

Surface mount electrolytics

Order code	Manufacturer code	Description
11-2360	NACE100M16V	10UF 16V SMD ELEC(PK10) *OFFER 11-2260*
11-2362	NACE220M16V	22UF 16V SMD ELECTRLYTIC (PK10)
11-2364	NACE470M16V	47UF 16V SMD ELEC(PK10) *OFFER 11-2262*
11-2366	NACE101M16V	100UF 16V SMD ELEC(PK10) *OFFER 11-2263*
11-2368	NACE221M16V	220UF 16V SMD ELEC(PK10) *OFFER 11-2264*
11-2370	NACE471M16V	(PK 10) 470UF 16V SMD EL *OFFER 11-2265*
11-2372	NACE100M35V	10UF 35V SMD ELEC (PK10) *OFFER 11-2266*
11-2374	NACE101M35V	100UF 35V SMD ELECTROLYTIC (PK10) (RC)
11-2376	NACE221M35V	220UF 35V SMD ELECTROLYTIC (PK10)
11-2378	NACE1ROM50V	1UF 50V SMD ELECT(PK10)*OFFER 11-2269*
11-2380	NACE100M16V4X5.5	10UF 16V SMD ELECTROLYTIC (REEL 1500) RC
11-2382	NACE220M16V5X5.5	22UF 16V SMD ELECTROLYTIC (REEL1000) RC
11-2384	NACE470M16V6.3X5.5	47UF 16V SMD ELECTROLYTIC (REEL 1000) RC
11-2386	NACE101M16V6.3X5.5	100UF16V SMD ELECTROLYTIC (RL 1000) RC
11-2388	NACE221M16V6.3X5.5	220UF 16V SMD ELECTROLYTIC (REEL 500) RC
11-2390	NACE471M16V8X10.5	470UF 16V SMD ELECTROLYTIC (REEL 300) RC
11-2392	NACE100M35V5X5.5	10UF 35V SMD ELECTROLYTIC (RL 1000) RC
11-2394	NACE101M35V6.3X8	100UF 35V SMD ELECTROLYTIC (REEL 500) RC
11-2396	NACE221M35V8X10.5	220UF 35V SMD ELECTROLYTIC (REEL 300) RC
11-2398	NACE1ROM50V4X5.5	1UF 50V SMD ELECTROLYTIC (REEL 1500) RC

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The enclosed information is believed to be correct, Information may change 'without notice' due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 04/07/2003

FEATURES

- LOW COST, GENERAL PURPOSE, 2000 HOURS AT 85°C
- NEW EXPANDED CV RANGE (up to 6800 μ F)
- ANTI-SOLVENT (2 MINUTES)
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

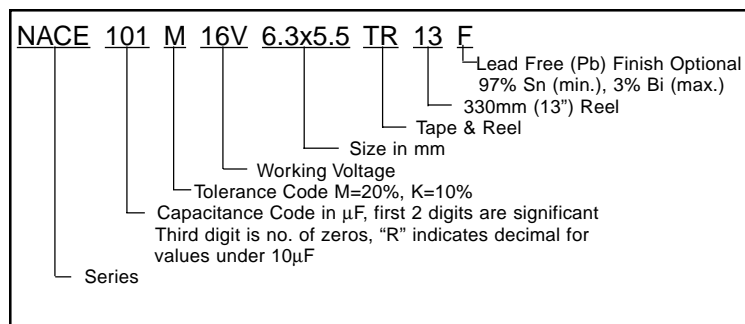


CHARACTERISTICS

Rated Voltage Range	4.0 ~ 100 Vdc
Rated Capacitance Range	0.1 ~ 6800 μ F
Operating Temp. Range	-40 ~ +85°C
Capacitance Tolerance	\pm 20%(M), \pm 10%(K)**
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV or 3 μ A, whichever is greater

Tan δ @ 120Hz/20°C	W.V. (Vdc)	4.0	6.3	10	16	25	35	50	63	100	
	3mm Dia.	0.40	0.35	0.24	0.19	0.16	0.14	0.14	-	-	
	4 ~ 6.3 mm Dia.	0.35	0.26	0.20	0.16	0.14	0.12	0.10	0.10	0.10	
	8 x 6.5mm Case Size	-	0.35	0.26	0.20	0.16	0.14	0.12	-	0.18	
	8mm Dia ~ up	C < 1000 μ F	0.40	0.30	0.24	0.20	0.16	0.14	0.12	0.12	0.10
		C = 1500 μ F	-	0.31	0.25	0.21	-	0.15	-	-	-
		C = 2200 μ F	-	0.32	0.32	-	0.18	-	-	-	-
C = 3300 μ F		-	0.34	-	0.24	-	-	-	-	-	
C = 4700 μ F		-	-	0.36	-	-	-	-	-	-	
	C = 6800 μ F	-	0.40	-	-	-	-	-	-	-	
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	4.0	6.3	10	16	25	35	50	63	100	
	Z-25°C/Z +20°C	7	3	3	2	2	2	2	2	2	
	Z-40°C/Z +20°C	15	8	6	4	4	3	3	3	3	
Load LifeTest 85°C 2,000 Hours	Capacitance Change	Within \pm 25% of initial measured value									
	Tan δ	Less than 200% of specified max. value									
	Leakage Current	Less than specified max. value									

SURFACE MOUNT



Surface Mount Aluminum Electrolytic Capacitors

NACE Series

MAXIMUM E.S.R. (Ω) AT 20°C AND 120Hz

Cap (μ F)	Working Voltage (Vdc)								
	4.0	6.3	10	16	25	35	50	63	100
0.1	-	-	-	-	-	-	1660	1660	-
0.22	-	-	-	-	-	-	754	754	-
0.33	-	-	-	-	-	-	503	503	-
0.47	-	-	-	-	-	-	353	353	-
1.0	-	-	-	-	-	-	166	166	166
2.2	-	-	-	-	-	-	90.4	75.4	75.4
3.3	-	-	-	-	-	-	60.3	50.3	50.3 90.4†
4.7	-	-	-	-	4.94	42.3	35.3	35.3	35.3
10	-	-	-	26.5	23.2	19.9	16.6	16.6	16.6
15	-	33.1	-	-	-	-	-	-	-
22	30.1	26.5* 18.1	15.1	12.1	10.6	9.05	7.54 9.05†	7.54	7.54
33	17.6	12.6	10.1	8.04	7.04	6.04 7.04†	5.03 6.04†	6.04	5.03
47	12.4	8.47	7.06	5.65	4.95	4.24 4.95†	3.53	4.24	-
68	8.54	5.86	4.88	3.91	3.42	2.93	2.44	-	-
100	5.80	3.98	3.32	2.66 3.32†	2.32 2.66†	1.99	1.99	1.99	-
150	3.87	2.66	2.21	1.77	1.55	1.33	-	-	1.11
220	2.64	1.96	1.51 1.99†	1.21	1.21	1.06	0.91	0.91	-
330	1.76	1.31 1.76†	1.21	1.01	0.81	0.71	0.60	-	-
470	1.42	1.06	0.85	0.71	0.57	0.49	0.43	0.43	-
680	-	0.59	-	0.49	-	0.34	-	-	-
1000	0.67	0.50	0.40	-	0.27	-	0.20	-	-
1500	-	0.35	-	0.24	-	0.17	-	-	-
2200	-	-	0.24	-	0.14	-	-	-	-
3300	-	0.17	-	0.12	-	-	-	-	-
4700	-	-	0.13	-	-	-	-	-	-
6800	-	0.10	-	-	-	-	-	-	-

MAXIMUM RIPPLE CURRENT (mA rms AT 120Hz AND 85°C)

Cap (μ F)	Working Voltage (Vdc)									
	4.0	6.3	10	16	25	35	50	63	100	
0.1	-	-	-	-	-	-	-	1.0	1.0	-
0.22	-	-	-	-	-	-	-	2.3	2.3	-
0.33	-	-	-	-	-	-	-	3.5	3.5	-
0.47	-	-	-	-	-	-	-	4.0* 5.5	5.0	-
1.0	-	-	-	-	-	-	-	8* 10	10	10
2.2	-	-	-	-	-	-	8*	15	15	20
3.3	-	-	-	-	-	-	10*	18	20	28 50†
4.7	-	-	-	-	-	12* 19	20	23	23	35
10	-	-	-	-	20* 25	28	30	34	34	50
15	-	16*	-	-	-	-	-	-	-	-
22	19*	21* 31	35	39	52	54	58 120†	70	120	-
33	26	39	43	57	63	60 130†	65† 85	160	190	-
47	34	47	59	68	68	70 165†	90	170	330	-
68	52	63	66	75	80	110	120	-	-	-
100	61	71	76	86 200†	91† 130	130	200	280	-	-
150	74	78	88	135	200	220	-	-	560	-
220	82	95	150 250†	150	250	270	320	410	-	-
330	80	150 300†	280	280	310	340	520	-	-	-
470	150	300	300	330	430	590	925	700	-	-
680	-	300	-	450	-	610	-	-	-	-
1000	330	330	450	-	660	-	940	-	-	-
1500	-	450	-	710	-	1060	-	-	-	-
2200	-	-	730	-	1150	-	-	-	-	-
3300	-	750	-	1200	-	-	-	-	-	-
4700	-	-	1260	-	-	-	-	-	-	-
6800	-	1330	-	-	-	-	-	-	-	-

RIPPLE CURRENT CORRECTION FACTOR

Frequency Hz	100<F≤1K	1K<F≤10K	10K<F≤100K	F≥100K
C≤4.7 μ F	1.0	1.3	1.5	2.0
4.7 μ F<C≤33 μ F	1.0	1.2	1.3	1.45
C>33 μ F	1.0	1.1	1.2	1.3

*3x5.5mm Case Size, †8x6.5mm Case Size



SURFACE MOUNT

STANDARD PRODUCT AND CASE SIZE TABLE DØxL (mm)

Cap. (µF)	Code	Working Voltage (Vdc)								
		4.0	6.3	10	16	25	35	50	63	100
0.1	R10							3x5.5 4x5.5*	4x5.5*	
0.22	R22							3x5.5 4x5.5*	4x5.5*	
0.33	R33							3x5.5 4x5.5*	4x5.5*	
0.47	R47							3x5.5 4x5.5*	4x5.5*	
1.0	1R0							3x5.5 4x5.5*	4x5.5*	4x6.3*
2.2	2R2						3x5.5	4x5.5*	4x5.5*	6.3x6.3*
3.3	3R3						3x5.5	4x5.5*	5x5.5*	6.3x6.3* 8x6.5
4.7	4R7					3x5.5 4x5.5	4x5.5*	5x5.5*	5x5.5*	6.3x6.3*
10	100				3x5.5 4x5.5*	5x5.5	5x5.5*	6.3x5.5*	6.3x5.5*	6.3x8*
15	150	-	3x5.5	-	-	-	-	-	-	-
22	220	3x5.5	3x5.5 4x5.5*	5x5.5*	5x5.5*	6.3x5.5	6.3x5.5*	6.3x6.3* 8x6.5	6.3x8*	8x10.5*
33	330	4x5.5*	5x5.5*	5x5.5*	6.3x5.5*	6.3x5.5	6.3x6.3* 8x6.5	6.3x8* 8x6.5	8x10.5*	10x10.5*
47	470	4x5.5*	5x5.5*	6.3x5.5	6.3x5.5*	6.3x6.3	6.3x6.3* 8x6.5	6.3x8*	8x10.5*	12.5x14
68	680	5x5.5*	6.3x5.5*	6.3x5.5*	6.3x5.5*	6.3x6.3	6.3x8	8x10.5*		
100	101	5x5.5*	6.3x5.5*	6.3x5.5*	6.3x5.5* 8x6.5	6.3x8 8x6.5	6.3x8	8x10.5*	10x10.5*	
150	151	6.3x5.5*	6.3x5.5*	6.3x6.3*	6.3x8*	8x10.5	8x10.5* 10x8*			16x17
220	221	6.3x5.5*	6.3x6.3*	6.3x8* 8x6.5	6.3x8*	8x10.5 10x8	8x10.5	10x10.5	12.5x14	
330	331	6.3x6.3	6.3x8* 8x6.5	8x10.5*	8x10.5 10x8	8x10.5	10x10.5	12.5x14		
470	471	6.3x8*	8x10.5	8x10.5 10x8	8x10.5	10x10.5	12.5x14	16x17	16x17	
680	681		10x8*		10x10.5*		12.5x14			
1000	102	10x8	8x10.5*	10x10.5*		12.5x14		16x17		
1500	152		10x10.5*		12.5x14		16x17			
2200	222			12.5x14		16x17				
3300	332		12.5x14		16x17					
4700	472			16x17						
6800	682		16x17							

SURFACE MOUNT

*Items available in optional 10% tolerance

LINK TO COMPLETE CASE DIMENSIONS & LEAD STYLES

