

# KW Supercapacitors

## Coin cells



### Description

Eaton supercapacitors are unique, ultrahigh capacitance devices utilizing electric double layer capacitor (EDLC) construction combined with new, high performance materials. This combination of advanced technologies allows Eaton to offer a wide variety of capacitor solutions tailored to specific applications that range from a few microamps for several days to several milliamps for milliseconds. 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
- Broad operating range, full specification -40 °C to +85 °C

### Applications

- Electric utilitymeters
- Motor control units
- Solar inverters
- Real-Time Clock (RTC) backup
- Programmable Logic Controllers (PLCs)
- Irrigation and water control systems

\*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 1.0 F
Working voltage	5.5 V
Surge voltage	6.3 V
Capacitance tolerance	-20% to +80% (+20 °C)
Operating temperature range <sup>2</sup>	-40 °C to +85 °C

### Standard Product

Capacitance (F)	Part number	Lead length	Maximum initial ESR (Ω) (Equivalent series resistance) measured @ 1 kHz	Typical mass (g)
0.1	KW-5R5C104-R	Standard	50	3.7
0.1	KW-5R5C104H-R	Short	50	3.7
0.22	KW-5R5C224-R	Standard	50	3.7
0.22	KW-5R5C224H-R	Short	50	3.7
0.33	KW-5R5C334-R	Standard	50	3.7
0.33	KW-5R5C334H-R	Short	50	3.7
0.68	KW-5R5C684-R	Standard	30	10.2
0.68	KW-5R5C684H-R	Short	30	10.2
1.0	KW-5R5C105-R	Standard	30	10.4
1.0	KW-5R5C105H-R	Short	30	10.4

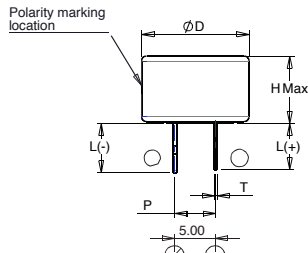
### Performance

Parameter	Capacitance change (% of initial value)	ESR (% of maximum initial value)
Life — +85 °C @ 5.5 Vdc, 2000 hours	≤ 30%	≤ 200%
Storage Life — -40 °C to +85 °C, 2000 hours	≤ 30%	≤ 200%

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

**Dimensions (mm)**

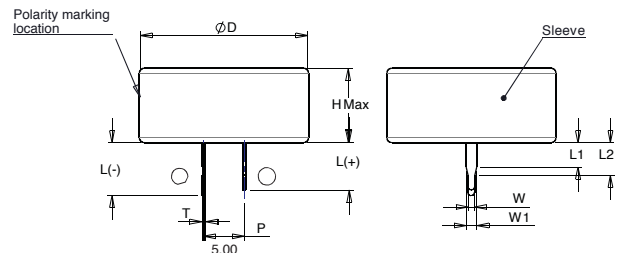
KW-5R5C104/224/334-R



Recommended PCB layout

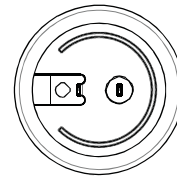
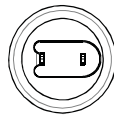
Ø.60 ± 0.05

KW-5R5C684/105-R



Recommended PCB layout

Ø.60 ± 0.05



Part number	ØD Max	H Max	L(-) ±0.2	L(+) ±0.2	P ±0.3	T ±0.1	L1 ±0.1	L2 ±0.1	W ±0.06	W1 ±0.06
KW-5R5C104-R	13.5	8.30	6.1	5.7	5.0	0.4	3.0	4.0	0.8	1.3
KW-5R5C104H-R			3.3	3.3			0.9	1.9		
KW-5R5C224-R			6.1	5.7			3.0	4.0		
KW-5R5C224H-R			3.3	3.3			0.9	1.9		
KW-5R5C334-R			6.1	5.7			3.0	4.0		
KW-5R5C334H-R			3.3	3.3			0.9	1.9		
KW-5R5C684-R	21.5	8.85	6.5	5.8	5.0	0.4	3.0	4.0	0.8	1.3
KW-5R5C684H-R			3.3	3.3			0.8	1.8		
KW-5R5C105-R			6.5	5.8			3.0	4.0		
KW-5R5C105H-R			3.3	3.3			0.8	1.8		

**Part numbering system**

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

\* If ordering standard lead length, omit "H" from part number.

**Packaging information**

Standard bulk packaging:

- KW-5R5C104/224/334-R—400 parts
- KW-5R5C684/105-R—500 parts

**Part marking**

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