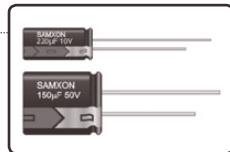


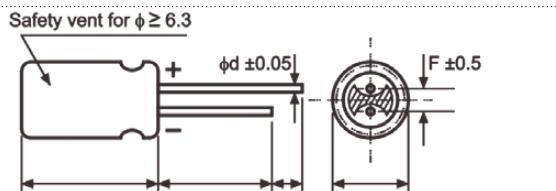
FEATURES

- Low impedance for high frequency.
- Life time: 1,000~4,000 hours at 105°C.

**SPECIFICATIONS**

Item	Performance Characteristics										
Operating Temperature Range	-40 to +105°C										
Rated Working Voltage Range	6.3 to 100V										
Nominal Capacitance Range	3.3 to 4700μF										
Capacitance Tolerance	±20% at 120Hz, +20°C										
Leakage Current	I ≤ 0.01CV or 3 (μA) whichever is greater measured after 2 minutes application of rated working voltage at +20°C										
tan δ (120Hz, +20°C)	Working Voltage (V)	6.3	10	16	25	35	50	63	100		
	tan δ (max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08		
	For capacitance value >1000μF, add 0.02 per another 1000μF										
Low Temperature Characteristics		Impedance ratio max. at 120Hz									
	Working Voltage (V)	6.3	10	16	25	35	50	63	100		
	Z-25°C / Z+20°C	4	3	2	2	2	2	2	2		
	Z-40°C / Z+20°C	8	6	4	3	3	3	3	3		
High Temperature Loading		Test time : 	L ≤ 7	D5-6.3	D8-10	D12.5	Post test requirements at +20°C				
		Load life	1,000h	2,000h	3,000h	4,000h	Leakage current : ≤Initial specified value				
	Test temperature : +105°C	Cap. change : within ±25% of the initial measured value									
	Test conditions : Rated DC working voltage with rated ripple current	tan δ : ≤150% of the initial specified value									
Shelf Life		At +105°C no voltage applied after 1,000 hours and then being stabilized at +20°C the capacitors shall meet the following limits									
	Leakage current : ≤Initial specified value	Cap. change : within ±25% of the initial measured value									
	tan δ : ≤150% of the initial specified value										
Industrial Standard		JIS C - 5101-4 (IEC 60384-4)									

CASE SIZE TABLE

Safety vent for $\phi \geq 6.3$		Unit : mm						
								
ϕD	4	5	6.3	8 (L < 20)	8 (L ≥ 20)	10	12.5	
F	1.5	2.0	2.5	3.5	3.5	5.0	5.0	
ϕd	0.45	(L ≤ 7) 0.45	(L ≥ 9) 0.50	0.6	0.6	0.6	0.6	
α	(L ≤ 7) 1 (L ≥ 9 < 20) 1.5 (L ≥ 20) 2.0							
β	(D < 20) 0.5 (D ≥ 20) 1.0							

PART NUMBER SYSTEM (EXAMPLE : 6.3V 1000μF)

1	2 3	4 5 6	7	8 9	10	11 12	13 14	
E	GF	108	M	0J	G	1B	RR	

Type (Radial Bulk)
 Case Length (12.5mm)
 Diameter (10mm)
 Voltage (6.3V)
 Tolerance (±20%)
 Capacitance (1000μF)
 Series
 E-CAP

STANDARD RATINGS

Voltage (Code)		6.3V (0J)			10V (1A)			16V (1C)		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
10	106							4 x 5	5.000	50
15	156							4 x 7	3.300	70
								5 x 5	2.600	80
22	226	4 x 5	5.000	50	4 x 7	3.300	70	5 x 7	1.700	110
					5 x 5	2.600	80	5 x 5	2.600	80
33	336	5 x 5	2.600	80	5 x 5	2.600	80	6.3 x 5	1.300	115
		5 x 7	1.700	110	5 x 7	1.700	110	6.3 x 7	0.800	160
47	476	5 x 5	2.600	80	6.3 x 5	1.300	115	6.3 x 5	1.300	115
		5 x 7	1.700	110	6.3 x 7	0.800	160	6.3 x 7	0.800	160
68	686	6.3 x 5	1.300	115	6.3 x 7	0.800	160	8 x 7	0.500	200
		6.3 x 7	0.800	160						
100	107	6.3 x 5	1.300	115	8 x 7	0.500	200	6.3 x 11	0.220	340
		6.3 x 7	0.800	160				8 x 7	0.500	200
120	127							6.3 x 11	0.220	340
150	157	8 x 7	0.500	200	6.3 x 11	0.220	340	6.3 x 11	0.220	340
					8 x 7	0.500	200	8 x 12	0.130	640
180	187	6.3 x 11	0.220	340	6.3 x 11	0.220	340	6.3 x 11	0.220	340
		8 x 7	0.500	200				8 x 12	0.130	640
220	227	6.3 x 11	0.220	340	6.3 x 11	0.220	340	6.3 x 11	0.220	340
								8 x 12	0.130	640
270	277	6.3 x 11	0.220	340	6.3 x 11	0.220	340	8 x 12	0.130	640
					8 x 12	0.130	640			
330	337	6.3 x 11	0.220	340	6.3 x 11	0.220	340	6.3 x 11	0.220	340
		8 x 12	0.130	640	8 x 12	0.130	640	8 x 12	0.130	640
390	397	8 x 12	0.130	640	8 x 12	0.130	640	8 x 12	0.130	640
					6.3 x 11	0.220	340	8 x 12	0.130	640
470	477	8 x 12	0.130	640	8 x 12	0.130	640	10 x 12.5	0.080	865
560	567	8 x 12	0.130	640	8 x 12	0.130	640	10 x 12.5	0.080	865
								8 x 16	0.087	840
680	687	8 x 12	0.130	640	8 x 12	0.130	640	10 x 12.5	0.080	865
820	827	8 x 12	0.130	640	10 x 12.5	0.080	865	10 x 16	0.060	1210
		10 x 12.5	0.080	865						
1000	108	8 x 12	0.130	640	8 x 16	0.087	840	8 x 16	0.087	840
		10 x 12.5	0.080	865	10 x 16	0.060	1210	10 x 16	0.060	1210
1200	128	8 x 16	0.087	840	10 x 20	0.046	1400	10 x 20	0.046	1400
		10 x 12.5	0.080	865						
1500	158	8 x 20	0.069	1050	10 x 20	0.046	1400	10 x 20	0.046	1400
		10 x 16	0.060	1210						
1800	188	10 x 20	0.046	1400	10 x 20	0.046	1400	10 x 25	0.042	1650
								12.5 x 20	0.035	1900
2200	228	10 x 20	0.046	1400	10 x 20	0.046	1400	10 x 25	0.042	1650
								12.5 x 20	0.035	1900
2700	278	10 x 25	0.042	1650	10 x 25	0.042	1650	12.5 x 25	0.030	2124
		12.5 x 20	0.035	1900	12.5 x 20	0.035	1900			
3300	338	10 x 25	0.042	1650	12.5 x 25	0.030	2124	12.5 x 25	0.030	2124
		12.5 x 20	0.035	1900						
3900	398	12.5 x 20	0.035	1900						
4700	478	12.5 x 25	0.030	2124						

Maximum Allowable Ripple Current (mAmps) at 105°C 100kHz

Case Size φD x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

STANDARD RATINGS

Voltage (Code)		25V (1E)			35V (1V)			50V (1H)		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
3.3	335				4 x 5	5.000	50			
4.7	475	4 x 5	5.000	50	4 x 5	5.000	50			
6.8	685	4 x 5	5.000	50	4 x 7	3.300	70			
					5 x 5	2.600	80			
10	106	4 x 7	3.300	70	5 x 5	2.600	80			
		5 x 5	2.600	80	5 x 7	1.700	110			
15	156	5 x 7	1.700	110	6.3 x 5	1.300	115			
		6.3 x 5	1.300	115	6.3 x 7	0.800	160			
22	226	5 x 7	1.700	110	6.3 x 5	1.300	115			
		6.3 x 5	1.300	115	6.3 x 7	0.800	160			
33	336	6.3 x 5	1.300	115				6.3 x 11	0.300	295
		6.3 x 7	0.800	160	8 x 7	0.500	200	6.3 x 11	0.300	295
39	396							6.3 x 11	0.300	295
47	476	8 x 7	0.500	200	6.3 x 11	0.220	340	6.3 x 11	0.300	295
56	566				6.3 x 11	0.220	340	8 x 12	0.170	555
68	686	8 x 7	0.500	200	6.3 x 11	0.220	340	8 x 12	0.170	555
82	826	6.3 x 11	0.220	340	8 x 12	0.130	640	8 x 12	0.170	555
100	107	6.3 x 11	0.220	340	6.3 x 11	0.220	340	10 x 12.5	0.120	760
					8 x 12	0.130	640			
120	127	8 x 12	0.130	640	8 x 12	0.130	640	8 x 16	0.120	730
								10 x 12.5	0.120	760
150	157	8 x 12	0.130	640	8 x 12	0.130	640	10 x 16	0.084	1050
180	187	8 x 12	0.130	640	10 x 12.5	0.080	865	8 x 20	0.091	910
								10 x 16	0.084	1050
220	227	8 x 12	0.130	640	8 x 12	0.130	640	8 x 20	0.091	910
					8 x 16	0.087	840			
					8 x 16	0.080	865	10 x 16	0.084	1050
270	277	8 x 12	0.130	640	10 x 16	0.060	1210	10 x 25	0.055	1440
		10 x 12.5	0.080	865						
330	337	8 x 12	0.130	640	8 x 16	0.087	840			
					8 x 20	0.069	1050			
		10 x 12.5	0.080	865	10 x 12.5	0.080	865	12.5 x 20	0.045	1660
					10 x 16	0.060	1210			
390	397	10 x 12.5	0.080	865	10 x 16	0.060	1210	12.5 x 20	0.045	1660
		8 x 16	0.087	840	10 x 16	0.060	1210			
470	477	10 x 12.5	0.080	865				12.5 x 25	0.034	1950
		10 x 16	0.060	1210	10 x 20	0.046	1400			
560	567	10 x 16	0.060	1210	10 x 20	0.046	1400	12.5 x 25	0.034	1950
680	687	10 x 16	0.060	1210	10 x 20	0.046	1400			
		10 x 20	0.046	1400	12.5 x 20	0.035	1900			
820	827	10 x 20	0.046	1400	10 x 25	0.042	1650			
					12.5 x 20	0.035	1900			
1000	108	10 x 20	0.046	1400	12.5 x 20	0.035	1900			
					12.5 x 25	0.030	2124			
1200	128	10 x 20	0.046	1400						
		10 x 25	0.042	1650						
1500	158	12.5 x 20	0.035	1900						
1800	188	12.5 x 25	0.030	2124						
2200	228	12.5 x 25	0.030	2124						

Maximum Allowable Ripple Current (mA rms) at 105°C 100kHz

Case Size φD x L (mm)

Maximum Impedance (Ω) at 20°C 100kHz

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

STANDARD RATINGS

Voltage (Code)		63V (1J)			100V (2A)		
Cap. (μF)	Code	Case Size	Impedance	Ripple Current	Case Size	Impedance	Ripple Current
15	156				6.3 x 11	0.960	115
22	226	6.3 x 11	0.960	115			
27	276	6.3 x 11	0.960	115	8 x 12	0.504	232
33	336	6.3 x 11	0.960	115			
39	396	8 x 12	0.504	232	8 x 16	0.360	300
47	476	8 x 12	0.504	232	10 x 12.5	0.344	314
56	566	8 x 12	0.504	232	8 x 20	0.264	362
68	686	8 x 12	0.504	232	10 x 16	0.248	357
82	826	10 x 12.5	0.344	314	10 x 20	0.168	466
		8 x 16	0.360	300	10 x 20	0.168	466
100	107	10 x 12.5	0.344	314	12.5 x 20	0.128	690
		8 x 16	0.360	300			
		10 x 16	0.248	357	12.5 x 20	0.128	690
120	127	8 x 20	0.264	362			
150	157	10 x 20	0.168	466	12.5 x 25	0.096	922
180	187	10 x 16	0.248	357			
220	227	10 x 20	0.168	466	12.5 x 25	0.096	922
270	277	12.5 x 20	0.128	690			
330	337	12.5 x 20	0.128	690			
390	397	12.5 x 25	0.096	922			

Maximum Allowable Ripple Current (mA rms) at 105°C 100kHz

Case Size ϕ D x L (mm)Maximum Impedance (Ω) at 20°C 100kHz

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient Cap (μF)	Freq. (Hz)	120	1k	10k	100k
≤180		0.40	0.75	0.90	1.00
220~560		0.50	0.85	0.94	1.00
680~1800		0.60	0.87	0.95	1.00
2200~3900		0.75	0.90	0.95	1.00
4700		0.85	0.95	0.98	1.00

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.

Part Number System (產品編碼)

1	2 3	4 5 6	7	8 9	10 11 12	13 14	15 16	17
E CATEGORY	G S SERIES	1 0 5 CAPACITANCE	M TOLERANCE	1 H VOLTAGE	D 1 1 CASE SIZE	T C TYPE	S A SAMXON PRODUCT LINE	P SLEEVE MATERIAL
Category	Code	Series	Cap (uF)	Code	Tol. (%)	Code	Vol. (W.V.)	Code
ECap	E	KF	0.1	104	+5	J	2	0D
ECap	A	KS	0.22	224	±10	K	2.5	0E
V-Chip	V	GS	0.33	334	±15	L	4	0G
		KM	0.47	474	±20	M	6.3	0J
		KG	1	105	±30	N	8	0K
		OM	2.2	225	-40	0	10	1A
		GF	3.3	335	-20	0	12.5	1B
		SF	4.7	475	+20	A	16	1C
		GT	10	106	-20	0	20	1D
		GK	22	226	+10	C	25	1E
		SK	33	336	-20	X	30	1I
		SH	47	476	+40		32	13
		SK	100	107	-20		35	1V
		RS	220	227	+50	S	40	1G
		GY	330	337	-10	0	42	1M
		RF	470	477	+10	B	50	1H
		RR	2200	228	-10		57	1L
		RT	22000	229	+20	V	63	1J
		RE	33000	339	-10		71	1S
		RD	47000	479	+30	Q	75	1T
		RH	100000	10T	-10		80	1K
		BD	150000	15T	+50	T	85	1R
		RA	220000	22T	+13	E	90	19
		RB	330000	33T	-5		100	2A
		RC	1000000	10M	+15	F	120	2O
		FA	1500000	15M	-5		125	2B
		NP	2200000	22M	+20	G	150	2Z
		NH	3300000	33M	0		160	2C
		RW			+20	R	180	2P
		RY			0		200	2D
		LP			+30	O	215	22
		AP			0		220	2N
		QP			+50	I	230	23
		DP			+5		250	2E
		TP			+15	Z	275	2T
		HP			+5		300	2I
		UP			+20	D	310	2R
		KP			+10		315	2F
		PK			+50	H	330	2U
		P					350	2V
		FP					360	2X
		SP					375	2Q
		VP					385	2Y
		GP					400	2G
		WR					420	2M
		WI					450	2W
		WT					500	2H
		WX					550	25
		WF					600	26
		WH					630	2J
		WL					35	35
		WB					35.5	3E
		S1					50	50
		T1					80	80
		TD					100	1L
		TG					105	1K
		Z2					110	1M
		TL					120	1N
							130	1P
							140	1Q
							150	1R
							155	1E
							160	1S
							165	1F
							170	1T
							180	1U
							190	1V
							200	2L
							215	2A
							210	2M
							220	2N
							240	2Q
							250	2R
							260	2S
							270	2T

* Automotive

Taping Specifications (編帶產品規格)

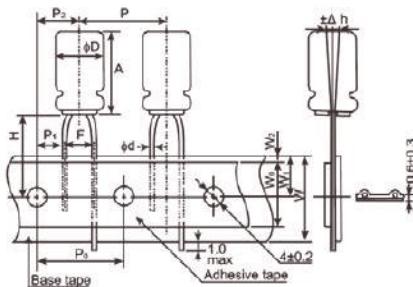


Fig-1

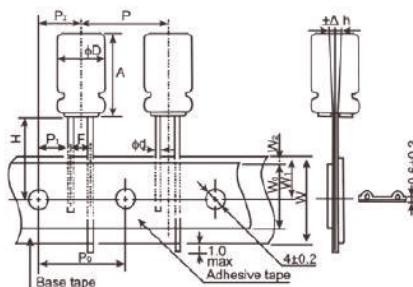


Fig-2

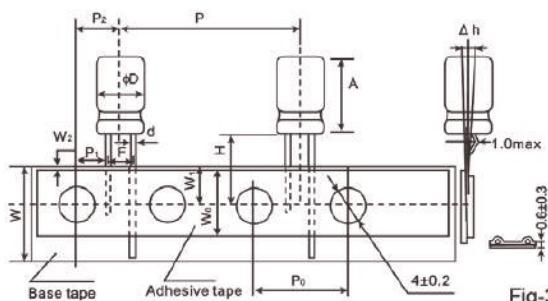


Fig-3

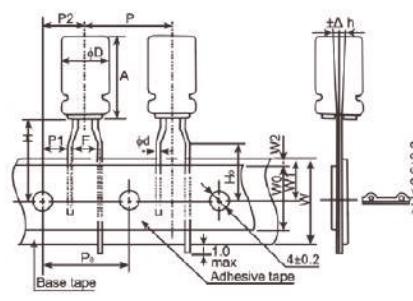
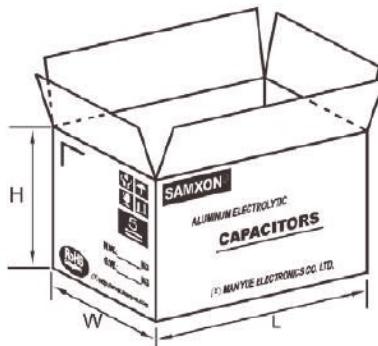


Fig-4

SPECIFICATIONS

Item	Dimensions (mm)													
Reference figure	Fig 1				Fig 2				Fig 3				Fig 4	Tol.
Diameter	D	3	4~5	5	6.3	8	10	12.5	16, 18	4, 5, 6.3	5, 6.3	8		
Height	A	5	5~7	9~15	5~7	9~15	11~20	9~21	15~35	15~40	5~7	9~15	5~9	11~20
Lead Diameter	d	0.4	0.45	0.5	0.45	0.5	0.5	0.6	0.6	0.8	0.45	0.5	0.45	0.5
Component Spacing	P	12.7				12.7				12.7				±0.05
Pitch of sprocket holes	P ₀	12.7				12.7				12.7				±0.2
Distance between centres of component leads	F	2.5				2.5				3.5				±0.8
Carrier tape width	W	18.0				18.0				18.0				±0.5
Distance between the center of upper edge of carrier tape and sprocket holes	W ₁	9.0				9.0				9.0				±0.5
Distance between the abscissa and the bottom of the components body	H	18.5				18.5				18.5				±0.75
Distance between the abscissa and the reference plane of the components with crimped leads	H ₀	-				-				-				±0.5
Hold down tape width	W ₀	7.0				7.0				7.0				Min.
Max. lateral deviation of the component body vertical to the tape plane	Δh	0				0				0				±1.0
Distance between the upper edges of the carrier tape and the hold down tape	W ₂	0~3				0~3				0~3				-
Distance between center of terminal and the sprocket holes	P ₁	5.1				5.1				4.6				±0.5
Distance between center of the component and sprocket holes	P ₂	6.35				6.35				6.35				±1.0

Packing Specifications (包裝規格)



PACKING QUANTITY (TAPING TYPE)

$\phi D \times L$ (mm)	L (mm)	W (mm)	H (mm)	Inner Box Quantity	Outer Box Quantity
3 x 5	330	229	51	3,000	30,000
4 x 5 ~ 7	330	229	51	2,500	25,000
5 x 5 ~ 11	330	229	51	2,000	20,000
6.3 x 5 ~ 12	330	229	51	1,500	15,000
8 x 5 ~ 12	330	229	51	1,000	10,000
8 x 14 ~ 20	330	229	64	1,000	8,000
10 x 12.5	330	191	51	500	5,000
10 x 16	330	191	56	500	5,000
10 x 20 ~ 25	323	191	64	500	4,000
10 x 30	330	191	69	500	4,000
12.5 x 20	325	267	58	500	2,000
12.5 x 25	325	270	63	500	2,000
12.5 x 35	325	270	74	500	2,000
16 x 25	315	221	63	250	1,000
16 x 30 ~ 35	315	221	76	250	1,500
18 x 20 ~ 25	343	275	63	250	1,000
18 x 30 ~ 35	343	275	73	250	500
18 x 40	343	275	73	250	500

PACKING QUANTITY (BULK TYPE)

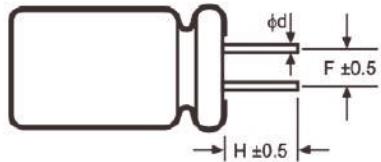
Long Lead Wire Product $\phi D \times L$ (mm)	Plastic Bag Quantity	Inner Box Quantity	Outer Box Quantity
3 x 5	1,000	24,000	96,000
4 x 5	1,000	16,000	64,000
4 x 7	1,000	14,000	56,000
5 x 5	1,000	12,000	48,000
5 x 7	1,000	10,000	40,000
5 x 11	1,000	8,000	32,000
6.3 x 5 ~ 7	1,000	8,000	32,000
6.3 x 11	1,000	6,000	24,000
8 x 5 ~ 7	1,000	6,000	24,000
8 x 9	500	4,000	16,000
8 x 10 ~ 16	500	3,000	12,000
8 x 20	200	1,600	6,400
8 x 25	200	1,200	4,800
10 x 12.5	400	2,400	9,600
10 x 15 ~ 20	200	1,200	7,200
10 x 25 ~ 30	200	1,200	4,800
12.5 x 20	150	1,200	4,800
12.5 x 25	150	900	3,600
12.5 x 30 ~ 35	100	600	2,400
12.5 x 40	—	300	1,800
16 x 20	—	200	2,000
16 x 25 ~ 30	—	200	1,600
16 x 35 ~ 40	—	200	1,200
18 x 15 ~ 20	—	150	1,500
18 x 25 ~ 30	—	150	1,200
18 x 35 ~ 50	—	150	900

PACKING QUANTITY (SNAP-IN)

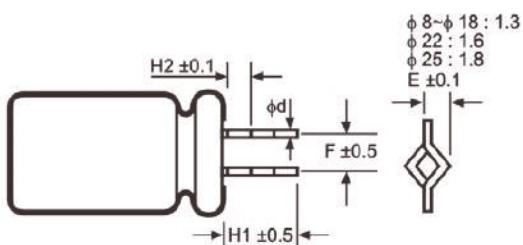
Snap-in Terminal Product $\phi D \times L$ (mm)	Inner Box Quantity	Outer Box Quantity	$\phi D \times L$ (mm)	Inner Box Quantity	Outer Box Quantity
20 x 25	100	1,200	25 x 30 ~ 35	100	800
20 x 30 ~ 40	100	1,000	25 x 40 ~ 50	100	600
22 x 25	100	1,200	30 x 30 ~ 35	50	500
22 x 30 ~ 40	100	1,000	30 x 40 ~ 50	50	400
22 x 45 ~ 50	100	800	35 x 30 ~ 35	40	400
25 x 25	100	1,000	35 x 40 ~ 50	40	320



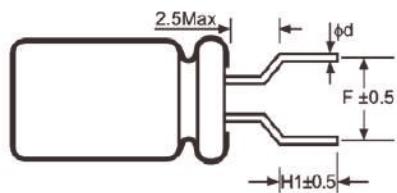
Lead Forming Specifications (成型產品規格)



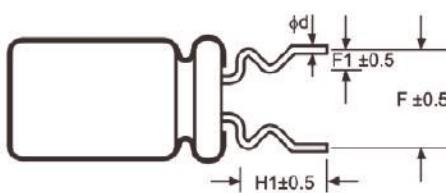
TYPE CB



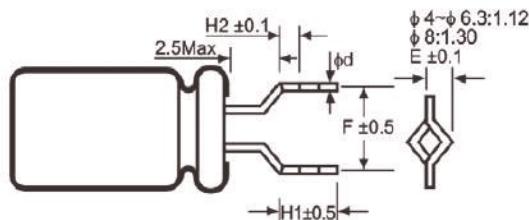
TYPE KD



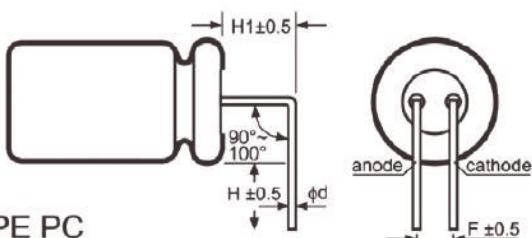
TYPE HE



TYPE EC



TYPE FD



TYPE PC

SHAPE CODE	ΦD	4	5	6.3	8 (L > 5mm)	10	13	16	18
CB	F	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5
	H	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	Φd ± 0.05	0.45	0.5	0.5	0.5	0.6	0.6	0.8	0.8
HE	F	5.0	5.0	5.0	5.0	—	—	—	—
	H1	5.0	5.0	5.0	5.0	—	—	—	—
	Φd ± 0.05	0.45	0.5	0.5	0.5	—	—	—	—
FD	F	5.0	5.0	5.0	5.0	—	—	—	—
	H1	4.5	4.5	4.5	4.5	—	—	—	—
	H2	1.8	1.8	1.8	1.8	—	—	—	—
	Φd ± 0.05	0.45	0.5	0.5	0.5	—	—	—	—
	E	1.12	1.12	1.12	1.30	—	—	—	—
KD	F	—	—	—	—	5.0	5.0	7.5	7.5
	H1	—	—	—	—	4.5	4.5	4.5	4.5
	H2	—	—	—	—	2.0	2.0	2.0	2.0
	Φd ± 0.05	—	—	—	—	0.6	0.6	0.8	0.8
	E	—	—	—	—	1.30	1.30	1.30	1.30
EC	F	5.0	5.0	5.0	5.0	—	—	—	—
	F1	1.2	1.2	1.2	1.2	—	—	—	—
	H1	4.0	4.0	4.0	4.0	—	—	—	—
	Φd ± 0.05	0.45	0.5	0.5	0.5	—	—	—	—
PC	F	—	2.0	2.5	3.5	5.0	5.0	7.5	7.5
	H	—	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	H1	—	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Φd ± 0.05	—	0.5	0.5	0.5	0.6	0.6	0.8	0.8