

# Koshin

## KR1 Miniature Aluminium Electrolytic Capacitors

### 85°C Miniature Standard Capacitors, Series KR1. ( Series KR3 )

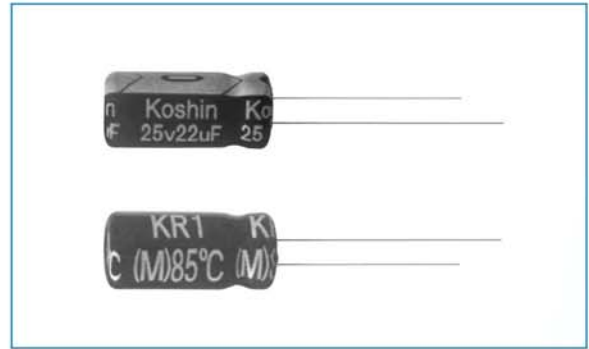
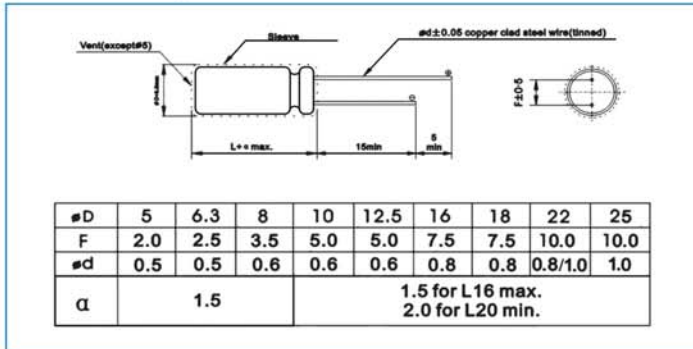
Guaranteed 2000 hours at 85°C

RoHS

Outline Drawing

Unit: mm

Photo



Marking color: White print on a deep green sleeve

### Specifications

No.	Item	Performance		
1	Temperature range (°C)	- 40 to +85	- 25to +85	
2	Leakage current (μ A)	Rated voltage (V)	6.3 to 100	
			160 to 450	
		Less than 0.01CV or 3 whichever is larger (after two minutes)		
		Less than 0.02CV or 3 (after two minutes)		
C: Rated Capacitance (μ F). V: Rated voltage (V)				
3	Capacitance tolerance (%)	± 20 (20°C, 120Hz)		
4	Tangent of the loss angle (Tan δ)	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160 200 250 350 400 450	
		Tan δ (max)	0.22 0.19 0.16 0.14 0.12 0.10 0.09 0.08 0.15 0.15 0.15 0.15 0.15 0.15	
		0.02 is added to each 1000uF increase over 1000uF.		
5	Low temperature characteristics	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160 200 250 350 400 450	
		Impedance ratio (max)	Z <sub>(-25°C)/Z<sub>(+20°C)</sub></sub>	4 3 2 2 2 2 2 2 4 4 4 6 6 6
			Z <sub>(-40°C)/Z<sub>(+20°C)</sub></sub>	8 6 4 4 3 3 3 3 15 15 15 10 10 10
6	Endurance (85°C) (Applied ripple current)	Test time	2000hours	
		Leakage current	The initial specified value or less	
		Percentage of capacitance change	Within ± 20% of initial value	
		Tangent of the loss angle	200% or less of the initial specified value	
7	Max Storage temp (85°C)	Test time: 1000 hours; other have same as endurance in No.6. Pretreatment performed JIS-C-5102		
8	Applicable standards	JIS-C-5102 and JIS-C-5141		

### Coefficient of Frequency for Ripple Current

Rated voltage (v)	CV(μ F× V)	Frequency (Hz)				
		50 · 60	120	1K	10K	100K
6.3 to 16	All CV value	0.80	1.00	1.10	1.20	1.20
	≤ 1000	0.80	1.00	1.50	1.70	1.70
25 to 35	> 1000	0.80	1.00	1.20	1.30	1.30
	≤ 1000	0.80	1.00	1.60	1.90	1.90
50 to 100	> 1000	0.80	1.00	1.20	1.30	1.30
	All CV value	0.80	1.00	1.30	1.50	1.60

### Coefficient of Temperature for Ripple Current

Temperature(°C)	70 or less	85
Coefficient	1.35	1.00

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Dimension:  $\Phi$ DxL(mm)

Ripple Current: mA/rms at 120Hz,85°C

### DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC $\mu$ F Contents	6.3V				10V				16V				25V							
	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA				
4.7	→																			
10	→																			
22	→				5X11	70					5X11	75								
33	5X11	72					5X11	84					5X11	90						
47	5X11	90					5X11	100					5X11	110						
100	5X11	130					5X11	145			6.3X11	180	5X11	160	6.3X11	190				
220	6.3X11	230	5X11	200	6.3X11	250	5X11	220	8X11.5	300	6.3X11	260	8X11.5	320						
330	8X11.5	290	6.3X11	270	8X11.5	350	6.3X11	290	8X11.5	370			10X12.5	470	8X11.5	440				
470	8X11.5	380	6.3X11	320	8X11.5	415	6.3X11	350	10X12.5	520	8X11.5	440	10X16	620	10X12.5	545				
1000	8X11.5	540					10X12.5	650					10X16	785			12.5X25	1090	12.5X20	955
2200	10X20	1000					12.5X20	1240	10X20	1070	12.5X20	1295					16X25	1660	12.5X25	1540
3300	12.5X20	1380	10X20	1185	12.5X20	1420					16X25	1840	12.5X25	1655	16X31.5	2070	16X25	1975		
4700	16X25	1880	12.5X20	1545	16X25	1980	12.5X25	1780	16X31.5	2260	16X25	2090	18X35.5	2520	16X31.5	2420				
6800	16X25	2120	12.5X25	1880	16X25	2220					16X31.5	2520					18X35.5	2880		
10000	16X31.5	2500	16X25	2330	18X35.5	2880	16X35.5	2670	18X40	3080	18X35.5	2920	22X40	3440	18X40	3080				
22000	22X40	3700	18X40	3320	22X40	3790	18X40	3370	22X40	3900										

V.DC $\mu$ F Contents	35V				50V				63V				100V							
	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA				
0.1	→																			
0.22	→																			
0.33	→																			
0.47	→																			
1	→																			
2.2	→																			
3.3	→																			
4.7	5X11	40					5X11	42					5X11	45						
10	5X11	58					5X11	65					5X11	70						
22	5X11	87					5X11	95			6.3X11	115			8X11.5	135	6.3X11	115		
33	6.3X11	115	5X11	108	6.3X11	136					8X11.5	150	6.3X11	140	10X16	195	8X11.5	145		
47	6.3X11	145	5X11	130	6.3X11	165					8X11.5	190	6.3X11	170	10X16	255	10X12.5	235		
100	8X11.5	240	6.3X11	210	8X11.5	260					10X12.5	320					10X20	370		
220	10X12.5	420	8X11.5	385	10X16	490					10X20	565	10X16	490	12.5X25	675	12.5X20	640		
330	10X16	570	10X12.5	490	12.5X20	635					12.5X20	765	10X20	710	16X31.5	972	16X25	825		
470	10X16	740					12.5X20	860					16X25	1050	12.5X20	900	18X35.5	1135	16X31.5	1070
1000	12.5X20	1145					16X25	1530					16X31.5	1700	16X25	1560	22X40	2600	18X40	2410
2200	16X31.5	1890	16X25	1785	18X40	2231					18X40	2385								
3300	18X35.5	2430	16X35.5	2275	22X40	2785					22X40	3000								
4700	18X40	2890	18X35.5	2700	25X40	3300					25X40	3560								



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Dimension:  $\Phi$ DxL(mm)

Ripple Current: mA/rms at 120Hz,85°C

### DIMENSION & PERMISSIBLE RIPPLE CURRENT

$\mu$ F	V.DC Contents	160V				200V				250V			
		$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA
0.47		6.3X11	15	5X11	13	6.3X11	16	5X11	14	8X11.5	21		
1		6.3X11	24	5X11	20	6.3X11	25	5X11	21	8X11.5	32		
2.2		6.3X11	34	5X11	29	8X11.5	44	6.3X11	37	8X11.5	49	6.3X11	42
3.3		8X11.5	50	6.3X11	43	8X11.5	54	6.3X11	46	10X12.5	70	8X11.5	60
4.7		8X11.5	60	6.3X11	51	10X12.5	76	8X11.5	64	10X16	93	8X11.5	72
10		10X16	115	10X12.5	104	10X20	138	10X12.5	112	10X20	150	10X16	138
22		12.5X20	216	10X20	189	12.5X20	234	10X20	204	12.5X20	255	10X20	220
33		12.5X20	270	10X20	228	12.5X25	318	12.5X20	288	12.5X25	348	12.5X20	310
47		12.5X25	354	12.5X20	318	16X25	426	12.5X25	378	16X25	468	12.5X25	420
100		16X25	582	12.5X25	510	16X35.5	678	16X25	582	18X40	822	16X35.5	732
220		18X35.5	900	16X31.5	792	18X31.5	900	18X35.5	1002	22X40	1134		
330		16X35.5	850	18X35.5	984	18X35.5	1050						

$\mu$ F	V.DC Contents	350V				400V				450V			
		$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA	$\Phi$ DxL	mA
0.47		8X11.5	21	6.3X11	18	10X12.5	26	8X11.5	21	10X12.5	26	8X11.5	21
1		8X11.5	32	6.3X11	27	10X12.5	38	8X11.5	32	10X12.5	38	8X11.5	32
2.2		10X16	63	8X11.5	49	10X16	63	10X12.5	57	10X16	63	10X12.5	57
3.3		10X16	78	10X12.5	70	10X20	86	10X16	78	10X20	86	10X16	78
4.7		10X20	103	10X16	93	12.5X20	120	10X20	103	12.5X20	120	10X20	103
10		12.5X20	174	10X20	150	12.5X25	192	12.5X20	174	12.5X25	192	12.5X20	174
22		12.5X25	282	12.5X20	255	16X25	318	12.5X25	280	16X25	354		
33		16X31.5	438	16X25	390	16X35.5	460	16X25	390	18X35.5	490	16X31.5	435
47		16X35.5	500	16X31.5	474	18X35.5	585	16X31.5	474	18X40	600	16X35.5	510
100		18X40	685			22X40	710			22X45	750		

Note: Case size in mark of "\*" is smaller.