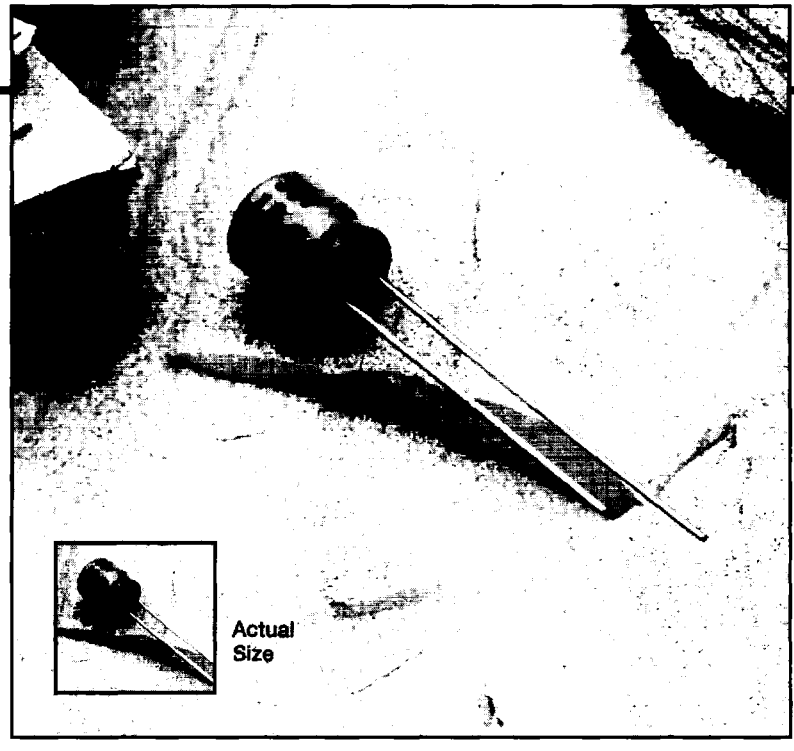
SRAC Series

UNITED CHEMI-CON

SRAC
MINIATURE - 85°C

- **Miniature**
- **7mm Nominal Height**
- **Solvent Proof**
- **+85°C Maximum Temperature**



The SRAC series capacitors are designed for use in ultra miniature applications, as the nominal height is 7mm. The SRAC series also has a rated lifetime of 1,000 hours at 85°C. Typical applications include video tape recorders, car audio equipment, and other personal electronic products.

The SRAC series capacitors were developed to withstand HCFC cleaning agents for five minutes by ultrasonic, vapor or immersion. This solvent proof design allows all circuit board components to be cleaned together, at the same time, without resorting to more expensive epoxy end-sealed capacitors. Refer to the Mini-Glossary for recommended cleaning conditions.

Summary of Specifications

- **Radial lead terminals.**
- **Capacitance range: 0.1 to 470μF.**
- **Voltage range: 4 to 63VDC.**
- **Operating temperature range: −40°C to +85°C.**
- **Leakage current: 0.01CV or 3μA, whichever is greater, after 2 minutes at +20°C.**
- **Standard capacitance tolerance: ±20%**
- **Nominal case size (D×L): 4×7mm to 8×7mm.**
- **Rated lifetime: 1,000 hours at +85°C.**

SRAC Series

SRAC Specifications

Item	Characteristics
Operating Temperature Range	−40 to +85°C
Rated Voltage Range	4 to 63VDC
Capacitance Range	0.1 to 470μF
Capacitance Tolerance	±20% (M) at +20°C, 120Hz
Leakage Current	I = 0.01CV or 3μA, whichever is greater, after 2 minutes at +20°C. Where I = Leakage current (μA), C = Nominal capacitance (μF) and V = Rated voltage (V)
Dissipation Factor (Tan δ)	At +20°C, 120Hz
Low Temperature Characteristics	At 120Hz, impedance (Z) ratio between the −25°C or −40°C value and +20°C value shall not exceed the values given below.
Load Life	The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to the DC rated voltage for 1,000 hours at +85°C. The sum of DC voltage and peak AC voltage must not exceed the full rated voltage of the capacitors. Capacitance change: ≤ ±20% of initial measured value Tan δ (DF) : ≤ 200% of initial specified value Leakage current : ≤ initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to +20°C after exposing them for 500 hours at +85°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. Capacitance change: ≤ ±20% of initial measured value Tan δ (DF) : ≤ 200% of initial specified value Leakage current : ≤ initial specified value
Others	Satisfies characteristic W of JIS C5141

Rated Voltage (V)	4	6.3	10	16	25	35	50	63
Tan δ (DF)	0.37	0.26	0.22	0.18	0.16	0.14	0.12	0.10

Rated Voltage (V)	4	6.3	10	16	25	35	50	63
Z(−25°C)/Z(+20°C)	4	4	3	2	2	2	2	2
Z(−40°C)/Z(+20°C)	10	10	8	6	4	3	3	3

Part Numbering System for SRAC Series

When ordering, always specify complete catalog number for SRAC Series.

SRAC 50 VB 10R M 6X7 LL

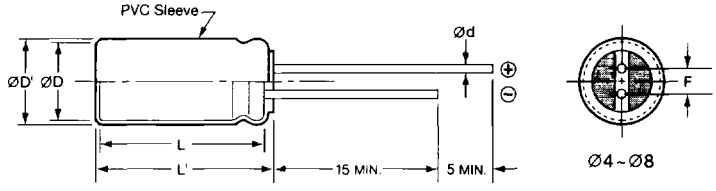
- LL — Lead Length: LL is Standard.
- 6X7 — Case Code: See Case Sizes in Tables.
- M — Capacitance Tolerance: M = ±20%
- 10R — Capacitance Value: Expressed in microfarads. The first two digits are significant figures, and the third digit indicates the number of zeros for capacitance of 100μF or more. R indicates the decimal point for capacitance less than 100μF (e.g. R10 = .10μF; 1R0 = 1.0μF; 10R = 10μF; 101 = 100μF; 102 = 1,000μF; 103 = 10,000μF).
- VB — Lead Configuration: VB = Radial Lead Terminals.
- 50 — DC Rated Voltage: Expressed in Volts (e.g. 50 = 50WVDC).
- SRAC — Series Name: Indicates Basic Capacitor Design.

SRAC Series

Diagram of Dimensions

VB/Radial Lead

Unit: mm



Gas escape end seal for all case diameters.

For optional lead configurations and tape and reel packaging, refer to the beginning of the Miniature section.

ØD	ØD' max.	L' max.	Ød	F±0.5
4	ØD+0.5	L+1.0	0.45	1.5
5	ØD+0.5	L+1.0	0.45	2.0
6.3	ØD+0.5	L+1.0	0.45	2.5
7	ØD+0.5	L+1.0	0.45	2.5
8	ØD+0.5	L+1.0	0.45	3.5

Standard Voltage Ratings - VB/Radial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D×L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (mA rms) at +85°C, 120Hz
4 Volts 5 Volts Surge	33	SRAC4VB33RM4X7LL	4 × 7	18.584	26
	47	SRAC4VB47RM4X7LL	4 × 7	13.048	34
	100	SRAC4VB101M5X7LL	5 × 7	6.133	61
	220	SRAC4VB221M7X7LL	7 × 7	2.788	95
	330	SRAC4VB331M8X7LL	8 × 7	1.858	127
	470	SRAC4VB471M8X7LL	8 × 7	1.305	154
6.3 Volts 8 Volts Surge	22	SRAC6.3VB22RM4X7LL	4 × 7	19.589	31
	47	SRAC6.3VB47RM5X7LL	5 × 7	9.169	47
	330	SRAC6.3VB331M8X7LL	8 × 7	1.306	156
10 Volts 13 Volts Surge	15	SRAC10VB15RM4X7LL	4 × 7	24.31	28
	33	SRAC10VB33RM5X7LL	5 × 7	11.05	43
	68	SRAC10VB68RM6X7LL	6.3 × 7	5.363	63
	100	SRAC10VB101M6X7LL	6.3 × 7	3.647	80
	220	SRAC10VB221M8X7LL	8 × 7	1.658	140
16 Volts 20 Volts Surge	6.8	SRAC16VB6R8M4X7LL	4 × 7	43.875	20
	10	SRAC16VB10RM4X7LL	4 × 7	29.835	25
	15	SRAC16VB15RM5X7LL	5 × 7	19.89	31
	22	SRAC16VB22RM5X7LL	5 × 7	13.561	39
	47	SRAC16VB47RM6X7LL	6.3 × 7	6.348	59
	100	SRAC16VB101M7X7LL	7 × 7	2.984	97
25 Volts 32 Volts Surge	33	SRAC25VB33RM6X7LL	6.3 × 7	8.036	53
	47	SRAC25VB47RM7X7LL	7 × 7	5.643	71
35 Volts 44 Volts Surge	4.7	SRAC35VB4R7M4X7LL	4 × 7	49.372	20
	6.8	SRAC35VB6R8M5X7LL	5 × 7	34.125	24
	10	SRAC35VB10RM5X7LL	5 × 7	23.205	30
	15	SRAC35VB15RM6X7LL	6.3 × 7	15.47	37
	22	SRAC35VB22RM6X7LL	6.3 × 7	10.548	47
	33	SRAC35VB33RM7X7LL	7 × 7	7.032	64
	47	SRAC35VB47RM8X7LL	8 × 7	4.937	83

***The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.**

SRAC Series

Standard Voltage Ratings - VB/Radial Lead

Rated Voltage (WVDC)	Capacitance (µF)	Catalog Part Number	Nominal Case Size* D x L (mm)	Maximum ESR (Ω) at +20°C, 120Hz	Maximum Ripple Current (mA rms) at +85°C, 120Hz
50 Volts 63 Volts Surge	0.1	SRAC50VBR10M4X7LL	4 x 7	1,989.0	1.0
	0.15	SRAC50VBR15M4X7LL	4 x 7	1,326.0	1.5
	0.22	SRAC50VBR22M4X7LL	4 x 7	904.091	2.3
	0.33	SRAC50VBR33M4X7LL	4 x 7	602.727	3.5
	0.47	SRAC50VBR47M4X7LL	4 x 7	423.191	5.0
	0.68	SRAC50VBR68M4X7LL	4 x 7	292.5	7.1
	1.0	SRAC50VB1R0M4X7LL	4 x 7	198.9	10
	1.5	SRAC50VB1R5M4X7LL	4 x 7	132.6	12
	2.2	SRAC50VB2R2M4X7LL	4 x 7	90.409	15
	3.3	SRAC50VB3R3M4X7LL	4 x 7	60.273	18
	4.7	SRAC50VB4R7M5X7LL	5 x 7	42.319	23
	6.8	SRAC50VB6R8M6X7LL	6.3 x 7	29.25	28
	10	SRAC50VB10RM6X7LL	6.3 x 7	19.89	34
	22	SRAC50VB22RM7X7LL	7 x 7	9.041	57
	33	SRAC50VB33RM8X7LL	8 x 7	6.027	76
63 Volts 79 Volts Surge	0.1	SRAC63VBR10M4X7LL	4 x 7	1,657.5	1.3
	0.15	SRAC63VBR15M4X7LL	4 x 7	1,105.0	1.9
	0.22	SRAC63VBR22M4X7LL	4 x 7	753.409	2.9
	0.33	SRAC63VBR33M4X7LL	4 x 7	502.273	4.4
	0.47	SRAC63VBR47M4X7LL	4 x 7	352.66	7.9
	0.68	SRAC63VBR68M4X7LL	4 x 7	243.75	9.2
	1.0	SRAC63VB1R0M4X7LL	4 x 7	165.75	11
	1.5	SRAC63VB1R5M4X7LL	4 x 7	110.5	13
	2.2	SRAC63VB2R2M4X7LL	4 x 7	75.341	17
	3.3	SRAC63VB3R3M5X7LL	5 x 7	50.227	21
	4.7	SRAC63VB4R7M6X7LL	6.3 x 7	35.266	26
	10	SRAC63VB10RM7X7LL	7 x 7	16.575	43

***The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.**