KOSHIN

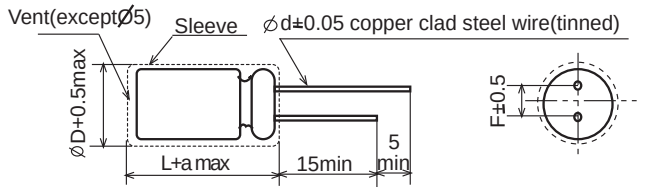
KR3 Miniature Aluminum Electrolytic Capacitors

Series KR3 Microminiature Capacitors

- One size smaller than KR1 Series.
- Guaranteed for 2000 hours at 85°C.

Outline Drawing

Unit:mm



∅D	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
∅d	0.5	0.5	0.6	0.6	0.6	0.8	0.8
a	1.5			1.5 for L 16 max 2.0 for L 20 min			

Photo

Marking color: White print on a black sleeve

Specifications

No.	Item	Performance
1	Temperature range (°C)	-40 to +85
2	Leakage Current (μA)	Rated voltage (V): 6.3 ~ 100 — Less than 0.03CV or 4 whichever is larger (after one minute); Less than 0.01CV or 3 whichever is larger (after two minutes). 160 ~450 — CV- 1000 : Less than 0.1CV +40 (after one minute); CV> 1000 : Less than 0.04CV +100 (after one minute). C: Capacitance (μF) V: Voltage (V) 20ºC
3	Capacitance tolerance (%)	±20 (20°C, 120 Hz)
4	Tangent of loss angle (tan δ)	See table below (20°C, 120Hz)
5	Stability at low temperature	See table below (120Hz)
6	Endurance (85°C) (Applied ripple current)	See table below
7	Max. Storage temp. (85°C)	Test time 1000 hrs. Others have same as endurance in No. 6. Pretreatment performed (JIS C 5102).
8	Applicable Standards	JIS C 5102 and JIS C 5141

Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	315	350	400	450
tan δ (max)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.20	0.20	0.24	0.24	0.24	0.24

0.02 is added to each 1000 μF increase over 1000 μF.

Rated Voltage (V)		6.3	10	16	25	35	50	63	100	160to250	315to450
Impedance ratio (max)	Z-25°C/Z +20°C	5	4	3	2					4	
	Z-40°C/Z +20°C	12	10	8	5	4	3			15	10

Test time	2000hrs
Leakage current	Initial specified value or less
Change in capacitance	Within ±20% of initial value
tan δ	200% or less of initial specified value

Coefficients of Frequency for Ripple Current

Rated Voltage (V)	Frequency (Hz) / CV(μF x V)	50 • 60	120	1k	10k	100k
6.3 to 16	All CV value	0.8	1	1.1	1.2	1.2
25 to 35	-1000	0.8	1	1.5	1.7	1.7
	>1000	0.8	1	1.2	1.3	1.3
50	-1000	0.8	1	1.6	1.9	1.9
	>1000	0.8	1	1.2	1.3	1.3
160 to 450	All CV value	0.8	1	1.3	1.5	1.6

Coefficients of Temperature for Ripple Current

Temperature (°C)	+70 or less	+85
Coeficients	1.35	1

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Standard Ratings

KOSHIN PART NO./WV(V)	CAP (μF)	SIZE (øXL) (mm)	Tanδ	Ripple Current (mArms)
6.3V				
KR3-6.3V221MA	220	5X11	0.28	200
KR3-6.3V331MB	330	6.3X11	0.28	270
KR3-6.3V471MB	470	6.3X11	0.28	322
KR3-6.3V102MC	1000	8X11.5	0.28	546
KR3-6.3V222MF	2200	10X20	0.30	1010
KR3-6.3V332MF	3300	10X20	0.32	1230
KR3-6.3V472MG	4700	12.5X20	0.34	1710
KR3-6.3V682MH	6800	12.5X25	0.38	1930
KR3-6.3V103MP	10000	16X25	0.46	2450
KR3-6.3V153MT	15000	16X35.5	0.56	2860
KR3-6.3V223MZ	22000	18X40	0.70	3340
10V				
KR3-10V470MA	47	5X11	0.24	99
KR3-10V101MA	100	5X11	0.24	146
KR3-10V221MB	220	6.3X11	0.24	240
KR3-10V331MB	330	6.3X11	0.24	290
KR3-10V471MC	470	8X11.5	0.24	417
KR3-10V102MD	1000	10X12.5	0.24	650
KR3-10V222MF	2200	10X20	0.26	1080
KR3-10V332MG	3300	12.5X20	0.28	1430
KR3-10V472MH	4700	12.5X25	0.30	1780
KR3-10V682MP	6800	16X25	0.34	2220
KR3-10V103MT	10000	16X35.5	0.42	2700
KR3-10V153MV	15000	18X35.5	0.52	3100
16V				
KR3-16V100MA	10	5X11	0.20	50
KR3-16V220MA	22	5X11	0.20	75
KR3-16V330MA	33	5X11	0.20	92
KR3-16V470MA	47	5X11	0.20	110
KR3-16V101MA	100	5X11	0.20	160
KR3-16V221MB	220	6.3X11	0.20	264
KR3-16V331MC	330	8X11.5	0.20	383
KR3-16V471MC	470	8X11.5	0.20	457
KR3-16V102ME	1000	10X16	0.20	791
KR3-16V222MG	2200	12.5X20	0.22	1350
KR3-16V332MH	3300	12.5X25	0.24	1690
KR3-16V472MP	4700	16X25	0.26	2100
KR3-16V682MT	6800	16X35.5	0.30	2580
KR3-16V103MV	10000	18X35.5	0.38	3130
25V				
KR3-25V4R7MA	4.7	5X11	0.16	38
KR3-25V100MA	10	5X11	0.16	55
KR3-25V220MA	22	5X11	0.16	82
KR3-25V330MA	33	5X11	0.16	100
KR3-25V470MA	47	5X11	0.16	118
KR3-25V101MB	100	6.3X11	0.16	199
KR3-25V221MC	220	8X11.5	0.16	349
KR3-25V331MD	330	10X12.5	0.16	510
KR3-25V471MD	470	10X12.5	0.16	545
KR3-25V102MF	1000	10X20	0.16	996
KR3-25V222MH	2200	12.5X25	0.18	1660
KR3-25V332MP	3300	16X25	0.20	2030
KR3-25V472MR	4700	16X31.5	0.22	2650
KR3-25V682MV	6800	18X35.5	0.26	3290
35V				
KR3-35V4R7MA	4.7	5X11	0.14	40
KR3-35V100MA	10	5X11	0.14	59
KR3-35V220MA	22	5X11	0.14	87
KR3-35V330MA	33	5X11	0.14	107
KR3-35V470MA	47	5X11	0.14	130
KR3-35V101MB	100	6.3X11	0.14	214
KR3-35V221MD	220	10X12.5	0.14	443
KR3-35V331MD	330	10X12.5	0.14	542
KR3-35V471ME	470	10X16	0.14	664
KR3-35V102MG	1000	12.5X20	0.14	1210
KR3-35V222MP	2200	16X25	0.16	1950
KR3-35V332MT	3300	16X35.5	0.18	2510
KR3-35V472MV	4700	18X35.5	0.20	2990

Note : Allowable Ripple Current 120Hz at 85°C

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Standard Ratings

KOSHIN PART NO./WV(V)	CAP (μF)	SIZE (øXL) (mm)	Tanδ	Ripple Current (mArms)
50V				
KR3-50VR10MA	0.1	5X11	0.12	3
KR3-50VR22MA	0.22	5X11	0.12	6
KR3-50VR33MA	0.33	5X11	0.12	9
KR3-50VR47MA	0.47	5X11	0.12	13
KR3-50V010MA	1	5X11	0.12	21
KR3-50V2R2MA	2.2	5X11	0.12	31
KR3-50V3R3MA	3.3	5X11	0.12	38
KR3-50V4R7MA	4.7	5X11	0.12	45
KR3-50V100MA	10	5X11	0.12	66
KR3-50V220MA	22	5X11	0.12	98
KR3-50V330MA	33	5X11	0.12	126
KR3-50V470MB	47	6.3X11	0.12	155
KR3-50V101MC	100	8X11.5	0.12	260
KR3-50V221MD	220	10X12.5	0.12	443
KR3-50V331ME	330	10X16	0.12	595
KR3-50V471MG	470	12.5X20	0.12	887
KR3-50V102MH	1000	12.5X25	0.12	1400
KR3-50V222MT	2200	16X35.5	0.14	2340
KR3-50V332MV	3300	18X35.5	0.16	2810
63V				
KR3-63V4R7MA	4.7	5X11	0.10	45
KR3-63V100MA	10	5X11	0.10	66
KR3-63V220MA	22	5X11	0.10	100
KR3-63V330MB	33	6.3X11	0.10	140
KR3-63V470MB	47	6.3X11	0.10	170
KR3-63V101MD	100	10X12.5	0.10	300
KR3-63V221ME	220	10X16	0.10	470
KR3-63V331MF	330	10X20	0.10	710
KR3-63V471MG	470	12.5X20	0.10	900
KR3-63V102MP	1000	16X25	0.10	1300
100V				
KR3-100VR10MA	0.1	5X11	0.08	2.1
KR3-100VR22MA	0.22	5X11	0.08	4.7
KR3-100VR33MA	0.33	5X11	0.08	7
KR3-100VR47MA	0.47	5X11	0.08	10
KR3-100V010MA	1	5X11	0.08	21
KR3-100V2R2MA	2.2	5X11	0.08	30
KR3-100V3R3MA	3.3	5X11	0.08	40
KR3-100V4R7MA	4.7	5X11	0.08	45
KR3-100V100MB	10	6.3X11	0.08	75
KR3-100V220MB	22	6.3X11	0.08	130
KR3-100V330MC	33	8X11.5	0.08	180
KR3-100V470MD	47	10X12.5	0.08	230
KR3-100V101MF	100	10X20	0.08	370
KR3-100V221MG	220	12.5X20	0.08	620
KR3-100V331MH	330	12.5X25	0.08	760
KR3-100V471MP	470	16X25	0.08	1000
KR3-100V102MZ	1000	18X40	0.08	1380
160V				
KR3-160VR47MB	0.47	6.3X11	0.20	15
KR3-160V010MB	1	6.3X11	0.20	22
KR3-160V2R2MB	2.2	6.3X11	0.20	32
KR3-160V3R3MB	3.3	6.3X11	0.20	40
KR3-160V4R7MB	4.7	6.3X11	0.20	48
KR3-160V100MC	10	8X11.5	0.20	81
KR3-160V220ME	22	10X16	0.20	151
KR3-160V330MF	33	10X20	0.20	202
KR3-160V470MG	47	12.5X20	0.20	266
KR3-160V101MH	100	12.5X25	0.20	422
KR3-160V221MR	220	16X31.5	0.20	783
KR3-160V331MV	330	18X35.5	0.20	1080
200V				
KR3-200VR47MB	0.47	6.3X11	0.20	15
KR3-200V010MB	1	6.3X11	0.20	22
KR3-200V2R2MB	2.2	6.3X11	0.20	32
KR3-200V3R3MB	3.3	6.3X11	0.20	40
KR3-200V4R7MC	4.7	8X11.5	0.20	56
KR3-200V100MD	10	10X12.5	0.20	94
KR3-200V220MF	22	10X20	0.20	170
KR3-200V330MG	33	12.5X20	0.20	223
KR3-200V470MG	47	12.5X20	0.20	265
KR3-200V101MP	100	16X25	0.20	483
KR3-200V221MV	220	18X35.5	0.20	882

Note : Allowable Ripple Current 120Hz at 85°C

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Standard Ratings

KOSHIN PART NO./WV(V)	CAP (μF)	SIZE (øXL) (mm)	Tanδ	Ripple Current (mArms)
250V				
KR3-250VR47MB	0.47	6.3X11	0.20	15
KR3-250V010MB	1	6.3X11	0.20	22
KR3-250V2R2MB	2.2	6.3X11	0.20	32
KR3-250V3R3MC	3.3	8X11.5	0.20	48
KR3-250V4R7MC	4.7	8X11.5	0.20	56
KR3-250V100ME	10	10X16	0.20	101
KR3-250V220MG	22	12.5X20	0.20	182
KR3-250V330MH	33	12.5X25	0.20	243
KR3-250V470MH	47	12.5X25	0.20	295
KR3-250V101MR	100	16X31.5	0.20	528
315V				
KR3-315VR47MB	0.47	6.3X11	0.24	15
KR3-315V010MB	1	6.3X11	0.24	22
KR3-315V2R2MC	2.2	8X11.5	0.24	38
KR3-315V3R3MD	3.3	10X12.5	0.24	53
KR3-315V4R7MD	4.7	10X12.5	0.24	65
KR3-315V100MF	10	10X20	0.24	115
KR3-315V220MG	22	12.5X20	0.24	182
KR3-315V330MP	33	16X25	0.24	277
KR3-315V470MP	47	16X25	0.24	330
KR3-315V101MU	100	18X31.5	0.24	567
350V				
KR3-350VR47MB	0.47	6.3X11	0.24	15
KR3-350V010MB	1	6.3X11	0.24	22
KR3-350V2R2MC	2.2	8X11.5	0.24	38
KR3-350V3R3MD	3.3	10X12.5	0.24	53
KR3-350V4R7MD	4.7	10X12.5	0.24	65
KR3-350V100MF	10	10X20	0.24	115
KR3-350V220MH	22	12.5X25	0.24	197
KR3-350V330MP	33	16X25	0.24	277
KR3-350V470MP	47	16X25	0.24	330
KR3-350V101MU	100	18X31.5	0.24	507

KOSHIN PART NO./WV(V)	CAP (μF)	SIZE (øXL) (mm)	Tanδ	Ripple Current (mArms)
400V				
KR3-400VR47MB	0.47	6.3X11	0.24	15
KR3-400V010MB	1	6.3X11	0.24	22
KR3-400V2R2MC	2.2	8X11.5	0.24	38
KR3-400V3R3MD	3.3	10X12.5	0.24	54
KR3-400V4R7ME	4.7	10X16	0.24	71
KR3-400V100MG	10	12.5X20	0.24	123
KR3-400V220MH	22	12.5X25	0.24	197
KR3-400V330MP	33	16X25	0.24	277
KR3-400V470MR	47	16X31.5	0.24	361
450V				
KR3-450VR47MC	0.47	8X11.5	0.24	18
KR3-450V010MC	1	8X11.5	0.24	25
KR3-450V2R2MD	2.2	10X12.5	0.24	43
KR3-450V3R3ME	3.3	10X16	0.24	59
KR3-450V4R7MF	4.7	10X20	0.24	76
KR3-450V100MG	10	12.5X20	0.24	123
KR3-450V220MP	22	16X25	0.24	226
KR3-450V330MR	33	16X31.5	0.24	304
KR3-450V470MT	47	16X35.5	0.24	380

Note : Allowable Ripple Current 120 Hz at 85°C