

# KR Supercapacitors

## Coin cells



### Description

Eaton supercapacitors are high reliability, high power, ultra-high capacitance energy storage devices utilizing electric double layer capacitor (EDLC) construction combined with proprietary materials and processes. This combination of advanced technologies allows Eaton to offer a wide variety of capacitor solutions tailored to applications for backup power, pulse power and hybrid power systems. They can be applied as the sole energy storage or in combination with batteries to optimize cost, life time and run time. System requirements can range from a few microwatts to megawatts. All products feature low ESR for high power density with environmentally friendly materials for a green power solution. Eaton supercapacitors are maintenance-free with design lifetimes up to 20 years\* and operating temperatures down to -40 °C and up to +85 °C.

### Features and benefits

- High specific capacitance
- Low leakage current
- Long cycle life
- Eco-friendly

### Applications

- Computers and peripherals
- Network switches and routers
- Utility meters
- HVAC Controls
- Appliances and white goods
- Real-time clock backup
- Office equipment

\*Supercapacitor lifetimes vary based on charge voltage and temperature. See Eaton's application guidelines or contact your local Eaton sales representative for more information on lifetime estimates



Powering Business Worldwide

## Specifications<sup>1</sup>

Capacitance	0.1 F to 1.5 F
Maximum working voltage	5.5 V
Surge voltage	6.3 V
Capacitance tolerance	-20% to +80% +20 °C
Operating temperature range <sup>2</sup>	-25 °C to +70 °C
Extended operating temperature range <sup>2</sup>	-25 °C to +85 °C (with voltage derating to 3.6 V @ +85 °C)

## Standard Product

Capacitance (F)	Part number	Type	Lead length	Maximum initial ESR (Ω) (Equivalent series resistance) measured @ 1 kHz	Typical mass (g)
0.1	KR-5R5V104-R	Vertical	Standard	75	1.4
0.1	KR-5R5H104-R	Horizontal	Standard	75	1.4
0.1	KR-5R5C104-R	Cylindrical	Standard	75	3.3
0.1	KR-5R5C104H-R	Cylindrical	Short	75	3.3
0.22	KR-5R5V224-R	Vertical	Standard	75	1.4
0.22	KR-5R5H224-R	Horizontal	Standard	75	1.4
0.22	KR-5R5C224-R	Cylindrical	Standard	75	3.3
0.22	KR-5R5C224H-R	Cylindrical	Short	75	3.3
0.33	KR-5R5V334-R	Vertical	Standard	50	1.4
0.33	KR-5R5H334-R	Horizontal	Standard	50	1.4
0.33	KR-5R5C334-R	Cylindrical	Standard	50	3.3
0.33	KR-5R5C334H-R	Cylindrical	Short	50	3.3
0.47	KR-5R5V474-R	Vertical	Standard	50	1.4
0.47	KR-5R5H474-R	Horizontal	Standard	50	1.4
0.47	KR-5R5C474-R	Cylindrical	Standard	50	3.3
0.47	KR-5R5C474H-R	Cylindrical	Short	50	3.3
1.0	KR-5R5V105-R	Vertical	Standard	30	4.2
1.0	KR-5R5H105-R	Horizontal	Standard	30	4.2
1.0	KR-5R5C105-R	Cylindrical	Standard	30	9.1
1.0	KR-5R5C105H-R	Cylindrical	Short	30	9.1
1.5	KR-5R5V155-R	Vertical	Standard	30	4.2
1.5	KR-5R5H155-R	Horizontal	Standard	30	4.2
1.5	KR-5R5C155-R	Cylindrical	Standard	30	9.1
1.5	KR-5R5C155H-R	Cylindrical	Short	30	9.1

## Performance

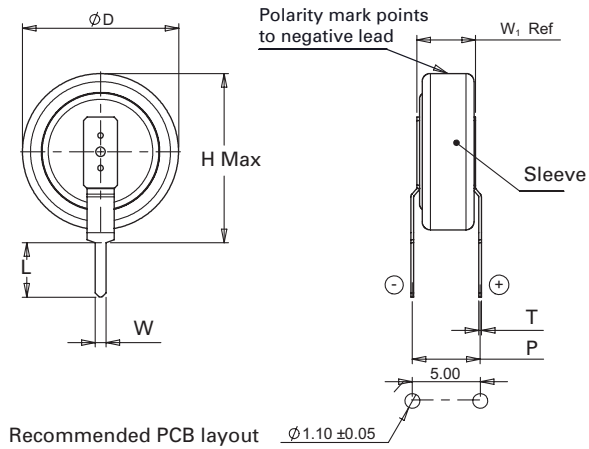
Parameter	Capacitance change (% of initial value)	ESR (% of maximum initial value)
Life — +70 °C @ 5.5 Vdc, 1000 hours	≤ 30%	≤ 400%
Life — +85 °C @ 3.6 Vdc, 2000 hours	≤ 30%	≤ 400%
Storage Life — -25 °C to +70 °C, 1000 hours	≤ 30%	≤ 400%

1. Testing and verification of product under end application conditions is recommended
2. Not recommended for +85 °C/85% RH applications

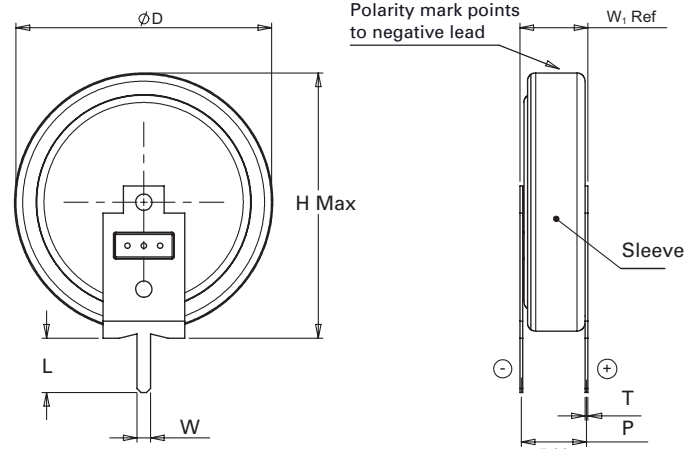
**Dimensions (mm)**

**V Type (Vertical)**

KR-5R5V104/224/334/474-R



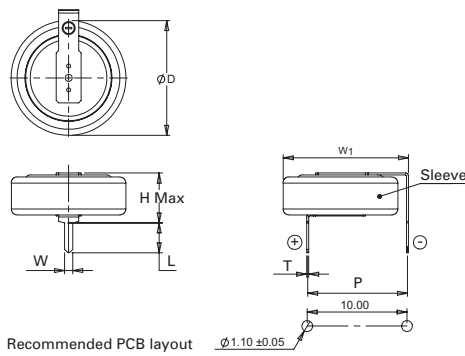
R-5R5V105/155-R



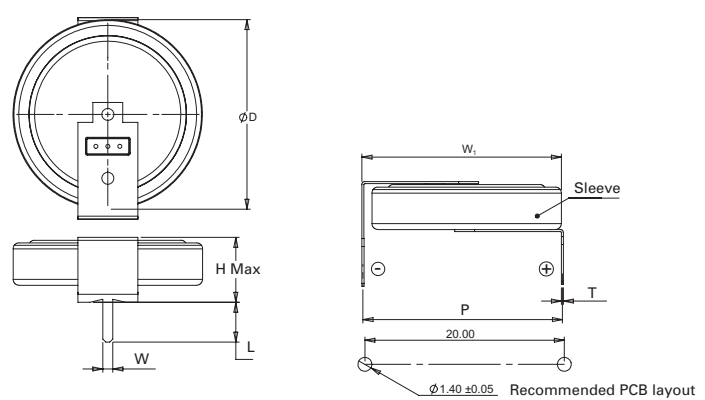
Part Number	$\phi D \pm 0.2$	H Max	L $\pm 0.1$	P $\pm 0.3$	T	W $\pm 0.1$	W1 Ref.
KR-5R5V104-R	11.5	12.7	4.0	5.0	0.2	0.8	4.3
KR-5R5V224-R	11.5	12.7	4.0	5.0	0.2	0.8	4.3
KR-5R5V334-R	11.5	12.7	4.0	5.0	0.2	0.8	4.3
KR-5R5V474-R	11.5	12.7	4.0	5.0	0.2	0.8	4.3
KR-5R5V105-R	19.0	19.7	4.0	5.0	0.2	1.0	5.0
KR-5R5V155-R	19.0	19.7	4.0	5.0	0.2	1.0	5.0

**H Type (Horizontal)**

KR-5R5H104/224/334/474-R



KR-5R5H105/155-R

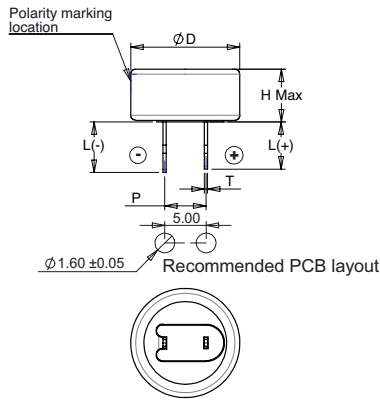


Part Number	$\phi D \pm 0.2$	H Max	L $\pm 0.1$	P	T	W $\pm 0.1$	W1 $\pm 0.5$
KR-5R5H104-R	11.5	5.2	3.0	10.0 $\pm$ 0.3	0.2	0.8	12.4
KR-5R5H224-R	11.5	5.2	3.0	10.0 $\pm$ 0.3	0.2	0.8	12.4
KR-5R5H334-R	11.5	5.2	3.0	10.0 $\pm$ 0.3	0.2	0.8	12.4
KR-5R5H474-R	11.5	5.2	3.0	10.0 $\pm$ 0.3	0.2	0.8	12.4
KR-5R5H105-R	19.0	6.7	4.0	20.0 $\pm$ 0.5	0.2	1.0	20.0
KR-5R5H155-R	19.0	6.7	4.0	20.0 $\pm$ 0.5	0.2	1.0	20.0

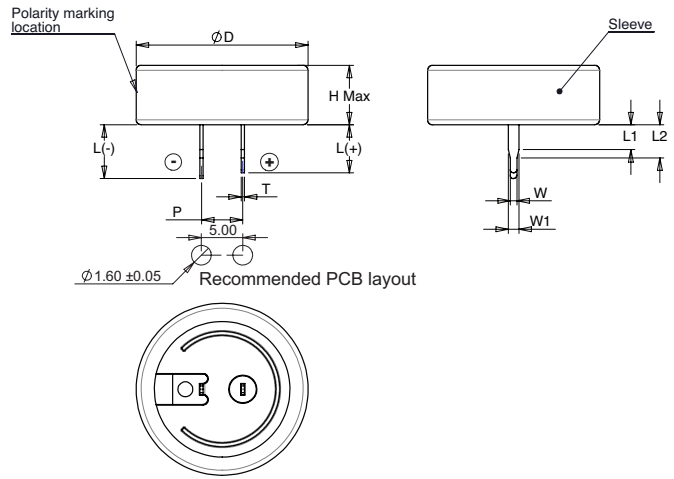
Dimensions (mm)

C Type (cylindrical)

KR-5R5C104/224/334/474-R



KR-5R5C105/155-R



Part Number	Ø D Max	H Max	L (-) ±0.2	L (+) ±0.2	P ±0.3	T ±0.05	L1 ±0.10	L2 ±0.10	W ±0.06	W1 ±0.06
KR-5R5C104-R	13.5	6.5	6.1	5.7	5.0	0.4	3.0	4.0	0.8	1.3
KR-5R5C104H-R	13.5	6.5	3.3	3.3	5.0	0.4	0.9	1.9	0.8	1.3
KR-5R5C224-R	13.5	6.5	6.1	5.7	5.0	0.4	3.0	4.0	0.8	1.3
KR-5R5C224H-R	13.5	6.5	3.3	3.3	5.0	0.4	0.9	1.9	0.8	1.3
KR-5R5C334-R	13.5	6.5	6.1	5.7	5.0	0.4	3.0	4.0	0.8	1.3
KR-5R5C334H-R	13.5	6.5	3.3	3.3	5.0	0.4	0.9	1.9	0.8	1.3
KR-5R5C474-R	13.5	6.5	6.1	5.7	5.0	0.4	3.0	4.0	0.8	1.3
KR-5R5C474H-R	13.5	6.5	3.3	3.3	5.0	0.4	0.9	1.9	0.8	1.3
KR-5R5C105-R	21.5	7.1	6.5	5.8	5.0	0.4	3.0	4.0	0.8	1.3
KR-5R5C105H-R	21.5	7.1	3.3	3.3	5.0	0.4	0.8	1.8	0.8	1.3
KR-5R5C155-R	21.5	7.1	6.5	5.8	5.0	0.4	3.0	4.0	0.8	1.3
KR-5R5C155H-R	21.5	7.1	3.3	3.3	5.0	0.4	0.8	1.8	0.8	1.3

Part numbering system

KR	—	5	R	5	□	□	□	H*	-R
Family Code	Voltage (V) R = Decimal point	Configuration		Capacitance (µF)		Short lead length	Standard product		
	5R5 = 5.5 V	V = Vertical H = Horizontal C=Cylindrical	Value	Multiplier					
				Example: 474 = 47 x 10 <sup>4</sup> µF or 0.47 F					

\* Applies to cylindrical part numbers only. If ordering vertical or horizontal types, or standard lead length on cylindrical type, omit "H" from part number.

Packaging information

- Standard packaging: 500 parts per package
- For 0.1 F to 0.47 F, 500 parts per bag
- For 1.0 F to 1.5 F, 100 parts per tray, 5 trays per box

Part marking

- Manufacturer
- Capacitance (F)
- Maximum operating voltage (V)
- Polarity