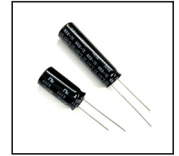




HIGH TEMPERATURE, EXTENDED LOAD LIFE, RADIAL LEADS, POLARIZED FEATURES

- MINIATURE SIZE
- LONG LIFE AT HIGH TEMPERATURE (3,000~5,000 HOURS @ +125°C)
- HIGH-RELIABILITY APPLICATIONS
- EXTENDED TEMPERATURE APPLICATIONS (-40°C to +125°C)
- HIGH VOLTAGE POWER SUPPLIES
- CELLULAR INFRASTRUCTURE; LTE / 5G
- **MEETS THE REQUIREMENTS OF AEC-Q200***

*Contact NIC for supporting test data



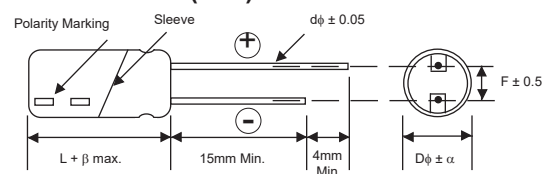
CHARACTERISTICS

Rated Voltage Range		400 ~ 500VDC			
Capacitance Range		8.2 ~ 150μF			
Operating Temperature Range	400V ~ 450V	-40°C ~ +125°C			
	500V	-25°C ~ +125°C			
Capacitance Tolerance		√ ±20% (M)			
Maximum Leakage Current @ +20°C		3x CV after 5 minute at rated voltage			
Max. Tan δ at 120Hz/20°C	W.V. (Vdc)	400	420	450	500
	S.V. (Vdc)	450	470	500	550
	Tan δ	0.25	0.25	0.25	0.28
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	400	420	450	500
	Z-25°C/Z+20°C	6	6	6	8
	Z-40°C/Z+20°C	10	10	10	-
Load Life at W.V. & 125°C	Δ Capacitance	Within ± 30% of initial measured value			
	Δ Tan δ	Less than 300% of specified value			
	Δ LC	Less than specified value			
	Case Size	Lifetime			
	φ10mm	400V ~ 450V	500V		
		3,000	3,000		
φ12.5mm ~ 18mm	5,000	3,000			

LEAD SPACING AND DIAMETER (mm)

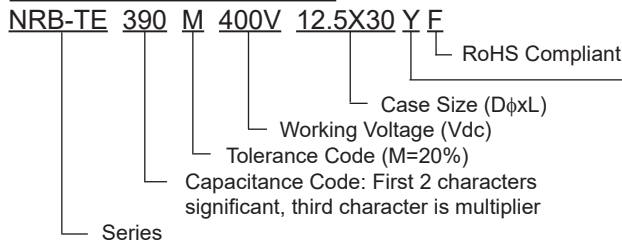
Case Dia. (Dφ)	10	12.5	14.5	16	18
Lead Dia. (Dφ)	0.6		0.8		
Lead Spacing (F)	5.0		7.5		
Dim. α	0.5				
Dim. β	2.0				

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



Optional: Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site

PRECAUTIONS

Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com

NRB-TE Series
Miniature Aluminum Electrolytic Capacitors



STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (µF)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mArms)		Max. ESR (Ω) +20°C/120Hz	Load Life Hours @+125°C
				+125°C/120Hz	+125°C/100KHz		
NRB-TE150M400V10X20F	15	400	0.25	200	500	27.65	3000
NRB-TE180M400V10X25F	18		0.25	235	588	23.04	3000
NRB-TE220M400V10X30F	22		0.25	275	688	18.85	3000
NRB-TE220M400V12.5X20F	22		0.25	260	650	18.85	5000
NRB-TE270M400V10X35F	27		0.25	320	800	15.36	3000
NRB-TE270M400V12.5X25F	27		0.25	310	775	15.36	5000
NRB-TE270M400V14.5X20F	27		0.25	310	775	15.36	5000
NRB-TE330M400V10X40F	33		0.25	370	925	12.57	3000
NRB-TE330M400V10X45F	33		0.25	380	950	12.57	3000
NRB-TE330M400V16X20F	33		0.25	355	888	12.57	5000
NRB-TE390M400V10X50F	39		0.25	425	1063	10.64	3000
NRB-TE390M400V12.5X30F	39		0.25	395	988	10.64	5000
NRB-TE390M400V14.5X25F	39		0.25	395	988	10.64	5000
NRB-TE470M400V12.5X35F	47		0.25	455	1138	8.83	5000
NRB-TE470M400V14.5X30F	47		0.25	460	1150	8.83	5000
NRB-TE470M400V16X25F	47		0.25	450	1125	8.83	5000
NRB-TE470M400V18X20F	47		0.25	435	1088	8.83	5000
NRB-TE560M400V12.5X40F	56		0.25	515	1288	7.41	5000
NRB-TE560M400V12.5X45F	56		0.25	535	1338	7.41	5000
NRB-TE560M400V14.5X35F	56		0.25	525	1313	7.41	5000
NRB-TE680M400V12.5X50F	68		0.25	605	1513	6.10	5000
NRB-TE680M400V14.5X40F	68		0.25	595	1488	6.10	5000
NRB-TE680M400V16X30F	68		0.25	565	1413	6.10	5000
NRB-TE680M400V18X25F	68		0.25	550	1375	6.10	5000
NRB-TE820M400V14.5X45F	82		0.25	680	1700	5.06	5000
NRB-TE820M400V16X35F	82		0.25	645	1613	5.06	5000
NRB-TE820M400V16X40F	82		0.25	675	1688	5.06	5000
NRB-TE820M400V18X30F	82		0.25	640	1600	5.06	5000
NRB-TE101M400V14.5X50F	100		0.25	770	1733	4.15	5000
NRB-TE101M400V16X45F	100		0.25	770	1733	4.15	5000
NRB-TE101M400V18X35F	100		0.25	740	1665	4.15	5000
NRB-TE121M400V16X50F	120		0.25	865	1946	3.46	5000
NRB-TE121M400V18X40F	120		0.25	835	1879	3.46	5000
NRB-TE121M400V18X45F	120	0.25	870	1958	3.46	5000	
NRB-TE151M400V18X50F	150	0.25	995	2239	2.77	5000	
NRB-TE120M420V10X20F	12	420	0.25	175	438	34.56	3000
NRB-TE150M420V10X25F	15		0.25	210	525	27.65	3000
NRB-TE180M420V10X30F	18		0.25	240	600	23.04	3000
NRB-TE180M420V12.5X20F	18		0.25	230	575	23.04	5000
NRB-TE220M420V10X35F	22		0.25	280	700	18.85	3000
NRB-TE220M420V14.5X20F	22		0.25	275	688	18.85	5000
NRB-TE270M420V10X40F	27		0.25	310	775	15.36	3000
NRB-TE270M420V10X45F	27		0.25	335	838	15.36	3000
NRB-TE270M420V12.5X25F	27		0.25	300	750	15.36	5000
NRB-TE270M420V16X20F	27		0.25	310	775	15.36	5000
NRB-TE330M420V10X50F	33		0.25	385	963	12.57	3000
NRB-TE330M420V12.5X30F	33		0.25	355	888	12.57	5000
NRB-TE330M420V14.5X25F	33		0.25	355	888	12.57	5000
NRB-TE390M420V12.5X35F	39		0.25	405	1013	10.64	5000
NRB-TE390M420V16X25F	39		0.25	400	1000	10.64	5000
NRB-TE390M420V18X20F	39		0.25	390	975	10.64	5000
NRB-TE470M420V12.5X40F	47		0.25	460	1150	8.83	5000
NRB-TE470M420V12.5X45F	47		0.25	480	1200	8.83	5000
NRB-TE470M420V14.5X30F	47		0.25	445	1113	8.83	5000
NRB-TE560M420V12.5X50F	56		0.25	535	1338	7.41	5000
NRB-TE560M420V14.5X35F	56		0.25	510	1275	7.41	5000
NRB-TE560M420V16X30F	56		0.25	500	1250	7.41	5000
NRB-TE560M420V18X25F	56		0.25	495	1238	7.41	5000
NRB-TE680M420V14.5X40F	68		0.25	580	1450	6.10	5000
NRB-TE680M420V14.5X45F	68		0.25	600	1500	6.10	5000
NRB-TE680M420V16X35F	68		0.25	580	1450	6.10	5000

TABLE CONTINUES ON NEXT PAGE



STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (µF)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mA rms)		Max. ESR (Ω) +20°C/120Hz	Load Life Hours @+125°C	
				+125°C/120Hz	+125°C/100KHz			
NRB-TE680M420V18X30F	68	420	0.25	575	1438	6.1	5000	
NRB-TE820M420V14.5X50F	82		0.25	680	1700	5.06	5000	
NRB-TE820M420V16X40F	82		0.25	660	1650	5.06	5000	
NRB-TE820M420V16X45F	82		0.25	685	1713	5.06	5000	
NRB-TE820M420V18X35F	82		0.25	655	1638	5.06	5000	
NRB-TE101M420V16X50F	100		0.25	775	1744	4.15	5000	
NRB-TE101M420V18X40F	100		0.25	750	1688	4.15	5000	
NRB-TE121M420V18X45F	120		0.25	840	1890	3.46	5000	
NRB-TE121M420V18X50F	120		0.25	875	1969	3.46	5000	
NRB-TE120M450V10X20F	12		450	0.25	175	438	34.56	3000
NRB-TE150M450V10X25F	15			0.25	210	525	27.65	3000
NRB-TE180M450V10X30F	18			0.25	240	600	23.04	3000
NRB-TE180M450V12.5X20F	18			0.25	235	588	23.04	5000
NRB-TE220M450V10X35F	22			0.25	280	700	18.85	3000
NRB-TE220M450V12.5X25F	22			0.25	275	688	18.85	5000
NRB-TE220M450V14.5X20F	22			0.25	275	688	18.85	5000
NRB-TE270M450V10X40F	27			0.25	325	813	15.36	3000
NRB-TE270M450V10X45F	27			0.25	335	838	15.36	3000
NRB-TE270M450V12.5X30F	27	0.25		325	813	15.36	5000	
NRB-TE270M450V16X20F	27	0.25		315	788	15.36	5000	
NRB-TE330M450V10X50F	33	0.25		385	963	12.57	3000	
NRB-TE330M450V12.5X35F	33	0.25		375	938	12.57	5000	
NRB-TE330M450V14.5X25F	33	0.25		355	888	12.57	5000	
NRB-TE390M450V12.5X40F	39	0.25		425	1063	10.64	5000	
NRB-TE390M450V14.5X30F	39	0.25		410	1025	10.64	5000	
NRB-TE390M450V16X25F	39	0.25		400	1000	10.64	5000	
NRB-TE390M450V18X20F	39	0.25		390	975	10.64	5000	
NRB-TE470M450V12.5X45F	47	0.25		480	1200	8.83	5000	
NRB-TE470M450V14.5X35F	47	0.25		470	1175	8.83	5000	
NRB-TE470M450V16X30F	47	0.25		465	1163	8.83	5000	
NRB-TE470M450V18X25F	47	0.25		460	1150	8.83	5000	
NRB-TE560M450V12.5X50F	56	0.25		540	1350	7.41	5000	
NRB-TE560M450V14.5X40F	56	0.25		530	1325	7.41	5000	
NRB-TE560M450V16X35F	56	0.25		530	1325	7.41	5000	
NRB-TE680M450V14.5X45F	68	0.25		580	1450	6.10	5000	
NRB-TE680M450V14.5X50F	68	0.25		625	1563	6.10	5000	
NRB-TE680M450V16X40F	68	0.25		605	1513	6.10	5000	
NRB-TE680M450V18X30F	68	0.25		575	1438	6.10	5000	
NRB-TE820M450V16X45F	82	0.25		685	1713	5.06	5000	
NRB-TE820M450V18X35F	82	0.25		660	1650	5.06	5000	
NRB-TE101M450V16X50F	100	0.25		775	1744	4.15	5000	
NRB-TE101M450V18X40F	100	0.25		740	1665	4.15	5000	
NRB-TE101M450V18X45F	100	0.25		785	1766	4.15	5000	
NRB-TE121M450V18X50F	120	0.25		880	1980	3.46	5000	
NRB-TE8R2M500V10X20F	8.2	500		0.28	135	338	56.64	3000
NRB-TE120M500V10X25F	12		0.28	180	450	38.71	3000	
NRB-TE120M500V12.5X20F	12		0.28	180	450	38.71	3000	
NRB-TE150M500V10X30F	15		0.28	210	525	30.97	3000	
NRB-TE180M500V10X35F	18		0.28	245	613	25.81	3000	
NRB-TE180M500V10X40F	18		0.28	255	638	25.81	3000	
NRB-TE180M500V12.5X25F	18		0.28	235	588	25.81	3000	
NRB-TE180M500V14.5X20F	18		0.28	235	588	25.81	3000	
NRB-TE220M500V10X45F	22		0.28	280	700	21.12	3000	
NRB-TE220M500V12.5X30F	22		0.28	280	700	21.12	3000	
NRB-TE220M500V14.5X25F	22		0.28	280	700	21.12	3000	
NRB-TE220M500V16X20F	22		0.28	270	675	21.12	3000	
NRB-TE270M500V10X50F	27		0.28	330	825	17.21	3000	
NRB-TE270M500V12.5X35F	27		0.28	320	800	17.21	3000	
NRB-TE270M500V14.5X30F	27		0.28	325	813	17.21	3000	
NRB-TE270M500V16X25F	27		0.28	320	800	17.21	3000	
NRB-TE270M500V18X20F	27		0.28	315	788	17.21	3000	

TABLE CONTINUES ON NEXT PAGE



STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mArms)		Max. ESR (Ω) +20°C/120Hz	Load Life Hours @+125°C
				+125°C/120Hz	+125°C/100KHz		
NRB-TE330M500V12.5X40F	33	500	0.28	370	925	14.08	3000
NRB-TE330M500V12.5X45F	33		0.28	385	963	14.08	3000
NRB-TE390M500V12.5X50F	39		0.28	430	1075	11.91	3000
NRB-TE390M500V14.5X35F	39		0.28	410	1025	11.91	3000
NRB-TE390M500V14.5X40F	39		0.28	425	1063	11.91	3000
NRB-TE390M500V16X30F	39		0.28	405	1013	11.91	3000
NRB-TE390M500V18X25F	39		0.28	400	1000	11.91	3000
NRB-TE470M500V14.5X45F	47		0.28	485	1213	9.89	3000
NRB-TE470M500V16X35F	47		0.28	460	1150	9.89	3000
NRB-TE470M500V18X30F	47		0.28	460	1150	9.89	3000
NRB-TE560M500V14.5X50F	56		0.28	545	1363	8.30	3000
NRB-TE560M500V16X40F	56		0.28	525	1313	8.30	3000
NRB-TE560M500V16X45F	56		0.28	545	1363	8.30	3000
NRB-TE560M500V18X35F	56		0.28	525	1313	8.30	3000
NRB-TE680M500V16X50F	68		0.28	615	1538	6.83	3000
NRB-TE680M500V18X40F	68		0.28	600	1500	6.83	3000
NRB-TE820M500V18X45F	82		0.28	680	1700	5.67	3000
NRB-TE820M500V18X50F	82		0.28	700	1750	5.67	3000

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Cap.	60 (50)Hz	120Hz	500Hz	1KHz	10KHz	≤100KHz
8.2 ~ 82	0.80	1.00	1.30	1.50	2.10	2.50
100 ~ 150	0.80	1.00	1.30	1.50	2.00	2.25