

DISCONTINUED PRODUCT NOTICE

PRODUCTS: **AXIAL** LEADED ELECTROLYTIC CAPACITORS



NIC PRODUCT SERIES: **NAE, NAE-WT, NASA, NASS & NNA**

EFFECTIVE: APRIL 1st, 2002

LAST-TIME BUY:

ORDERS FROM EXISTING AXIAL LEADED PRODUCTS CUSTOMERS WILL BE ACCEPTED UNTIL JULY 1st, 2002

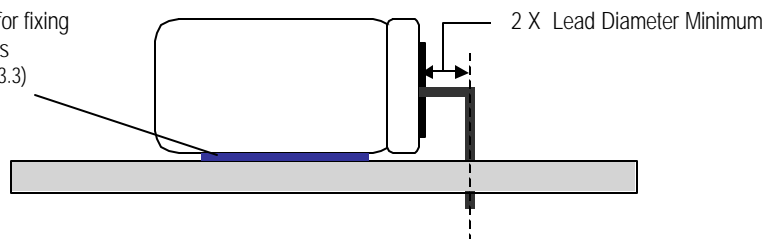
LAST DELIVERY: NOT BEYOND OCTOBER 1st, 2002

TERMS: ALL ORDERS WILL BE NON CANCELABLE / NON RETURNABLE

REPLACEMENTS – ALTERNATES:

- FOR LOW PROFILE APPLICATIONS SUGGEST USE OF RADIAL LEADED VERSION MOUNTED HORIZONTALLY
+ SEE DRAWING BELOW

Adhesive suggested for fixing large size components (Ref IPC-CM-770 20.1.3.3)



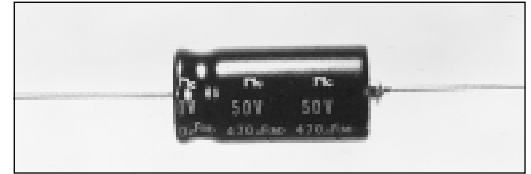
- SUGGEST UPGRADE TO SURFACE MOUNT (SMT) VERSION
+ AVAILABLE IN HIGH VOLTAGES (UP TO 450VDC)
+ AVAILABLE IN HIGH CAPACITANCE (UP TO 6800µF)



AXIAL LEADS, POLARIZED, WIDE TEMPERATURE RANGE

FEATURES

- 105°C EXTENDED OPERATING TEMPERATURE
- HIGH TEMPERATURE STABILITY
- NEW REDUCED SIZES IN DEVELOPMENT
- MINIMUM ORDERS REQUIRED



LEADED

CHARACTERISTICS

Rated Voltage Range		6.3 ~ 100 VDC							
Capacitance Range		0.47 ~ 10,000µF							
Operating Temperature Range		-40 ~ +105°C							
Capacitance Tolerance		± 20%							
Max. Leakage Current @ (20°C)	After 1 min.	0.03CV or 4µA , whichever if greater							
	After 2 min.	0.01CV or 3µA , whichever if greater							
Max. Tan δ @ 120Hz/20°C	W.V. (Vdc)	6.3	10	16	25	35	50	63	100
	S.V. (Vdc)	8	13	20	32	44	63	79	125
	C ≤ 1,000µF	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	C = 1,500µF	0.23	0.20	0.17	0.15	0.13	0.11	0.11	0.09
	C = 2,200µF	0.24	0.21	0.18	0.16	0.14	0.12	0.12	0.10
	C = 3,300µF	0.26	0.23	0.20	0.18	0.16	0.14	0.14	
	C = 4,700µF	0.28	0.25	0.22	0.20	0.18	0.16	0.16	
	C = 6,800µF	0.32	0.29	0.26	0.24	0.22	0.20		
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z+20°C	D < 10 Ø m/m	4	3	2	2	2	2	2
		D ≥ 13 Ø m/m	6	4	3	2	2	2	2
	Z-40°C/Z+20°C	D < 10 Ø m/m	8	6	4	4	3	3	3
		D ≥ 13 Ø m/m	10	8	6	4	4	4	4
Load Life Test at Rated W.V. 105°C 1,000 Hours	Capacitance Change	Within ±20% of initial measured value							
	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							
Shelf Life Test 105°C 1,000 Hours No Load	Capacitance Change	Within ±20% of initial measured value							
	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							

Note: Capacitors shall conform to JIS-C-5141, unless otherwise specified here.

MAXIMUM PERMISSIBLE RIPPLE CURRENT (mA rms) AT 105°C AND 120Hz

Cap. (µF)	Code	Working Voltage (Vdc)							
		6.3	10	16	25	35	50	63	100
0.47							5		7
1.0							7		10
2.2							11		16
3.3							14		22
4.7							17	18	26
10							30	36	49
22					43	47	51	68	72
33				44	53	57	68	83	89
47			48	59	64	86	95	100	117
100		74	80	109	117	126	152	161	211
220		119	149	162	191	206	259	295	387
330		169	182	199	268	290	343	413	511
470		202	240	261	320	374	468	533	657
1,000		373	401	473	576	674	796	904	1246
1,500		494	606	660	764	959	1188	1252	1591
2,200		653	698	816	866	1216	1408	1576	
3,300		768	884	1102	1313	1493	1711	1851	
4,700		1031	1176	1418	1594	1877	1991		
6,800		1251	1485	1682	1876	2043			
10,000		1534	1710	1912	1970				

RIPPLE CURRENT CORRECTION FACTOR

1. Temperature Factor

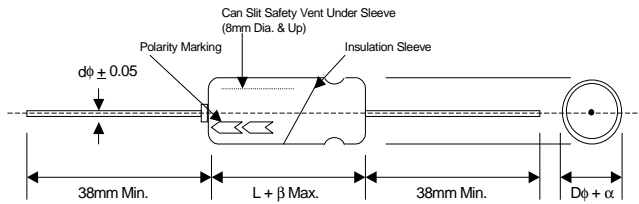
Ambient Temperature (°C)	≤60	+70	+85	+105
Correction Rate	2.00	1.85	1.60	1.00

2. Frequency Factor

Frequency (Hz)	50	120	300	1K	10K~
0.47 ~ 3.3µF	0.60	1.00	1.25	1.65	1.90
4.7 ~ 33µF	0.70	1.00	1.20	1.40	1.50
47 ~ 1000µF	0.75	1.00	1.10	1.15	1.20
1500 ~ 10000µF	0.80	1.00	1.02	1.03	1.04



LEADED



SLEEVE COLOR: DARK BROWN

DIMENSIONS (mm)

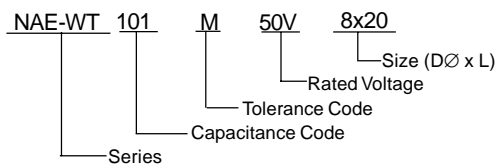
Case Dia. (D ϕ)	5-10	12.5	16-18	22
Lead Dia. (d ϕ)	0.6	0.8	0.8	0.8
Dim. α	0.5	0.5	0.5	1.0
Dim. β	1.0	1.0	2.0	2.0

STANDARD PRODUCTS AND CASE SIZE TABLE: D ϕ x L (mm)

Cap. (μ F)	Code	Working Voltage (Vdc)							
		6.3	10	16	25	35	50	63	100
0.47	R47								5x13
1.0	1R0								5x13
2.2	2R2								6.3x13
3.3	3R3							5x13	6.3x13
4.7	4R7						5x13	6.3x13	6.3x16
10	100					5x13	6.3x13	6.3x16	8x16
22	220			5x13	6.3x13	6.3x13	6.3x13	8x16	8x16
33	330			5x13	6.3x13	6.3x13	6.3x16	8x16	8x20
47	470		6.3x13	6.3x13	6.3x13	8x16	8x16	8x16	10x20
100	101		6.3x13	8x16	8x16	8x16	8x20	8x20	10x25
220	221		8x16	8x16	8x16	8x20	10x20	10x25	13x25
330	331		8x16	8x16	8x20	10x20	10x25	13x25	16x26
470	471		8x16	8x20	10x20	10x25	13x25	13x25	16x40
1000	102		10x20	10x25	13x25	13x31	16x26	16x31	18x50/18x40
1500	152	10x25	10x25	13x25	13x31	16x31	16x40	16x40	22x50
2200	222	13x25	13x25	13x31	16x26	16x31	18x40	18x50	
3300	332	13x25	13x30	16x26	16x31	16x40	18x50	22x50	
4700	472	13x31	16x26	16x31	16x40	18x50	22x50		
6800	682	16x31	16x31	16x40	18x50	22x50			
10,000	103	16x40	16x40	18x50	22x50				

PART NUMBERING SYSTEM

MINIMUM ORDERS REQUIRED



See page 8 for complete part numbering system.

