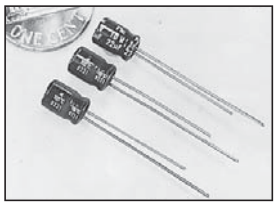
Miniature Aluminum Electrolytic Capacitors

NRE-SW Series

SUPER-MINIATURE, RADIAL LEADS, POLARIZED



FEATURES

- HIGH PERFORMANCE IN LOW PROFILE (7mm) HEIGHT
- GOOD 100KHz PERFORMANCE CHARACTERISTICS
- WIDE TEMPERATURE -55 TO + 105°C

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

CHARACTERISTICS

Rated Voltage Range	6.3 ~ 50VDC						
Capacitance Range	1.0 ~ 330µF						
Operating Temperature Range	-55°C ~ +105°C						
Capacitance Tolerance	±20% (M)						
Maximum Leakage Current After 1 minutes	.01CV or 3µA whichever is greater						
Max. Tan δ at 120Hz/20°C	W.V. (Vdc)	6.3	10	16	25	35	50
	S.V. (Vdc)	8	13	20	32	44	63
	Tan δ at 120Hz	0.24	0.21	0.18	0.14	0.12	0.10
Low Temperature Stability Impedance Ratio @ 120Hz	Z-40°C/Z+20°C	4	3	2	2	2	2
	Z-55°C/Z+20°C	6	5	4	3	3	3
Load Life Test 1,000 @ 105°C	Δ Capacitance	Within ±25% of initial measured value					
	Δ Tan δ	Less than 200% of specified value					
	Δ LC	Less than specified value					

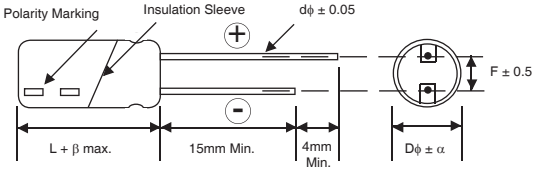
STANDARD PRODUCT AND CASE SIZE TABLE DϕxL (mm)

Cap. (µF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
1.0	1R0	-	-	-	-	-	4x7
2.2	2R2	-	-	-	-	-	4x7
3.3	3R3	-	-	-	-	-	4x7
4.7	4R7	-	-	-	4x7	4x7	5x7
10	100	-	-	4x7	5x7	5x7	6.3x7
22	220	4x7	5x7	5x7	6.3x7	6.3x7	6.3x7
33	330	5x7	5x7	6.3x7	6.3x7	6.3x7	6.3x7
47	470	5x7	6.3x7	6.3x7	6.3x7	6.3x7	6.3x7
100	101	6.3x7	6.3x7	6.3x7	6.3x7	6.3x7	-
220	221	6.3x7	6.3x7	6.3x7	-	-	-
330	331	6.3x7	-	-	-	-	-

LEAD SPACING & DIAMETER (mm)

Case Dia. (Dϕ)	4	5	6.3
Lead Dia. (dϕ)	0.45	0.45	0.45
Lead Spacing (F)	1.5	2.0	2.5
Dim. α	0.5		
Dim. β	1.0		

DIMENSIONS (mm)



Drawing is representative of parts as supplied in bulk or straight lead format, please see taping specification for details on taped format packaging.

PART NUMBER SYSTEM

NRE-SW 100 M 35V 5x5 TB F

- F — RoHS Compliant
- TB — Tape and Box*
- 5x5 — Size (D∅xL)
- 35V — Rated Voltage
- M — Tolerance Code
- 100 — Capacitance Code
- NRE-SW — Series

*see tape specification for details

PRECAUTIONS

Please review the notes on correct use, safety and precautions found on **pages T10** & **T11** of NIC's **Electrolytic Capacitor catalog**.
Also found at **www.niccomp.com/precautions**
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: **tpmg@niccomp.com**

STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (µF)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mA) +105°C/100KHz	Max. ESR (Ω) +20°C/100KHz	Load Life Hours @+105°C
NRE-SW220M6.3V4x7F	22	6.3	0.24	50	4.2	1,000
NRE-SW330M6.3V5x7F	33		0.24	85	2.0	1,000
NRE-SW470M6.3V5x7F	47		0.24	85	2.0	1,000
NRE-SW101M6.3V6.3x7F	100		0.24	120	1.2	1,000
NRE-SW221M6.3V6.3x7F	220		0.24	120	1.2	1,000
NRE-SW331M6.3V6.3x7F	330		0.24	120	1.2	1,000
NRE-SW220M10V5x7F	22	10	0.21	85	4.2	1,000
NRE-SW330M10V5x7F	33		0.21	85	2.0	1,000
NRE-SW470M10V6.3x7F	47		0.21	120	1.2	1,000
NRE-SW101M10V6.3x7F	100		0.21	120	1.2	1,000
NRE-SW221M10V6.3x7F	220		0.21	120	1.2	1,000
NRE-SW100M16V4x7F	10	16	0.18	50	4.2	1,000
NRE-SW220M16V5x7F	22		0.18	85	2.0	1,000
NRE-SW330M16V6.3x7F	33		0.18	120	1.2	1,000
NRE-SW470M16V6.3x7F	47		0.18	120	1.2	1,000
NRE-SW101M16V6.3x7F	100		0.18	120	1.2	1,000
NRE-SW221M16V6.3x7F	220		0.18	120	1.2	1,000
NRE-SW4R7M25V4x7F	4.7	25	0.14	50	4.2	1,000
NRE-SW100M25V5x7F	10		0.14	85	2.0	1,000
NRE-SW220M25V6.3x7F	22		0.14	120	1.2	1,000
NRE-SW330M25V6.3x7F	33		0.14	120	1.2	1,000
NRE-SW470M25V6.3x7F	47		0.14	120	1.2	1,000
NRE-SW101M25V6.3x7F	100		0.14	120	1.5	1,000
NRE-SW4R7M35V4x7F	4.7	35	0.12	40	6.0	1,000
NRE-SW100M35V5x7F	10		0.12	70	3.1	1,000
NRE-SW220M35V6.3x7F	22		0.12	100	1.6	1,000
NRE-SW330M35V6.3x7F	33		0.12	100	1.6	1,000
NRE-SW470M35V6.3x7F	47		0.12	100	1.6	1,000
NRE-SW101M35V6.3x7F	100		0.12	100	1.6	1,000
NRE-SW1R0M50V4x7F	1.0	50	0.10	30	10.0	1,000
NRE-SW2R2M50V4x7F	2.2		0.10	35	7.8	1,000
NRE-SW3R3M50V4x7F	3.3		0.10	40	6.2	1,000
NRE-SW4R7M50V5x7F	4.7		0.10	70	3.1	1,000
NRE-SW100M50V6.3x7F	10		0.10	100	1.6	1,000
NRE-SW220M50V6.3x7F	22		0.10	100	1.6	1,000
NRE-SW330M50V6.3x7F	33		0.10	100	1.6	1,000
NRE-SW470M50V6.3x7F	47		0.10	100	1.6	1,000

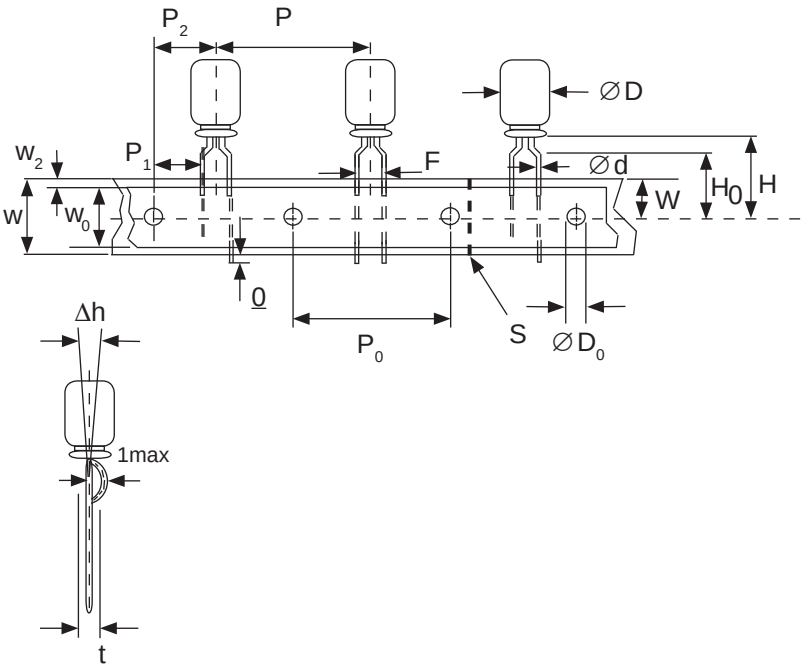
RIPPLE CURRENT CORRECTION FACTORS

Frequency (Hz)	120	1K	10K	≤100K
4x7	0.50	0.70	0.93	1.00
5x7	0.60	0.80	0.93	1.00
6.3x7	0.70	0.85	0.93	1.00

STANDARD RADIAL TAPING (5mm LEAD SPACING, FORMED LEADS) TB

Taping Dimensions (mm)

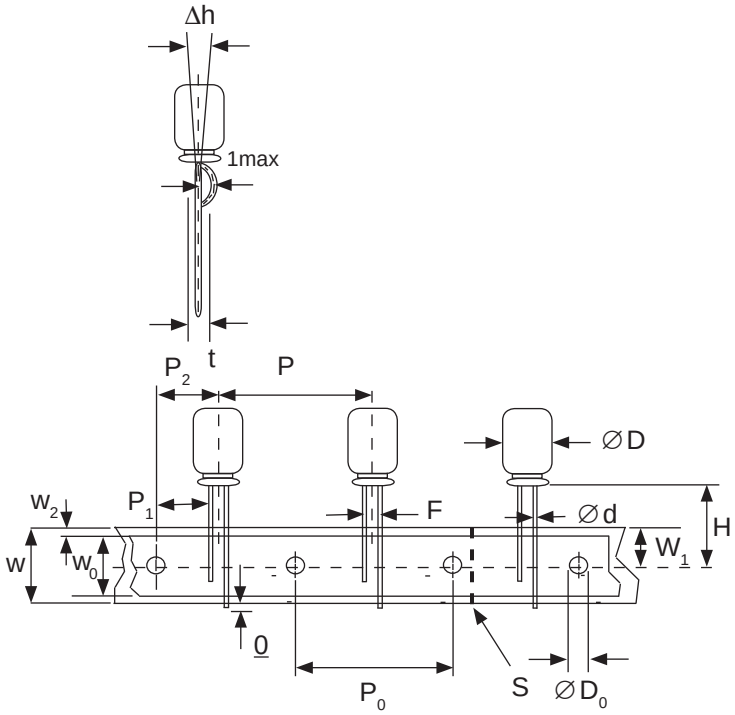
Case Dia. (Dϕ)	4	5		6.3		8
Case Size / Dim.	4x5 4x7	5x5 5x7	5x11	6.3x5 6.3x7	6.3x11	8x11.5
dϕ ±0.05	0.45	0.45	0.5	0.45	0.5	0.6
H ±0.75	17.5	17.5	18.5	17.5	18.5	20.0
F +0.8 ~ -0.2	5.0 -02 ~ +0.8					
P	12.7 ±1.0					
P_0	12.7 ±0.2					
P_1	3.85 ±0.5 (at end of tape)					
P_2	6.35 ±1.0					
W	18.0 ±0.5					
W_0	11.5 min.					
W_1	9.0 ±0.5					
W_2	0 ~ 2.5					
H_0	16.0 ±0.5					
I	1.0 max.					
$D_0\phi$	4.0 ±0.2					
Δh	0 ±1.0 (at top of can)					
t	0.7 ±0.2 (not including lead)					



STANDARD RADIAL TAPING (5mm LEAD SPACING, STRAIGHT LEADS) TB

Taping Dimensions (mm)

Case Dia. (Dϕ)	10	12.5
Case Size / Dim.	All	All
dϕ ±0.05	0.6	0.6
H ±0.75	19.0	19.0
F +0.8 ~ -0.2	5.0	5.0
P ±1.0	25.4*	
P_0	12.7 ±0.2	
P_1	3.85	
P_2	6.35 ±1.0	
W	18.0 ±0.5	
W_0	11.5 min	
W_1	9.0 ±0.5	
W_2	0 ~ 2.5	
H_0	16.0 ±0.5	
I	1.0 max.	
$D_0\phi$	4.0 ±0.2	
Δh	0 ±1.0 (at top of can)	
t	0.7 ±0.2 (not including lead)	
***Optional Taping Specifications** 10mm diameter available with P dim. = 12.7mm (P/N Suffix: TB12.7MMP)		
12.5mm diameter available with P dim. = 15mm, P_1= 5.0mm, P_0 = 15.0mm & P_2 = 7.5mm (P/N Suffix: TB15MMP)		

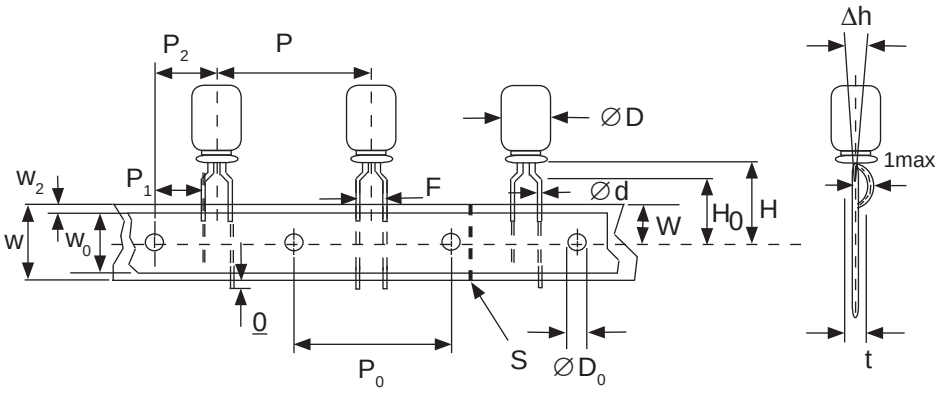


NOTE: ANODE (+) LEAD FEEDS OFF FIRST. FOR OPTION OF NEGATIVE (–) LEAD FIRST, SPECIFY "TBN".

SPECIAL RADIAL TAPING (2.5mm LEAD SPACING, FORMED LEADS) TBF1

Taping Dimensions (mm)

Case Dia. (Dϕ)	4	5	
Case Size Dim.	4x5 4x7	5x5 5x7	5x11
dϕ ±0.05	0.45	0.45	0.5
H ±0.75	17.5	17.5	18.5
H_0 ±0.5	16.0	-	-
F	2.5 -02 ~ +0.8		
P	12.7 ±1.0		
P_0	12.7 ±0.2		
P_1	5.1 ±0.5		
P_2	6.35 ±1.0		
W	18.0 ±0.5		
W_0	11.5 min.		
W_1	9.0 ±0.5		
W_2	0 ~ 1.5		
I	1.0 max.		
D_0ϕ	4.0 ±0.2		
Δh	0 ±1.0		
t	0.7 ±0.2		

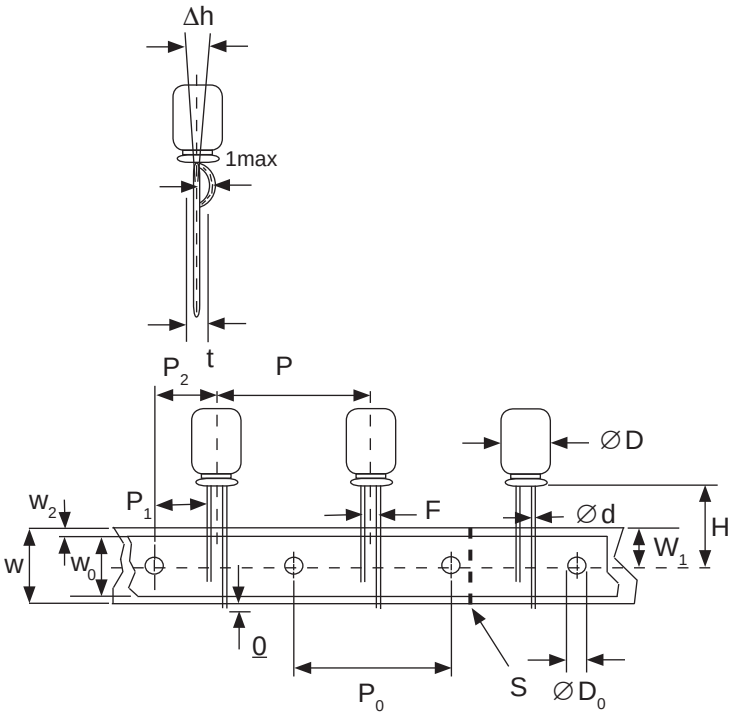


SPECIAL STRAIGHT LEAD TAPING TBST

Taping Dimensions (mm)

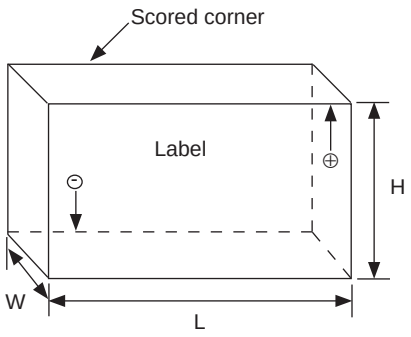
Case Dia. (Dϕ)	4	5		6.3		8
Case Size Dim.	4x5 4x7	5x5 5x7	5x11	6.3x5 6.3x7	6.3x11	8x11.5
dϕ ±0.05	0.45	0.45	0.5	0.45	0.5	0.6
H ±0.75	17.5	17.5	18.5	17.5	18.5	20.0
F +0.8 ~ -0.2	2.0*	2.0	2.0	2.5	2.5	3.5
P ±1.0	12.7 ±0.2					
P_0	12.7 ±0.2					
P_1	5.1	5.1	5.1	5.1	5.1	4.6
P_2	6.35 ±1.0					
W	18.0 ±0.5					
W_0	11.5 min.					
W_1	9.0 ±0.5					
W_2	0 ~ 2.5					
H_0	16.0 ±0.5					
I	1.0 max.					
D_0ϕ	4.0 ±0.2					
Δh	0 ±1.0 (at top of can)					
t	0.7 ±0.2 (not including lead)					

* Parts with 4mm diameter are taped with a slight flare in the lead and a 2.0mm lead-space.



RADIAL TAPED PACKAGING

Ammo Box Dimensions (mm)



Ammo Box (Tape & Box) TB, TBF1, TBST

Size of box and component quantity

Case Dia (Dϕ) or Case Size	Q'ty per Box (pcs)	Dim. L	Dim. H	Dim. W
4x5, 4x7	2,000	331	175	43
5x5, 5x7	2,000	331	220	43
5x11	2,000	340	255	55
6.3x5, 6.3x7	2,000	331	280	43
6.3x11	2,000	331	280	48
8x11.5, 8x12.5	1,000	335	235	53
10x12.5*	500	335	190	53
10x16*	500	335	300	53
10x20*	500	335	300	55
12.x20*	500	335	300	55
12.5x25*	500	335	300	61

*Special Taping Consult Factory For Availability