			1000pF	1MHz± 10%	1.0± 0.2Vrms
			1000 pF	1KHz± 10%	
			25 ± 3 C 10μF : 1KHz± 10% : 1.0± 0.2Vrms C 10μF : 120± 24 Hz : 0.5± 0.1Vrms		
(IR)		C 10 nF, Ri 50000M C 10 nF, Ri • Cr 500S	$500V$: 60± 5 75% 25 ± 3 50mA		
		C 25 nF, Ri 10000M C 25 nF, Ri • Cr 100S			
		S= · F			
(DF, tan)		DF			
		1/ 400+20C	C 30 pF	1MHz± 10%	1.0± 0.2Vrms
		0.1%	C 30pF		

(DF, tan δ)			DF(× 10 ⁻⁴)	1005	0201	0402	0603	0805	1206	C 10μF : 1KHz ± 10% : 1.0 ± 0.2Vrms C 10μF X7R : 120 X5R X7T X6S : 0.5± 0.1Vrms	
		50V	250	---	---	10nF	100nF	---	---		680nF
			350	---	3.3nF	47nF	470nF	1uF	---		2.2uF
			500	---	10nF	0.1μ F	---	---	---		---
			750	---	---	---	---	2.2uF	---		4.7uF
			1000	---	---	---	2.2μ F	10μ F	---		10μ F
		25V	250	---	---	10nF	100nF	---	---		680nF
			350	---	3.3nF	47nF	470nF	1uF	---		---
			500	---	10nF	0.22μ F	---	---	---		---
			750	---	10nF	---	---	2.2μ F	---		10μ F
			1000	---	100nF	2.2μ F	10μ F	22μ F	---		22μ F
		16V	250	---	---	10nF	100nF	---	---		680nF
			350	1nF	3.3nF	47nF	470nF	1uF	---		---
			500	---	15nF	220nF	---	---	---		---
			750	10nF	47nF	---	---	4.7μ F	---		10μ F
			1000	---	100nF	4.7μ F	10μ F	22μ F	---		47μ F
		10V	250	---	---	10nF	100nF	---	---		680nF
			350	1nF	3.3nF	47nF	470nF	1uF	---		---
			500	---	15nF	220nF	---	---	---		---
			750	10nF	100nF	---	---	2.2μ F	---		10μ F
			1000	---	2.2μ F	10μ F	22μ F	47μ F	---		100μ F
		6.3V	250	---	---	10nF	100nF	---	---		680nF
			350	1nF	3.3nF	47nF	470nF	1uF	---		---
			500	---	15nF	220nF	---	---	---		---
			750	10nF	47nF	---	---	2.2uF	---		10μ F
1000	---		2.2μ F	10μ F	47μ F	47μ F	---	100uF			
(DW)									1-5 / 300% / 250% (M.LCC) 50nA		
									80-120 10-30 95%		
									Sn/Pb 63/37 : 235± 5 : 2± 0.5s : 245± 5 : 2± 0.5s		

	Item															
	C/C	$\pm 2.5\%$ $\pm 0.25\text{pF}$ $\pm 2.5\%$ or $\pm 0.25\text{PF}$	$\pm 15\%$	100-200 : 265 ± 5 : $10 \pm 1\text{s}$ 60-120 10 24 ± 2												
	DF															
	IR															
		95%														
	C/C	$\pm 5\%$ $\pm 0.5\text{pF}$, $\pm 10\%$		PCB 1mm/sec. 1mm mm 												
				60+1 T <table border="1" data-bbox="893 1120 1133 1265"> <tr><td></td><td>T</td></tr> <tr><td>0402</td><td>2N</td></tr> <tr><td>0603</td><td>5N</td></tr> </table> 		T	0402	2N	0603	5N						
	T															
0402	2N															
0603	5N															
	Item			1 5 4 24± 1h												
	C/C	$\pm 1\%$ $\pm 1\text{PF}$ $\pm 1\%$ or $\pm 1\text{pF}$	-15% ~+15%													
				<table border="1" data-bbox="893 1500 1428 1825"> <tr><td>1</td><td>: -55</td><td>30mi n</td></tr> <tr><td>2</td><td>: +20</td><td>2 3mi n</td></tr> <tr><td>3</td><td>COG/X7R/X7T/X7S: +125 X5R +85 X6S/X6T: +105</td><td>30mi n</td></tr> <tr><td>4</td><td>: +20</td><td>2 3mi n</td></tr> </table> $24 \pm 2\text{h}$	1	: -55	30mi n	2	: +20	2 3mi n	3	COG/X7R/X7T/X7S: +125 X5R +85 X6S/X6T: +105	30mi n	4	: +20	2 3mi n
1	: -55	30mi n														
2	: +20	2 3mi n														
3	COG/X7R/X7T/X7S: +125 X5R +85 X6S/X6T: +105	30mi n														
4	: +20	2 3mi n														

C/C	$\pm 7.5\% \pm 0.75pF$, $\pm 12.5\%$ Class : $\pm 7.5\%$ or $\pm 0.75pF$, whichever is larger. Class : $\pm 12.5\%$	
DF	2	
I R	Class	Ri 5000M Ri •Cr 50S
	Class	Ri 1000M Ri •Cr 10S

140 -150 1h± 10min
 24± 2h
 40± 2
 90-95%RH
 500
 24± 2h
 0201 47nF 0402 33nF 0603 1μ F
 0805 4.7μ F 1206 10μ F
 150 1h 24± 2h

C/C	$\pm 3\% \pm 0.3pF$, $-20\% \sim +20\%$	
DF	2	
I R	Ri 4000M Ri •Cr 40S	
	Ri 2000M Ri •Cr 50S	

140 -150 1h± 10min 24± 2h
 100V 1000
 2 1
 125 COG X7R X7S 85 X5R 105 X6S
 X6T
 50mA
 24± 2h
 0201 47nF 0402 33nF 0603 1μ F 0805 4.7
 μ F 1206 10μ F 150 1h
 24± 2h

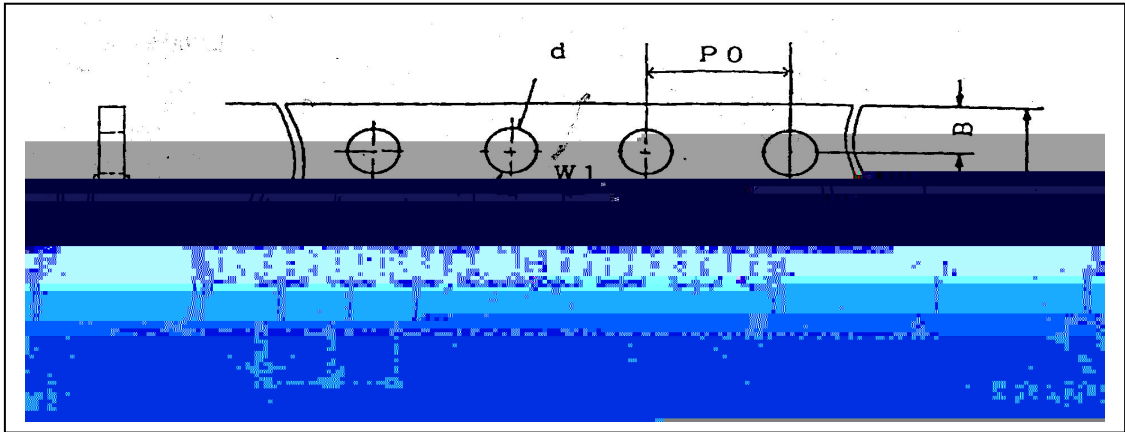
1(table 1)

0201 10nF 0805 0.47uF
 1.5Ur 1.5Ur

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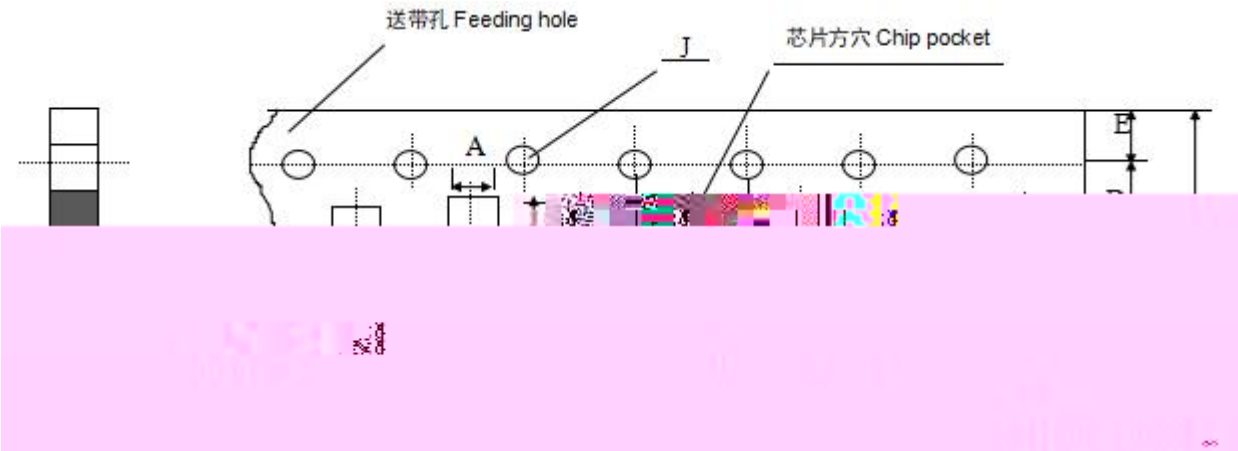
E	B0
± 0.0	0.02

* 1005 0201 0402



	W1	L1	D	C	B	P1	P2	P0	d	t
1005	0.24 ± 0.02	0.45 ± 0.02	8.00 ±0.10	3.50 ±0.05	1.75 ±0.10	2.00 ±0.05	2.00 ±0.05	4.00 ±0.10	1.50 -0/+0.10	0.30 Bel ow
0201	0.37 ±0.10	0.67 ±0.10	8.00 ±0.10	3.50 ±0.05	1.75 ±0.10	2.00 ±0.05	2.00 ± 0.05	4.00 ±0.10	1.50 -0/+0.10	0.80 Bel ow
0402	0.65 ±0.10	1.15 ±0.10	8.00 ±0.10	3.50 ±0.05	1.75 ±0.10	2.00 ±0.05	2.00 ±0.05	4.00 ±0.10	1.50 -0/+0.10	0.80 Bel ow

* 0603 0805 1206

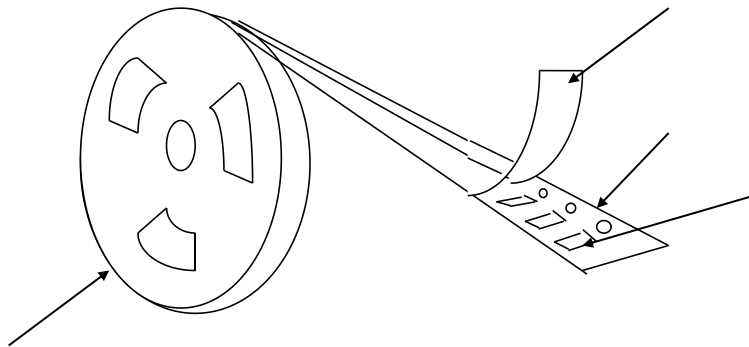


Unit mm

	A	B	C	D*	E	F	G*	H	J	T
0603	1.10 ± 0.10	1.90 ± 0.10	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.10 Max
0805	1.45 ± 0.15	2.30 ± 0.15	8.00 ± 0.15	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.10 Max
1206	1.80 ± 0.20	3.40 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.10 Max

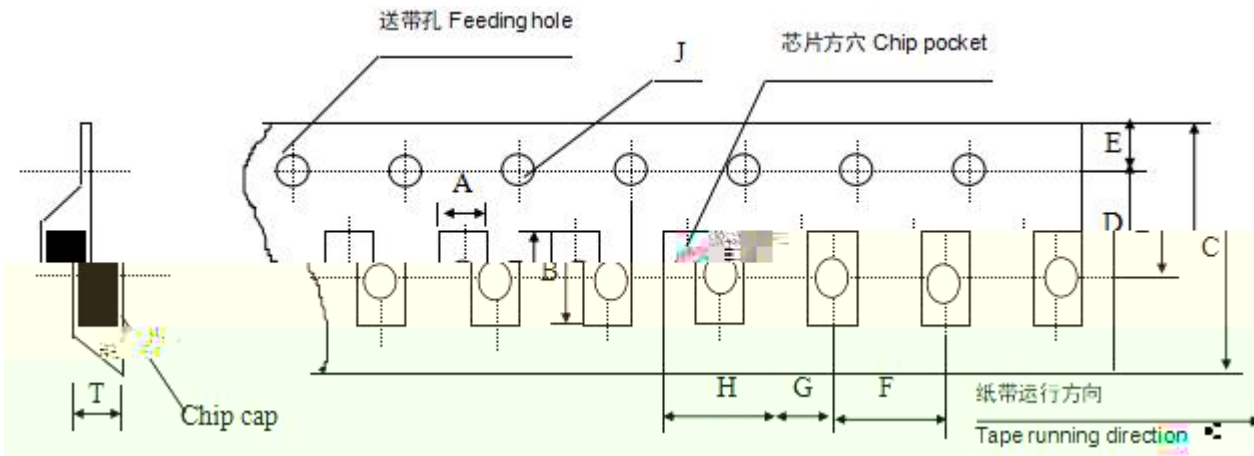
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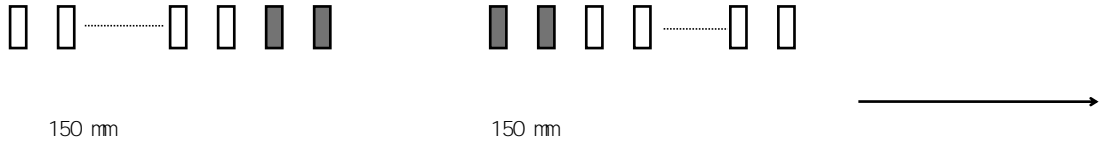
(0805-1812)



	A	B	C	D*	E	F	G*	H	J	T
0805	1.55 ± 0.20	2.35 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.10	1.50 -0/+0.10	1.50 Max
1206	1.95 ± 0.20	3.60 ± 0.20	8.00 ± 0.20	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	4.00 ± 0.1	1.50 -0/+0.10	1.85 Max
1210	2.70 ± 0.10	3.42 ± 0.10	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	1.55 -0/+0.10	3.2 Max
1808	2.20 ± 0.10	4.95 ± 0.10	12.00 ± 0.10	5.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	1.50 -0/+0.10	3.0 Max
1812	3.66 ± 0.10	4.95 ± 0.10	12.00 ± 0.10	5.50 ± 0.05	1.75 ± 0.10	8.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	1.55 -0/+0.10	4.0 Max

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	A	B	C	D	E	F	G
7 REEL	178 ± 2.0	3.0	13 ± 0.5	21 ± 0.8	50 50 or more	10.0 ± 1.5	12max

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Paper Taping

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0.1N< <0.7N

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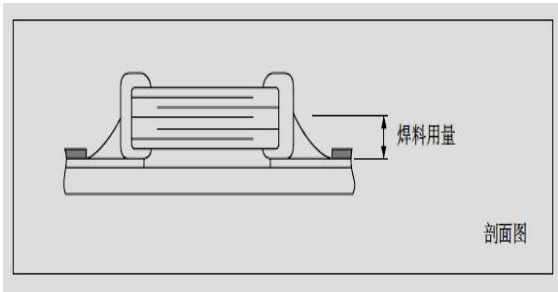
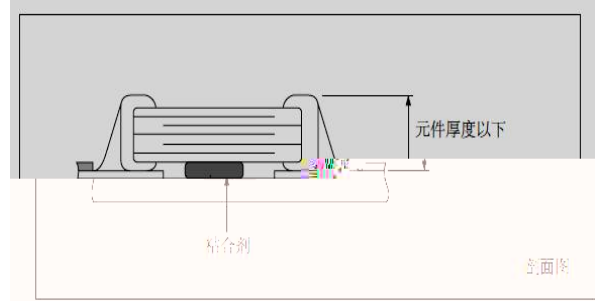
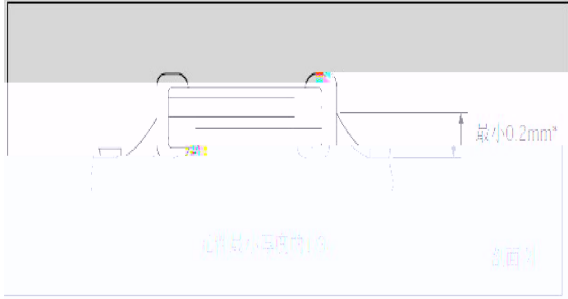
unit : mm

	A	B	T	C	D	E
	6.80± 0.10	8.80± 1.00	12.00± 0.10	15.00+0.10/-0	2.00+0/-0.10	4.70± 0.10
	F	W	G	H	L	I
	31.50+0.20/-0	36.00+0/-0.20	19.00± 0.35	7.00± 0.35	110.00± 0.70	5.00± 0.35

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1005	---	20000	---	---	---
0201	---	15000	---	---	---
0402	-----	10000	-----	20000	5000
0603	-----	4000	-----	15000	5000
0805	-----	4000	3000	10000	5000
1206	-----	4000	T 1.35mm 3000 T 1.35mm 2000	5000	5000
1210	-----	-----	T 1.80mm 2000 T 1.80mm 1000	-----	2000
1808	-----	-----	2000	-----	2000
1812	-----	-----	T 1.85mm 1000 T 1.85mm 500	-----	2000

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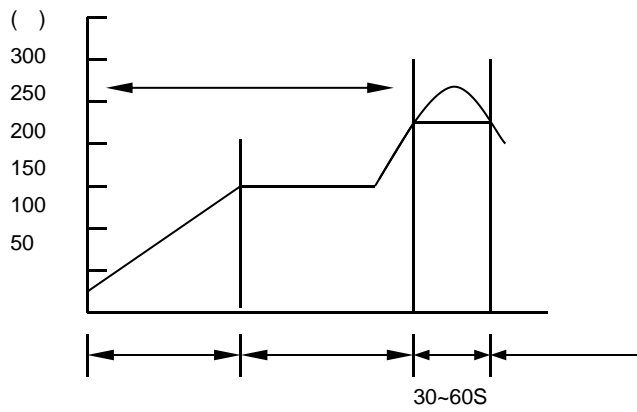
1005	C0G	/	/	R
	X7R/X5R/X7T/X6S	/	/	R
0201	C0G	/	/	R
	X7R/X5R/X7T/X6S	/	/	R

*

0402	CCG	/	/	R
	X7R/X5R/X7T/X6S	/	/	R
0603	CCG	/	/	R/W
	X7R/X5R/X7T/X6S	/	C 1uf	R
			C 1uf	R/W
0805	CCG	/	/	R/W
	X7R/X5R/X7T/X6S	/	C 4.7uf	R
			C 4.7uf	R/W
1206	CCG	/	/	R/W
	X7R/X5R/X7T/X6S	/	C 10uf	R
			C 10uf	R/W
1210	CCG	/	/	R
	X7R/X5R/X7T/X6S	/	/	R

R—
W—

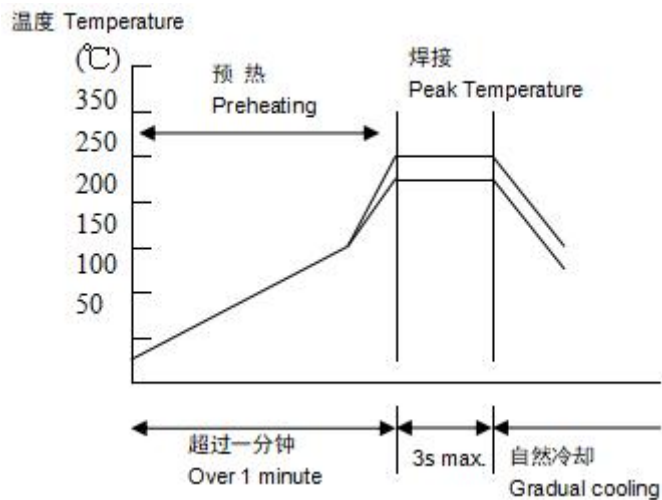
*



	Pb-Sn		
	230	250	240 260

T 150

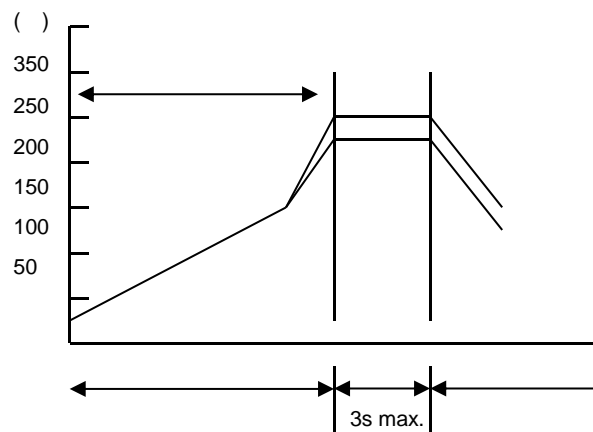
*



	Pb-Sn	
	230 260	240 270

T 150

*



Condi ti ons

130	350	20W	1mm	3s	1/2	

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