Type EDLR, Long Life Electric Double Layer Ultracapacitor



Type EDLR electric double layer supercapacitors offer high capacitance values in a thru hole stacked coin type package. Primarily designed for integrated circuit voltage backup, the capacitors can also be used to deliver the initial power from batteries.

Highlights

- Long life
- High discharge current
- 85 ºC Operating temperature

Specifications

Operating Temperature Range	–25 ºC to +85 ºC
Rated Voltage Range	3.6 Vdc to 5.5 Vdc
Capacitance Range	0.1 F to 1.0 F

Type	**RF**		**RD**	**RG**
Capacitance (F)	0.10	0.68	0.22	1.0
Voltage (Vdc)	5.5		3.6	
Capacitance Tolerance (%)	-20 to +80			
Max. Initial Internal Resistance (ohms at 1kHz)	75	20	50	20

Life, Moisture and Temperature Characteristics	After the following procedures have been performed, measure the capacitance and internal resistance at +20 ºC.
Life Test:	Apply the max. operating voltage for 2000 h at +85 ºC
Capacitance Change **Internal Resistance**	±30% of the initial measured value at +20 ºC ≤ 2 times the initial specified value
Shelf Life:	Subject the capacitor to 2000 hours without voltage at +85 ºC.
Capacitance Change **Internal Resistance**	±30% of the initial measured value at +20 ºC ≤ 2 times the initial specified value
Moisture Resistance:	Subject the capacitor to 500 hours at +55 ºC at 90 to 95% RH without voltage.
Capacitance Change **Internal Resistance**	±10% of the initial measured value at +20 ºC meets the initial specified value
Soldering Heat Resistance:	Immerse the capacitor leads to within 2 mm of the capacitor body in solder that is at a temperature of 260 ºC for 10 seconds.
Capacitance Change **Internal Resistance**	±10% of the initial measured value at +20 ºC meets the initial specified value

Temperature Cycling	Stabilize the capacitor at each of the following temperatures for 1 hour in sequence, and then measure the capacitance and internal resistance at that temperature.
	1. +20 ºC 2. -25 ºC 3. +20 ºC 4. +85 ºC 5. +20 ºC
Capacitance Change (at -25 ºC) **Internal resistance (at -25 ºC)** **Capacitance Change (at +85 ºC)** **Internal resistance (at +85 ºC)** **Capacitance Change (Step 5 at +20 ºC)** **Internal resistance (Step 5 at +20 ºC)**	±30% of the initial measured value at +20 ºC ≤ 5 times the initial measured value at +20 ºC ±30% of the initial measured value at +20 ºC ≤ 4 times the initial measured value at +20 ºC ±10% of the initial measured value at +20 ºC meets the initial specified value
RoHS Compliant without Exemptions	

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Ratings

Catalog Part Number	Capacitance (F)	Voltage (Vdc)	Max. Resistance @ 1 kHz (Ω)	Case Type	Case Dia. (mm)	Case Height (mm)	Lead Spacing	Max. Discharge Current (ma)	Weight (g)	Pkg Qty (pcs)
EDLRF104A5R5C	0.10	5.5	75	Stacked Coin	13.5	9.5	5	3	3.3	200
EDLRF684B5R5C	0.68		20		21.5			20	4.1	100*
EDLRD224H3R6C	0.22	3.6	50	Stacked Coin	10.5	6.0	10	1	1.0	200
EDLRD224V3R6C						11.5	5			
EDLRG105H3R6C	1.0	3.6	20	Stacked Coin	19.0	6.5	20	20	4.1	100*
EDLRG105V3R6C						21.0	5			

Note: Pkg is bulk except * items are in trays.

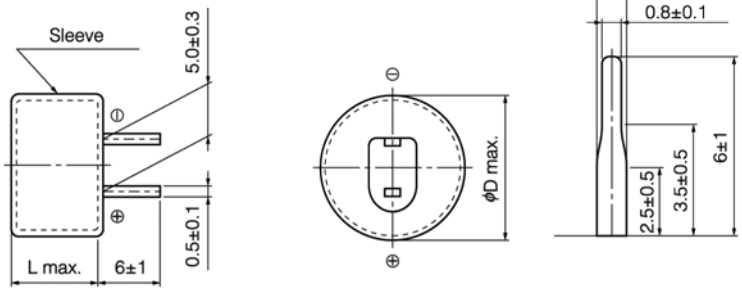
Part Numbering System

EDL **RF** **104** **A** **5R5** **C**

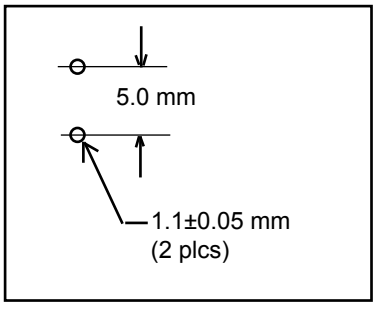
- EDL — Ultracapacitors
- RF — Series
- 104 — Capacitance: 104 = 0.1 Farads; 105 = 1.0 Farads
- A — Case Style: A = 13.5 Dia.; B = 21.5 Dia.; H = Horizontal Style; V = Vertical Style
- 5R5 — Voltage: 5R5 = 5.5 Vdc; 3R6 = 3.6 Vdc
- C — Stacked Coin Style

EDLRF Outline Drawing

Stacked Coin



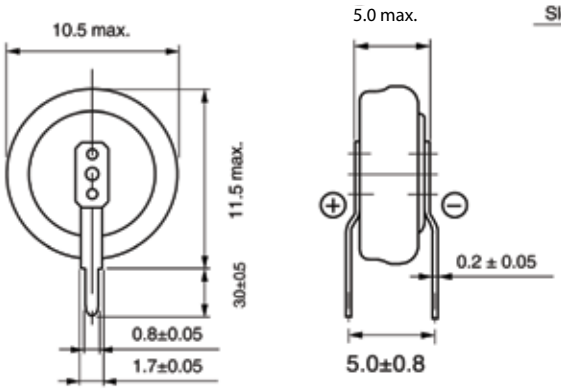
Capacitance (F)	D (mm)	L (mm)
0.1	13.5	9.5
0.68	21.5	9.5



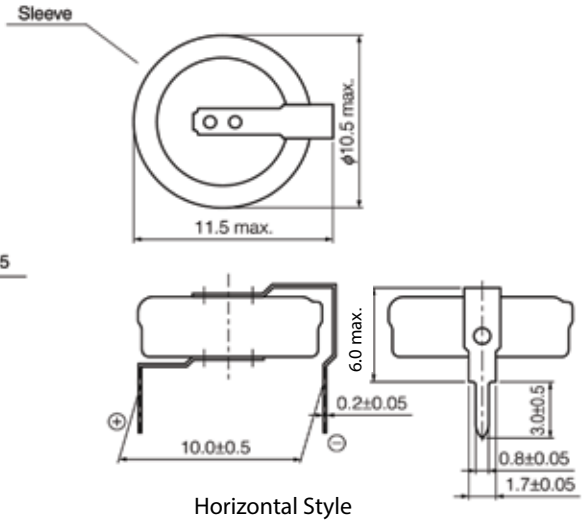
Recommended Printed Circuit Board Hole Pattern

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EDLRD Outline Drawing

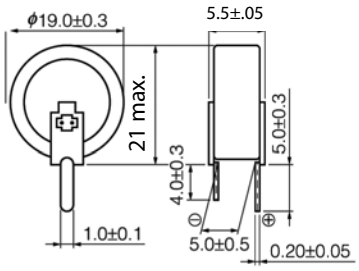


Vertical Style

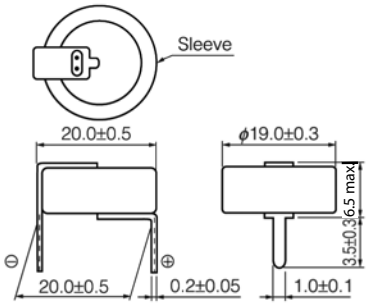


Horizontal Style

EDLRG Outline Drawing



Vertical Style



Horizontal Style

Recommended Soldering Procedures	
Hand Soldering	Use a 30W iron with a max. temperature of 350 ºC for 4 seconds.
Wave Soldering	Pre-heat circuit board to a surface temp of 110 ºC for a max. of 60 seconds, with a max. component temperature of 100 ºC. Min. printed circuit board thickness of 0.8 mm. Recommended solder bath temperature of 240 ºC with a max. dipping time of 5 seconds.

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