

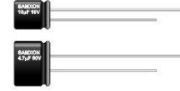
NM Series

SAMXON®

5mmL(高), Nonpolar(無極性)

FEATURES

1. Nonpolar and super miniature product, 5mm height, suitable for use in polarity and change circuits.



SPECIFICATIONS

Item	Performance Characteristics						
Operating Temperature Range	-40 to +85°C						
Rated Working Voltage Range	6.3 to 50V						
Nominal Capacitance Range	0.1 to 47μF						
Capacitance Tolerance	±20% (120Hz, +20°C)						
Leakage Current	I ≤ 0.05CV or 10(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					
	tan δ (max.)	0.24 0.20 0.17 0.17 0.15 0.15					
Low Temperature Characteristics	Impedance ratio max. at 120Hz						
	Working Voltage (V)	6.3	10	16	25	35	50
	Z-25°C / Z+20°C	4	3	2	2	2	2
	Z-40°C / Z+20°C	8	6	4	4	3	3
High Temperature Loading	Test conditions			Post test requirements at +20°C			
	Duration	: 1000 hours		Leakage current	: ≤ Initial specified value		
	Ambient temp.	: +85°C		Cap. change	: within ±20% of initial measured value		
	Applied voltage	: Rated DC working voltage to polarity every 250 hours		tan δ	: ≤ 200% of initial specified value		
Shelf Life	Test conditions			Post test requirements at +20°C			
	Duration	: 1000 hours		Leakage current	: ≤ Initial specified value		
	Ambient temp.	: +85°C		Cap. change	: within ±20% of initial measured value		
	Applied voltage	: (None)		tan δ	: ≤ 200% of initial specified value		
Others	JIS C - 5101 (IEC 60384)						

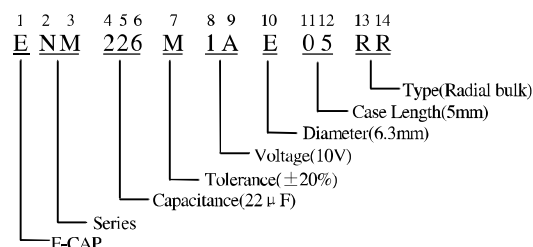
CASE SIZE TABLE

	φD	4	5	6.3				
	F	1.5	2.0	2.5				
	φd		0.45					

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient						
Cap(μF)	Coefficient	50	120	300	1k	10k~
~ 47		0.75	1.00	1.35	1.57	2.00

PART NUMBER SYSTEM(EXAMPLE:10V22μF)



NM

Miniature Aluminum Electrolytic Capacitors

NM Series

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5mmL(高), Nonpolar(無極性)

STANDARD RATINGS

Voltage (Code)		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)	
Cap.(μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.1	104								
0.22	224								
0.33	334								
0.47	474								
1	105								
2.2	225								
3.3	335							5 x 5	12
4.7	475					4 x 5	12	5 x 5	16
10	106			4 x 5	17	5 x 5	23	6.3 x 5	27
22	226	5 x 5	28	6.3 x 5	33	6.3 x 5	37		
33	336	6.3 x 5	37	6.3 x 5	41	6.3 x 5	49		
47	476	6.3 x 5	45						

Maximum Allowable Ripple Current (mA rms) at 85°C 120Hz

Case Size φD x L(mm)

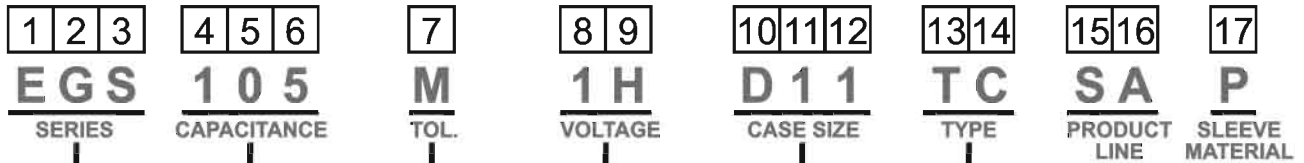
Voltage (Code)		35V (1V)		50V (1H)					
Cap.(μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current				
0.1	104			4 x 5	1.0				
0.22	224			4 x 5	2.0				
0.33	334			4 x 5	2.8				
0.47	474			4 x 5	4.0				
1	105			4 x 5	8.4				
2.2	225	4 x 5	8.4	5 x 5	13				
3.3	335	5 x 5	16	5 x 5	17				
4.7	475	5 x 5	18	6.3 x 5	20				
10	106	6.3 x 5	29						
22	226								
33	336								
47	476								

Maximum Allowable Ripple Current (mA rms) at 85°C 120Hz

Case Size φD x L(mm)

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)



Series	Cap(MFD)	Code	Tolerance (%)	Code	Voltage (W.V.)	Code	Case Size	Feature	Code	Product Line	Sleeve Material	Code
ESM	0.1	104	±5	J	4	0G	Eg. 5mmx11mm D 11 Diameter Code Case Length Diameter(φ) Code	Radial bulk	RR	Basically, all our products are complied with RoHS directive, if the customer ask for better differentiation of our RoHS products for their internal use, the 15th digital can be changed to "R" upon request.	PET	P
FTM					6.3	0J		3 B	Ammo Taping			
FKF	0.22	224	±10	K	10	1A	4 C					
ESS					0.47	474		+10	-20			
EFS	1	105	±15	L			20					
EKS					2.2	225	±30	N	25			
EBS	3.3	335	±20	M					35			
EGR					4.7	475	+100	0	P			
EGS	10	106	±30	N								
EKM					22	226	+30	-10	Q			
EKG	33	336	+20	0						R	57	1L
EZM					47	476	+50	-10	T		63	1J
EZS	100	107	+75	-10						U	71	1S
EGZ					125	1B7	+20	0	R		75	1T
EGF	220	227	+50	-10						T	80	1K
EGK					330	337	+75	-10	U		85	1R
EGE	470	477	+20	-10						V	100	2A
EGD					2200	228	+20	-10	V		125	2B
EGC	22000	229	+100	-10						W	150	2Z
EGA					47000	479	+40	-20	X		160	2C
ERS	100000	10T	+50	-20						S	180	2P
ERF					150000	15T	+80	-20	Z		120 1N	2D
ERL	220000	22T	+50	-20						S	140 1Q	
ERR					470000	47T	+20	-10	V		150 1R	2E
ERT	1500000	15M	+100	-10						W	170 1T	
ERD					2200000	22M	+20	-10	V		180 1U	2G
EBD	330000	33T	+20	-10						V	190 1V	
ELM					1000000	10M	+20	-10	V		200 2L	2E
ELF	1500000	15M	+20	-10						V	210 2M	
ELS					2200000	22M	+20	-10	V		220 2N	2E
ELZ	3300000	33T	+20	-10						V	250 2E	
ELK					10000000	10M	+20	-10	V		270 2T	2E
ELL	15000000	15M	+20	-10						V	375 2Q	
ELT					22000000	22M	+20	-10	V		385 2Y	2E
ELN	33000000	33T	+20	-10						V	400 2G	
EFM					47000000	47T	+20	-10	V		420 2M	2E
EFS	150000000	15M	+20	-10						V	450 2W	
EFA					220000000	22M	+20	-10	V		500 2H	2E
EFN	330000000	33T	+20	-10						V	550 25	
ENM					470000000	47T	+20	-10	V		600 26	2E
ENS	1500000000	15M	+20	-10						V	630 2J	
ENQ					2200000000	22M	+20	-10	V			2E
ENP	3300000000	33T	+20	-10						V		
ENH					4700000000	47T	+20	-10	V			2E
EBP	15000000000	15M	+20	-10						V		
EBH					22000000000	22M	+20	-10	V			2E
EPF	33000000000	33T	+20	-10						V		
EPS					47000000000	47T	+20	-10	V			2E
ELP	150000000000	15M	+20	-10						V		
EAP					220000000000	22M	+20	-10	V			2E
EHP	330000000000	33T	+20	-10						V		
EKP					470000000000	47T	+20	-10	V			2E
EFP	1500000000000	15M	+20	-10						V		
ESP					2200000000000	22M	+20	-10	V			2E
EWR	3300000000000	33T	+20	-10						V		
EWT					4700000000000	47T	+20	-10	V			2E
EWX	15000000000000	15M	+20	-10						V		
EWY					22000000000000	22M	+20	-10	V			2E
EWZ	33000000000000	33T	+20	-10						V		
EVH					47000000000000	47T	+20	-10	V			2E
VSS	150000000000000	15M	+20	-10						V		
VNS					220000000000000	22M	+20	-10	V			2E
VKS	330000000000000	33T	+20	-10						V		
VKM					470000000000000	47T	+20	-10	V			2E
VNH	1500000000000000	15M	+20	-10						V		
VZS					2200000000000000	22M	+20	-10	V			2E
VRF	3300000000000000	33T	+20	-10						V		
					4700000000000000	47T	+20	-10	V			2E
	15000000000000000	15M	+20	-10						V		
					22000000000000000	22M	+20	-10	V			2E

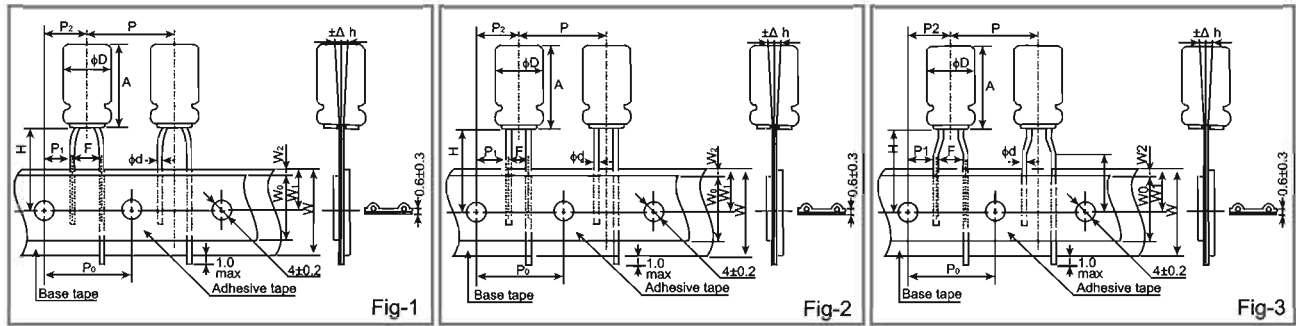
Index

Miniature

Large Can

V-Chip

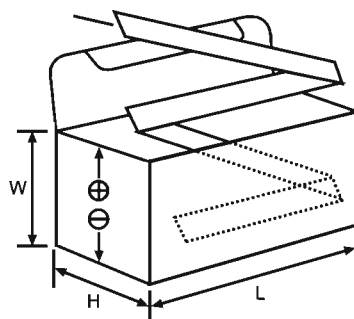
Tapping Specifications(編帶產品規格)



SPECIFICATIONS

Item		Dimension (mm)													
Reference figure		Fig 1		Fig 2						Fig 3				TOL.	
Diameter	D	4 ~ 5	5	6.3	8	10	12.5	16, 18	3	4, 5, 6.3	5, 6.3	8			
Height	A	5 ~ 7	9 ~ 15	5 ~ 7	9 ~ 15	11 ~ 20	9 ~ 21	15 ~ 35	15 ~ 40	5	5 ~ 7	9 ~ 15	5 ~ 9	11 ~ 20	
Lead Diameter	d	0.45	0.5	0.45	0.5	0.5	0.6	0.6	0.8	0.4	0.45	0.5	0.45	0.5	±0.05
Component Spacing	P	12.7		12.7	12.7	12.7	12.7	15	30	12.7	12.7		12.7		±1.0
Pitch of sprocket holes	P ₀	12.7		12.7	12.7	12.7	12.7	15	15	12.7	12.7		12.7		±0.2
Distance between centres of component leads	F	2.5		2.5	3.5	5.0	5.0	7.5		2.5	2.5	5.0	5.0		+0.8 -0.2
Carrier tape width	W	18.0		18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0		18.0		±0.5
Distance between the center of upper edge of carrier tape and sprocket hole	W ₁	9.0		9.0	9.0	9.0	9.0	9.0	9.0	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	18.5	18.5	18.5	18.5	18.5	17.5	18.5	17.5	20.0	+0.75 -0.5
Distance between the abscissa and the reference plane of the components with crimped leads	H ₀	---		---	---	---	---	---	---	16.0	16.0		16.0		±0.5
Hold down tape width	W ₀	7.0		7.0	7.0	7.0	15	15		7.0	7.0		7.0		Min.
Max. lateral deviation of the component body vertical to the tape plane	Δ h	0		0	0	0	0	0	0	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	0 ~ 3	0 ~ 3	0 ~ 3	0 ~ 3	0 ~ 3	0 ~ 3		0 ~ 3		---
Distance between center of terminal and the sprocket holes	P ₁	5.1		5.1	4.6	3.85	5.0	3.75		5.1	5.1 3.85		3.85		±0.5
Distance between center of the component and the sprocket holes	P ₂	6.35		6.35	6.35	6.35	7.5	7.5		6.35	6.35		6.35		±1.0

Packing Specifications(包裝規格)



PACKING QUANTITY (TAPPING TYPE)

φD x L (mm)	L (mm)	W (mm)	H (mm)	Inner Box Quantity	Outer Box Quantity
3 x 5	330	229	51	3000	30000
4 x 5~7	330	229	51	2500	25000
5 x 5~11	330	229	51	2000	20000
6.3 x 5~12	330	229	51	1500	15000
8 x 5~12	330	229	51	1000	10000
8 x 14~20	330	229	64	1000	8000
10 x 12.5	330	191	51	500	5000
10 x 16	330	191	56	500	5000
10 x 20~25	330	191	64	500	4000
10 x 30	330	191	69	500	4000
12.5 x 20	325	267	58	500	2000
12.5 x 25	325	270	63	500	2000
12.5 x 35	325	270	74	500	2000
16 x 25	315	221	63	250	1000
16 x 35	315	221	76	250	1500
18 x 20~25	343	275	63	250	1000
18 x 30~35	343	275	73	250	500
18 x 40	343	275	78	250	500

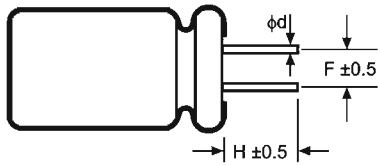
PACKING QUANTITY (BULK TYPE)

Long Lead Wire Product			
φD x L (mm)	Plastic Bag Quantity	Inner Box Quantity	Outer Box Quantity
3 x 5	2000 ‡	24000	96000
4 x 5~7	1000 ‡	16000	64000
5 x 5~7	1000 ‡	14000	56000
5 x 11	1000 ‡	10000	40000
6.3 x 5~7	1000 ‡	10000	40000
6.3 x 11	1000 ‡	8000	32000
8 x 5	1000 ‡	10000	40000
8 x 7~9, 6.3 x 15	500 †	6000	24000
8 x 12	500 †	5000	20000
10 x 12.5	500 †	3000	12000
8 x 20	250 †	2500	10000
10 x 15~17	200	2400	9600
10 x 18~26	250	2000	8000
10 x 25	200	1600	6400
10 x 30	150	1200	4800
10 x 35	100	1000	2000
12.5 x 20	200	1200	2400
12.5 x 25	100	1000	2000
12.5 x 30	100	600	1200
16 x 20~30	----	200	800
16 x 32~40	----	200	600
18 x 15~30	----	150	600
18 x 35~50	----	150	450

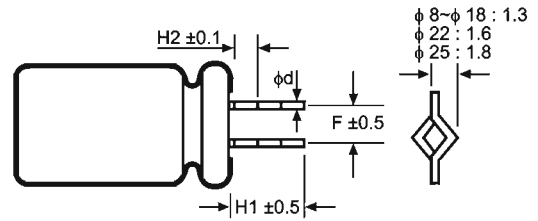
PACKING QUANTITY (SNAP-IN)

Snap-in Terminal Product					
φD x L (mm)	Inner Box Quantity	Outer Box Quantity	φD x L (mm)	Inner Box Quantity	Outer Box Quantity
22 x 20~40	100	400	30 x 20~40	100	400
22 x 45~60	100	300	30 x 45~60	100	300
25 x 20~40	100	400	35 x 20~40	100	400
25 x 45~60	100	300	35 x 45~60	100	300

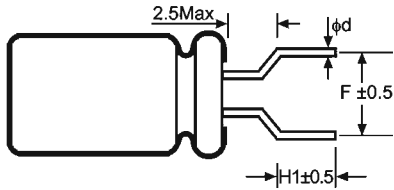
Lead Forming Specification(成型產品規格)



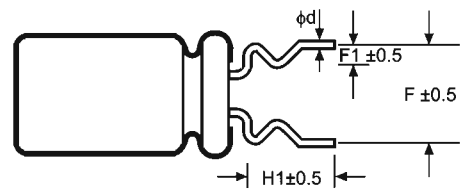
TYPE CE



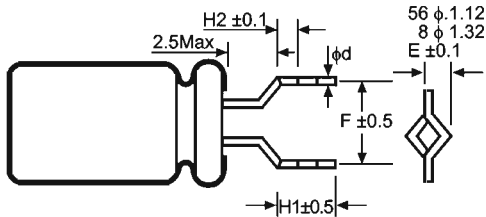
TYPE KD



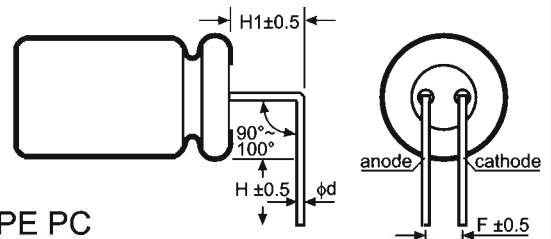
TYPE HE



TYPE EC



TYPE FD



TYPE PC

SHAPE CODE	φD	4	5	6.3	8(L > 5mm)	10	13	16	18
CE	F	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5
	H	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	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	2.0	2.0	2.0	2.0	---	---	---	---
	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	---	---	---	---	1.32	1.32	1.32	1.32
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	---	---	---	---
	H2	1.8	1.8	1.8	1.8	---	---	---	---
	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