

Miniature Aluminum Electrolytic Capacitors

NRB-KQ Series

REDUCED SIZE, RADIAL LEADS, POLARIZED, ALUMINUM ELECTROLYTIC

FEATURES

- HIGH RIPPLE CURRENT, VOLTAGE (UP TO 450V)
- 2,000 HOUR LOAD LIFE

**RoHS
Compliant**
includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Voltage Range	400 ~ 450Vdc			
Capacitance Range	27 ~ 220 μ F			
Operating Temperature Range	-40°C ~ +105°C			
Capacitance Tolerance	$\pm 20\%$ (M)			
Maximum Leakage Current at 20°C	$3 * \sqrt{CV}$ after 5 minutes			
Max. Tan δ at 120Hz/20°C	W.V. (Vdc)	400	420	450
	S.V. (Vdc)	450	470	500
	Tan δ	0.15	0.20	0.20
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	400	420	450
	Z-25°C/Z+20°C	5	6	6
Load Life Hours Load Life Test at Rated W.V. & 105°C	Test	2,000 Hours		
	Capacitance Change	Within $\pm 20\%$ of initial measured value		
	Tan δ	Less than 200% of specified value		
	Leakage Current	Less than specified value		

PART NUMBER SYSTEM

NRB-KQ 330 M 400V 10X30 TB E

Series Capacitance Code in μ F Tolerance Code M=20% Working Voltage Case Size (mm) TB = Tape & Box* E = RoHS Compliant

*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 PRODUCT, SPECIFICATIONS AND CASE SIZES D ϕ x L (mm)

Part Number	Cap. (μ F)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (Arms) +105°C/120Hz	Max. ESR (Ω) 120Hz	Load Life Hours @ +105°C
NRB-KQ330M400V10X30F	33	400	0.15	0.33	7.54	2000
NRB-KQ390M400V10X35F	39		0.15	0.37	6.38	2000
NRB-KQ470M400V10X40F	47		0.15	0.43	5.29	2000
NRB-KQ560M400V10X45F	56		0.15	0.48	4.44	2000
NRB-KQ560M400V12.5X30F	56		0.15	0.47	4.44	2000
NRB-KQ680M400V12.5X35F	68		0.15	0.54	3.66	2000
NRB-KQ820M400V12.5X40F	82		0.15	0.62	3.03	2000
NRB-KQ820M400V14.5X31.5F	82		0.15	0.61	3.03	2000
NRB-KQ101M400V12.5X50F	100		0.15	0.73	2.49	2000
NRB-KQ101M400V14.5X35F	100		0.15	0.70	2.49	2000
NRB-KQ101M400V16X31.5F	100		0.15	0.71	2.49	2000
NRB-KQ121M400V14.5X40F	120		0.15	0.79	2.07	2000
NRB-KQ121M400V16X35F	120		0.15	0.80	2.07	2000
NRB-KQ151M400V14.5X50F	150		0.15	0.94	1.66	2000
NRB-KQ151M400V16X40F	150		0.15	0.92	1.66	2000
NRB-KQ151M400V18X31.5F	150		0.15	0.89	1.66	2000
NRB-KQ181M400V16X50F	180		0.15	1.08	1.38	2000
NRB-KQ181M400V18X40F	180		0.15	1.06	1.38	2000
NRB-KQ221M400V18X45F	220		0.15	1.20	1.13	2000
NRB-KQ330M420V10X30F	33	420	0.2	0.32	10.05	2000
NRB-KQ390M420V10X35F	39		0.2	0.36	8.51	2000
NRB-KQ470M420V10X40F	47		0.2	0.41	7.06	2000
NRB-KQ560M420V10X50F	56		0.2	0.49	5.92	2000
NRB-KQ560M420V12.5X30F	56		0.2	0.46	5.92	2000
NRB-KQ680M420V12.5X35F	68		0.2	0.53	4.88	2000
NRB-KQ820M420V12.5X45F	82		0.2	0.63	4.05	2000
NRB-KQ820M420V14.5X31.5F	82		0.2	0.60	4.05	2000
NRB-KQ101M420V12.5X50F	100		0.2	0.71	3.32	2000
NRB-KQ101M420V14.5X40F	100		0.2	0.72	3.32	2000
NRB-KQ101M420V16X31.5F	100		0.2	0.69	3.32	2000
NRB-KQ121M420V14.5X45F	120		0.2	0.81	2.76	2000
NRB-KQ121M420V16X35F	120		0.2	0.78	2.76	2000
NRB-KQ121M420V18X31.5F	120		0.2	0.80	2.76	2000
NRB-KQ151M420V16X45F	150		0.2	0.94	2.21	2000
NRB-KQ151M420V18X35F	150		0.2	0.92	2.21	2000
NRB-KQ181M420V16X50F	180		0.2	1.05	1.84	2000
NRB-KQ181M420V18X40F	180		0.2	1.04	1.84	2000
NRB-KQ221M420V18X50F	220		0.2	1.22	1.51	2000
NRB-KQ270M450V10X30F	27	450	0.2	0.30	12.29	2000
NRB-KQ330M450V10X35F	33		0.2	0.34	10.05	2000
NRB-KQ390M450V10X40F	39		0.2	0.39	8.51	2000
NRB-KQ470M450V10X45F	47		0.2	0.44	7.06	2000
NRB-KQ470M450V12.5X30F	47		0.2	0.43	7.06	2000
NRB-KQ560M450V12.5X35F	56		0.2	0.49	5.92	2000
NRB-KQ680M450V12.5X40F	68		0.2	0.56	4.88	2000
NRB-KQ680M450V14.5X31.5F	68		0.2	0.56	4.88	2000
NRB-KQ820M450V12.5X45F	82		0.2	0.63	4.05	2000
NRB-KQ820M450V14.5X35F	82		0.2	0.63	4.05	2000
NRB-KQ820M450V16X31.5F	82		0.2	0.64	4.05	2000
NRB-KQ101M450V14.5X40F	100		0.2	0.72	3.32	2000
NRB-KQ101M450V16X35F	100		0.2	0.73	3.32	2000
NRB-KQ121M450V14.5X50F	120		0.2	0.85	2.76	2000
NRB-KQ121M450V16X40F	120		0.2	0.82	2.76	2000
NRB-KQ121M450V18X31.5F	120		0.2	0.80	2.76	2000
NRB-KQ151M450V16X50F	150		0.2	0.98	2.21	2000
NRB-KQ151M450V18X40F	150		0.2	0.97	2.21	2000
NRB-KQ181M450V18X45F	180		0.2	1.09	1.84	2000
NRB-KQ221M450V18X50F	220		0.2	1.22	1.51	2000

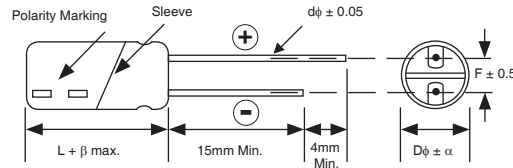
RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	60	120	500	1K	≥10K
400 ~ 450Vdc	0.8	1.0	1.25	1.40	1.50

DIAMETER AND LEADSPACE (mm)

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

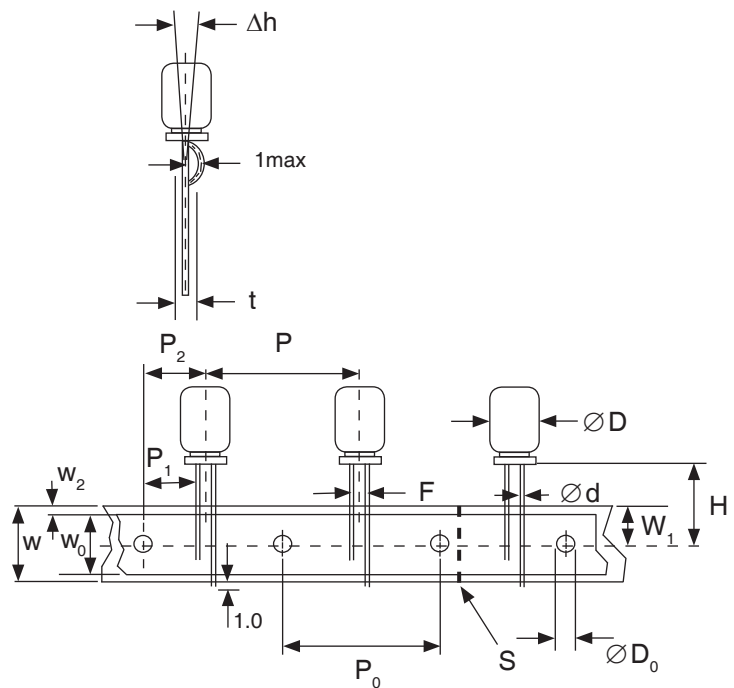
RADIAL TAPING (5mm LEAD SPACING) TB

Taping Dimensions (mm)

Case Dia. (D ϕ)	10	12.5
Case Size	All	
Dim.	All	
d ϕ	0.6 ± 0.05	
H	18.5 +0.75/-0.5	
F	5.0 +0.8/-0.2	
P	12.7 ± 1.0	25.4* ± 1.0
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 ϕ	4.0 ± 0.2	
Δh	0 ± 1.0 (at top of can)	
t	0.7 ± 0.2 (not including lead)	

*Optional Taping Specifications

12.5mm diameter available with P dim. = 15mm, P₁ = 5.0mm, P₀ = 15.0mm & P₂ = 7.5mm (P/N Suffix: TB15MMP)



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

