

# Type EDLR, Long Life Electric Double Layer Ultracapacitor



Type EDLRelectricdoublelayer supercapacitorso er 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 °C Operating temperature

## Specifications

Operating Temperature Range	-25 °C to +85 °C
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	1.0
Voltage (Vdc)	5.5		3.6
Capacitance Tolerance (%)	-20 to +80		
Max. Initial Internal Resistance (ohms at 1kHz)	75	20	20
Life, Moisture and Temperature Characteristics	After the following procedures have been performed, measure the capacitance and internal resistance at +20 °C.		
Life Test:	Apply the max. operating voltage for 2000 h at +85 °C		
Capacitance Change	±30% of the initial measured value at +20 °C		
Internal Resistance	≤ 2 times the initial specified value		
Shelf Life:	Subject the capacitor to 2000 hours without voltage at +85 °C.		
Capacitance Change	±30% of the initial measured value at +20 °C		
Internal Resistance	≤ 2 times the initial specified value		
Moisture Resistance:	Subject the capacitor to 500 hours at +55 °C at 90 to 95% RH without voltage.		
Capacitance Change	±10% of the initial measured value at +20 °C		
Internal Resistance	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 °C for 10 seconds.		
Capacitance Change	±10% of the initial measured value at +20 °C		
Internal Resistance	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.
	<ol style="list-style-type: none"> <li>1. +20 °C</li> <li>2. -25 °C</li> <li>3. +20 °C</li> <li>4. +85 °C</li> <li>5. +20 °C</li> </ol>
Capacitance Change (at -25 °C)	±30% of the initial measured value at +20 °C
Internal resistance (at -25 °C)	≤ 5 times the initial measured value at +20 °C
Capacitance Change (at +85 °C)	±30% of the initial measured value at +20 °C
Internal resistance (at +85 °C)	≤ 4 times the initial measured value at +20 °C
Capacitance Change (Step 5 at +20 °C)	±10% of the initial measured value at +20 °C
Internal resistance (Step 5 at +20 °C)	meets the initial specified value
RoHS Compliant	

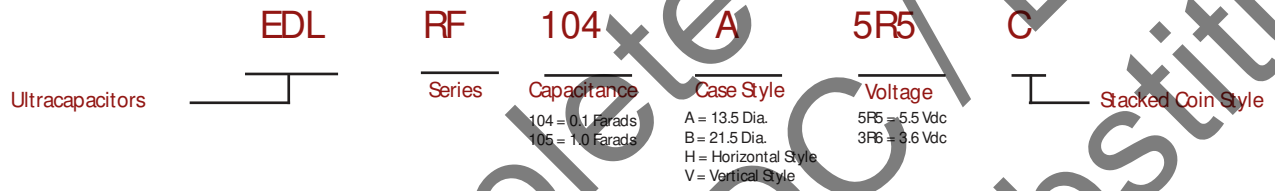
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## Ratings

Catalog Part Number	Capacitance (F)	Voltage (Vdc)	Max. Resistance @1 kHz ( $\Omega$ )	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*
EDLRF224H3R6C	0.22	3.6	50	Stacked Coin	10.5	6.0	10	1	1.0	200
EDLRF224V3R6C						11.5	5			
EDLRG105H3R6C	1.0	3.6	20	Stacked Coin	19.0	6.5	20	20	4.1	100*
EDLRG105V3R6C						21.0	5			

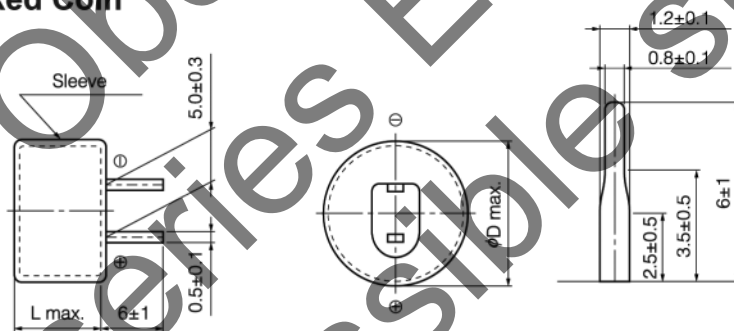
Note: Pkg is bulk except \* items are in trays.

## Part Numbering System

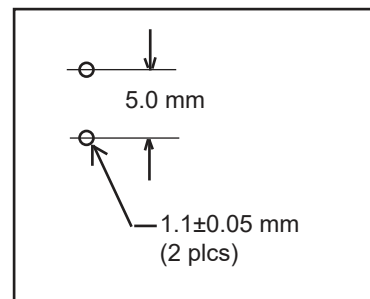


## EDLRF Outline Drawing

### Stacked Coin



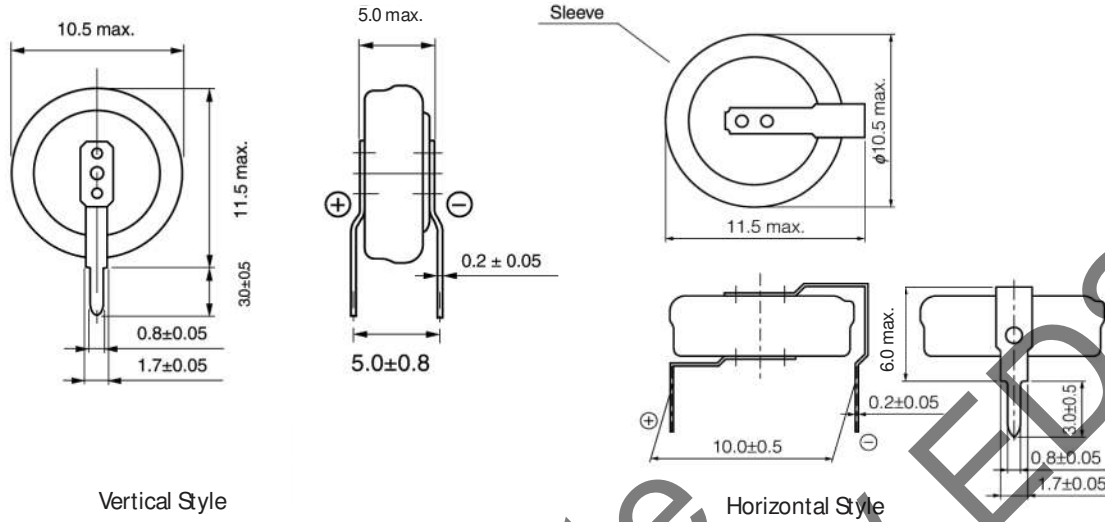
Capacitance (F)	D (mm)	L (mm)
0.1	13.5	9.5
0.68	21.5	9.5



Recommended Printed Circuit Board Hole Pattern

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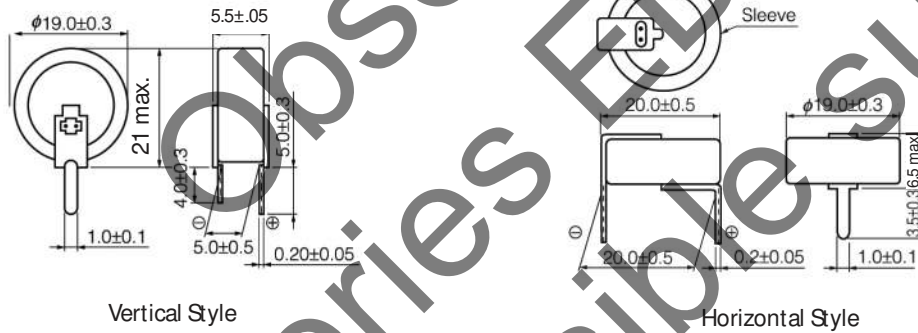
## EDLRD Outline Drawing



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 °C for 4 seconds.
Wave Soldering	Pre-heat circuit board to a surface temp of 110 °C for a max. of 60 seconds, with a max. component temperature of 100 °C. Min. printed circuit board thickness of 0.8 mm. Recommended solder bath temperature of 240 °C with a max. dipping time of 5 seconds.

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Obsolète EBC-115  
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for a possible substitute