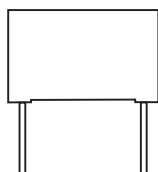
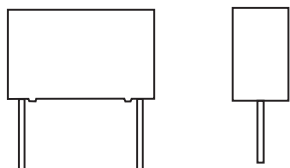
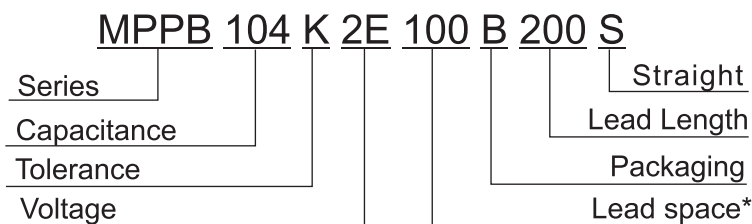


### ■ FEATURES

- Low loss at high frequency
- Rated voltage : 160Vdc~2000Vdc (90Vac~700Vac)
- Capacitance range : 0.00056 ~ 15  $\mu$ F
- Plastic case (Compliant to UL 94V-0), epoxy resom sealing
- RoHS Compliant and lead-free terminations
- Widely used in high frequency, DC, AC and pulse circuits



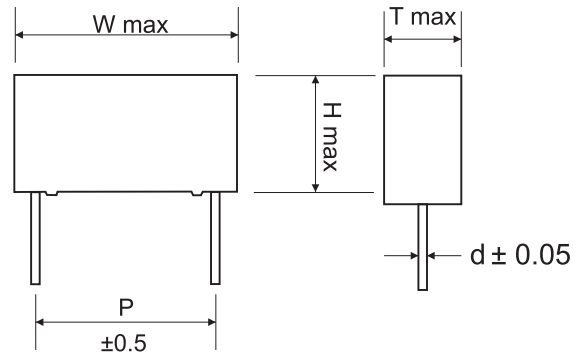
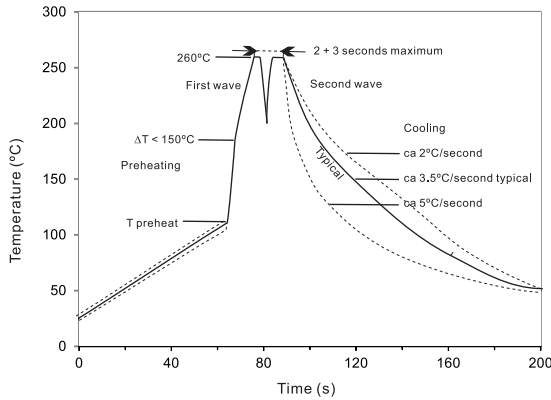
### ■ PART NUMBER EXAMPLE



### ■ ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C Unless otherwise specified)

Items	Performance							
Operating Voltage Range	160Vdc ~ 2,000Vdc (90Vac ~ 700Vac)							
Rated Temperature	-40°C ~ +105°C (Derates over 85°C : 125% per °C of Rated Voltage)							
Usable Upper Category Temperature	+105°C (Derates over +85°C : 125% per °C of Rated Voltage)							
Climatic Category	40 / 105 / 56							
Capacitance Range	0.00056 $\mu$ F ~ 15 $\mu$ F							
Capacitance Tolerance	5% (J), 10% (K), other tolerances on request							
Withstanding Voltage	Between Terminals: 1.6 x rated voltage (V <sub>R</sub> ) for 5 seconds. Between Terminal and Case: 2000V <sub>AC</sub> for 5 seconds.							
Dissipation Factor	$\leq$ 0.001 (1KHz, 20°C)							
Insulation Resistance	R $\geq$ 100,000M $\Omega$ , CN $\leq$ 0.33 $\mu$ F (20°C, 100V, 1min) RCN $\geq$ 30,000s, CN > 0.33 $\mu$ F							
Maximum Pulse Rise Time (dV/dt)  If the working voltage (V) is lower than the rated voltage (V <sub>R</sub> ), the capacitor can be worked at a higher dV/dt. In this case, the maximum allowed dV/dt is obtained by multiplying the right value with V <sub>R</sub> /V.	Voltage (Vdc)	max. pulse rise time, dV/dt (V/ $\mu$ Sec), T <sub>a</sub> < 25°C						
		P = 5.0	P = 7.5	P = 10.0	P = 15.0	P = 22.5	P = 27.5	P = 37.5
	160	110	310	190	110	65	55	---
	250	270	660	560	310	130	110	---
	400	440	900	1,500	900	500	300	100
	630	550	1,500	3,000	2,500	1,500	900	---
	1,000	---	---	4,800	3,200	2,100	1,000	---
	1,600	---	---	---	6,000	3,000	2,000	---
2,000	---	---	---	9,500	3,500	2,300	---	

### WAVE SOLDERING RECOMMENDATIONS



### RATINGS & DIMENSIONS (mm)

μF	Working Voltage	160Vdc (2C)				
		90Vac				
	Code	W	H	T	P	d
0.027	273	7.2	7.5	3.5	5.0	0.5
0.033	333	7.2	7.5	3.5	5.0	0.5
0.039	393	7.2	7.5	3.5	5.0	0.5
0.047	473	7.2	9.5	4.5	5.0	0.5
0.056	563	7.2	9.5	4.5	5.0	0.5
0.068	683	7.2	9.5	4.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
0.082	823	7.2	10.0	5.0	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.1	104	7.2	10.0	5.0	5.0	0.5
		10.5	11.0	5.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.12	124	7.2	11.0	6.0	5.0	0.5
		10.5	11.0	5.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
0.15	154	7.2	11.0	6.0	5.0	0.5
		10.5	12.0	6.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
0.18	184	10.5	12.0	6.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.22	224	13.0	12.0	6.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.27	274	13.0	12.0	6.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.33	334	17.5	11.0	5.0	15.0	0.8
0.39	394	17.5	12.0	6.0	15.0	0.8
0.47	474	17.5	12.0	6.0	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.56	564	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8

μF	Working Voltage	160Vdc (2C)				
		90Vac				
	Code	W	H	T	P	d
0.68	684	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.82	824	17.5	14.5	8.5	15.0	0.8
		26.5	16.0	7.0	22.5	0.8
1	105	17.5	16.0	10.0	15.0	0.8
		26.5	16.0	7.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1.2	125	17.5	16.0	10.0	15.0	0.8
		26.5	17.0	8.5	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1.5	155	17.5	19.0	11.0	15.0	0.8
		26.5	17.0	8.5	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1.8	185	17.5	19.0	11.0	15.0	0.8
		26.5	18.5	10.0	22.5	0.8
		32.0	18.0	9.5	27.5	0.8
2.2	225	26.5	20.0	11.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
2.5	255	26.5	20.0	11.0	22.5	0.8
2.7	275	26.5	22.0	12.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
3.3	335	26.5	22.0	12.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
3.9	395	32.0	22.0	13.0	27.5	0.8
4.7	475	32.0	28.0	14.0	27.5	0.8
6.8	685	32.0	33.0	18.0	27.5	0.8
8.2	825	32.0	33.0	18.0	27.5	0.8
10	106	32.0	33.0	18.0	27.5	0.8
12	126	32.0	37.0	22.0	27.5	0.8
15	156	32.0	37.0	22.0	27.5	0.8

■ **RATINGS & DIMENSIONS** (mm) continued...

(μF)	Working Voltage	250Vdc (2E)				
		180Vac				
	Code	W	H	T	P	d
0.01	103	7.2	7.5	3.5	5.0	0.5
0.012	123	7.2	7.5	3.5	5.0	0.5
0.015	153	7.2	7.5	3.5	5.0	0.5
0.018	183	7.2	7.5	3.5	5.0	0.5
0.022	223	7.2	7.5	3.5	5.0	0.5
0.027	273	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
0.033	333	7.2	9.5	4.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.039	393	7.2	9.5	4.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.047	473	7.2	9.5	4.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.056	563	7.2	9.5	4.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.068	683	7.2	10.0	5.0	5.0	0.6
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.082	823	7.2	10.0	5.0	5.0	0.6
		10.5	11.0	5.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.1	104	7.2	11.0	6.0	5.0	0.6
		10.5	11.0	5.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.12	124	7.2	11.0	6.0	5.0	0.6
		10.5	11.0	5.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
0.15	154	10.5	12.0	6.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.18	184	10.5	12.0	6.0	7.5	0.6
		13.0	12.0	6.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8

(μF)	Working Voltage	250Vdc (2E)				
		180Vac				
	Code	W	H	T	P	d
0.22	224	13.0	12.0	6.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.27	274	17.5	12.0	6.0	15.0	0.8
0.33	334	17.5	12.0	6.0	15.0	0.8
0.39	394	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.47	474	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.56	564	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.68	684	17.5	14.5	8.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.82	824	17.5	16.0	10.0	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1	105	17.5	16.0	10.0	15.0	0.8
		26.5	16.0	7.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1.2	125	17.5	19.0	11.0	15.0	0.8
		26.5	17.0	8.5	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1.5	155	26.5	17.0	8.5	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1.8	185	26.5	18.5	10.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
2.2	225	26.5	20.0	11.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
2.5	255	32.0	20.0	11.0	27.5	0.8
2.7	275	26.5	22.0	12.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
3.3	335	32.0	20.0	11.0	27.5	0.8
3.9	395	32.0	22.0	13.0	27.5	0.8
4.7	475	32.0	28.0	14.0	27.5	0.8
5.6	565	32.0	24.5	15.0	27.5	0.8
6.8	685	32.0	33.0	18.0	27.5	0.8
8.2	825	32.0	33.0	18.0	27.5	0.8
10	106	32.0	33.0	18.0	27.5	0.8
12	126	32.0	37.0	22.0	27.5	0.8
15	156	32.0	37.0	22.0	27.5	0.8

■ **RATINGS & DIMENSIONS** (mm) continued...

(μF)	Working Voltage	400Vdc (2G)				
		250Vac				
	Code	W	H	T	P	d
0.0039	392	7.2	7.5	3.5	5.0	0.5
0.0047	472	7.2	7.5	3.5	5.0	0.5
0.0056	562	7.2	7.5	3.5	5.0	0.5
0.0068	682	7.2	7.5	3.5	5.0	0.5
0.0082	822	7.2	7.5	3.5	5.0	0.5
0.01	103	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
0.012	123	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
0.015	153	7.2	9.5	4.5	5.0	0.6
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.018	183	7.2	9.5	4.5	5.0	0.6
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.022	223	7.2	9.5	4.5	5.0	0.6
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.027	273	7.2	10.0	5.0	5.0	0.6
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.033	333	7.2	11.0	6.0	5.0	0.6
		10.5	11.0	5.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.039	393	7.2	11.0	6.0	5.0	0.6
		10.5	11.0	5.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.047	473	7.2	11.0	6.0	5.0	0.6
		10.5	11.0	5.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
0.056	563	10.5	12.0	6.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
0.068	683	10.5	12.0	6.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.082	823	13.0	12.0	6.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.1	104	13.0	12.0	6.0	10.0	0.8
		17.5	11.0	5.0	15.0	0.8

(μF)	Working Voltage	400Vdc (2G)				
		250Vac				
	Code	W	H	T	P	d
0.12	124	17.5	11.0	5.0	15.0	0.8
0.15	154	17.5	12.0	6.0	15.0	0.8
0.18	184	17.5	12.0	6.0	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.22	224	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.27	274	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.33	334	17.5	14.5	8.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.39	394	17.5	16.0	10.0	15.0	0.8
		26.5	16.0	7.0	22.5	0.8
0.47	474	17.5	16.0	10.0	15.0	0.8
		26.5	16.0	7.0	22.5	0.8
		17.5	19.0	11.0	15.0	0.8
0.56	564	26.5	17.0	8.5	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
0.68	684	17.5	19.0	11.0	15.0	0.8
		26.5	17.0	8.5	22.5	0.8
0.82	824	32.0	18.0	9.0	27.5	0.8
		26.5	18.5	10.0	22.5	0.8
1	105	26.5	20.0	11.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
1.2	125	26.5	22.0	12.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
1.5	155	26.5	22.0	12.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
1.8	185	32.0	22.0	13.0	27.5	0.8
2.2	225	32.0	24.5	15.0	27.5	0.8
2.5	255	32.0	28.0	14.0	27.5	0.8
2.7	275	32.0	28.0	14.0	27.5	0.8
3.3	335	32.0	33.0	18.0	27.5	0.8
3.9	395	32.0	33.0	18.0	27.5	0.8
4.7	475	32.0	37.0	22.0	27.5	0.8
		42.0	31.5	18.0	37.5	0.8
5.6	565	32.0	37.0	22.0	27.5	0.8

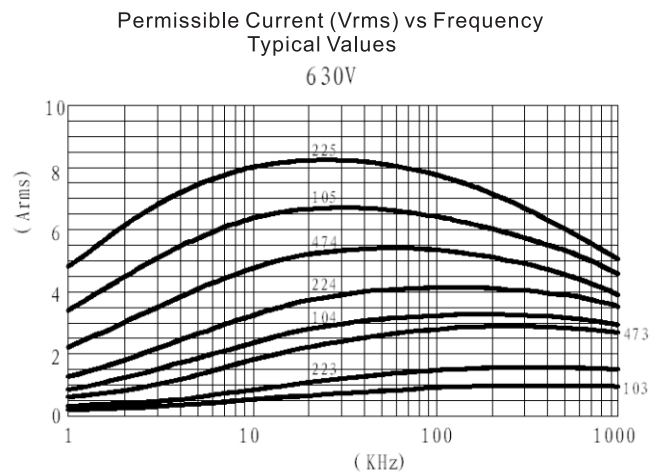
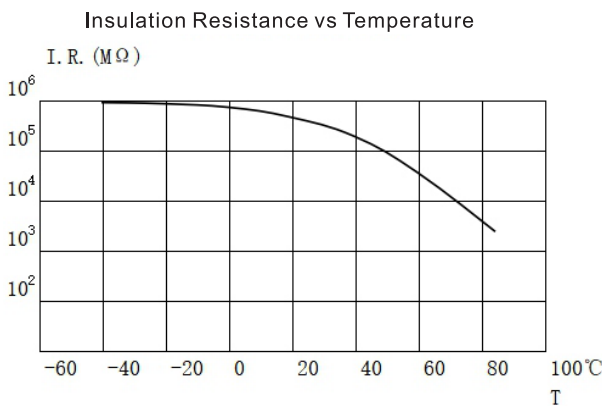
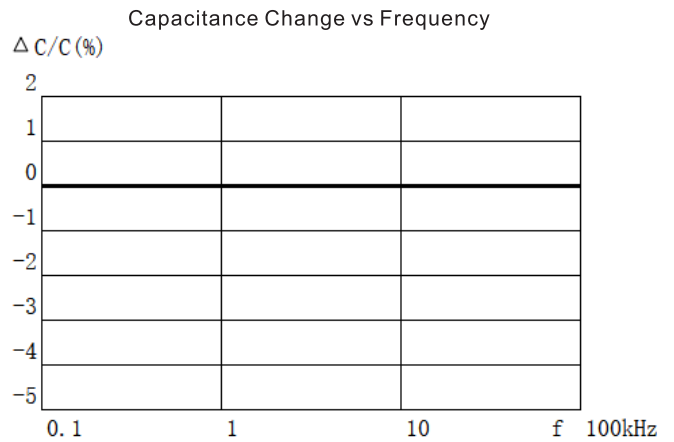
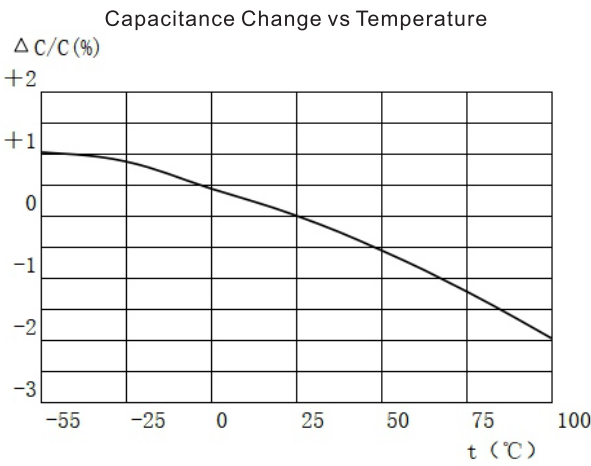
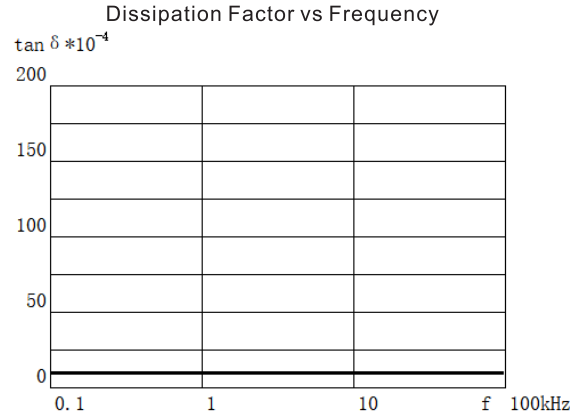
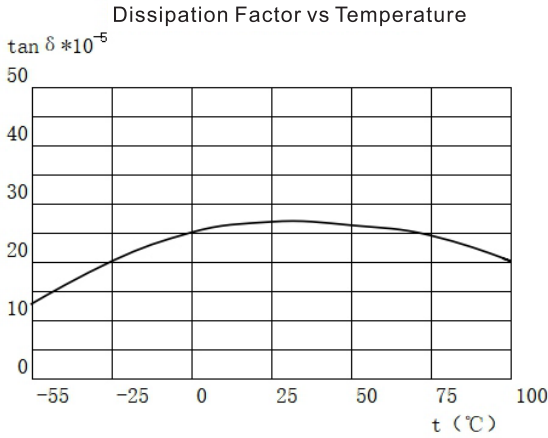
### ■ RATINGS & DIMENSIONS (mm) continued...

( $\mu$ F)	Working Voltage	630Vdc (2J)				
		400Vac				
	Code	W	H	T	P	d
0.001	102	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0012	122	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0015	152	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0018	182	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0022	222	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0027	272	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0033	332	7.2	7.5	3.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0039	392	7.2	9.5	4.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0047	472	7.2	9.5	4.5	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0056	562	7.2	10.0	5.0	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0068	682	7.2	10.0	5.0	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.0082	822	7.2	11.0	6.0	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.01	103	7.2	11.0	6.0	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.012	123	7.2	11.0	6.0	5.0	0.5
		10.5	9.0	4.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.015	153	10.5	11.0	5.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.018	183	10.5	11.0	5.0	7.5	0.6
		13.0	9.0	4.0	10.0	0.6
0.022	223	10.5	11.0	5.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6

( $\mu$ F)	Working Voltage	630Vdc (2J)				
		400Vac				
	Code	W	H	T	P	d
0.027	273	10.5	12.0	6.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.033	333	10.5	12.0	6.0	7.5	0.6
		13.0	11.0	5.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.039	393	13.0	12.0	6.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.047	473	13.0	12.0	6.0	10.0	0.6
		17.5	11.0	5.0	15.0	0.8
0.056	563	17.5	11.0	5.0	15.0	0.8
0.068	683	17.5	12.0	6.0	15.0	0.8
0.082	823	17.5	12.0	6.0	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.1	104	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.12	124	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.15	154	17.5	13.5	7.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.18	184	17.5	14.5	8.5	15.0	0.8
		26.5	15.0	6.0	22.5	0.8
0.22	224	17.5	16.0	10.0	15.0	0.8
		26.5	16.0	7.0	22.5	0.8
0.27	274	17.5	19.0	11.0	15.0	0.8
		26.5	17.0	8.5	22.5	0.8
0.33	334	17.5	19.0	11.0	15.0	0.8
		26.5	17.0	8.5	22.5	0.8
0.39	394	26.5	18.5	10.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
0.47	474	26.5	18.5	10.0	22.5	0.8
		32.0	18.0	9.0	27.5	0.8
0.56	564	26.5	20.0	11.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
0.68	684	26.5	22.0	12.0	22.5	0.8
		32.0	20.0	11.0	27.5	0.8
0.82	824	32.0	20.0	11.0	27.5	0.8
1	105	32.0	22.0	13.0	27.5	0.8
1.2	125	32.0	24.5	15.0	27.5	0.8
1.5	155	32.0	28.0	14.0	27.5	0.8
1.8	185	32.0	33.0	18.0	27.5	0.8
2.2	225	32.0	33.0	18.0	27.5	0.8
2.7	275	32.0	37.0	22.0	27.5	0.8
3.3	335	32.0	37.0	22.0	27.5	0.8



■ **Vrms vs. FREQUENCY (Typical Value)**



■ **RADIAL TAPING**

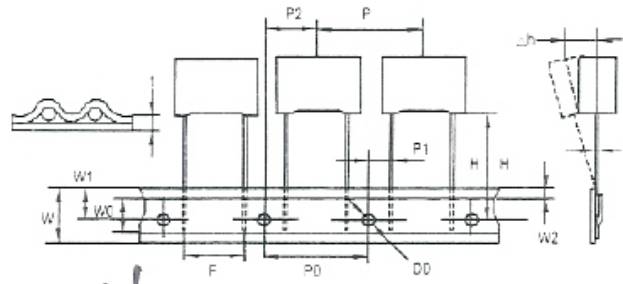


Fig.1 Box  
F=5 and 7.5mm  
(RT1 or RT2)

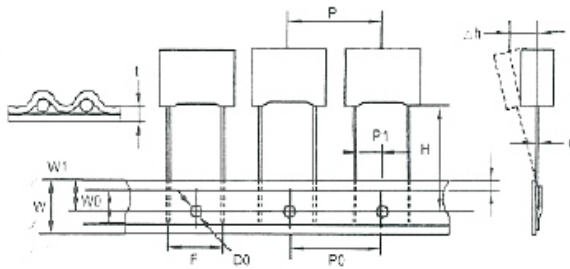


Fig. 2 Box  
Fitch=7.5mm  
Ammo Only  
(RT2)

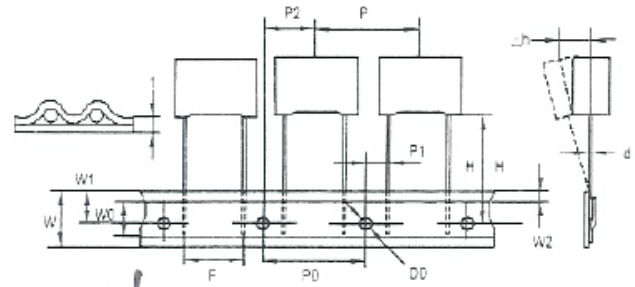


Fig. 3 Box or Epoxy Coated  
F=10 - Ammo Only  
F=15 Every other space skipped because  
of Larger body - Ammo Only  
(RT3 or RT4)

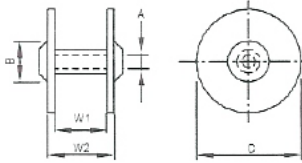
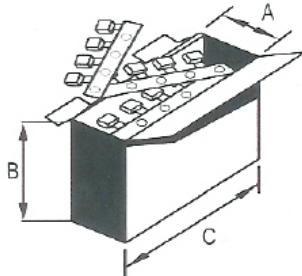
■ **SPECIFICATIONS**

Description	Letter	Dimension (mm)				
		RT1	RT2	RT3	RT4	Tol.
Lead Wire Diameter	d	0.5/0.6	0.5/0.6	0.6	0.6/0.8	±0.05
Tape Pitch	P	12.7	12.7	12.7	25.4	±1
Feed Hole Pitch	P0	12.7	12.7	12.7	12.7	±0.2
Centering of the Lead Wire	P1	3.85	2.6/3.75	7.7	5.2	±0.7
Centering of the Body	P2	6.35	6.35	12.7	12.7	±1.3
Lead Spacing	F	5	7.5	10	15	0
Component Alignment	Δh	0	0	0	0	±2
Height of Component from Tape Center	H	18.5	18.5	18.5	18.5	±0.5
Carrier Tape Width	W	18	18	18	18	+1;-0.5
Hold Down Tape Width	W0	6	6	9	10	Min
Hole Position	W1	9	9	9	9	±0.5
Hold Down Tape Position	W2	3	3	3	3	Max
Feed Hole Diameter	Do	4	4	4	4	±0.2
Tape Thickness	t	0.5	0.5	0.5	0.5	±0.2
Figure	fig	1	1 or 2	3	3	

Remark: \*Allowance of accumulated pitch less than 1mm at the sum of 20 pitches.  
\*Continuous empty component less than 3 consecutive pieces.  
\*Total empty on one reel less than 1%.



■ **PACKAGING**

Packaging Type	Reel Packing		Ammo Box Packing	
				
Dimensions unit: mm	A	14 ~ 30	A	50 <sup>+5</sup> <sub>-2</sub>
	B	80 min	B	260 <sub>+2</sub>
	D	370 max	C	330 <sub>+2</sub>
	W1	45 <sup>+5</sup> <sub>-2</sub>		
	W2	55max		
Packing Qty Per Reel/Box	C ≤ 0.022	C > 0.022	C ≤ 0.047	C > 0.047
	1,500 pcs	1,000 pcs	1,500 pcs	1,000 pcs