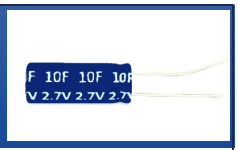
# Low ESR, 2.7V Radial Supercapacitor



**ADCR-E02R7S**

Request Samples | Check Inventory

**Various Sizes**
**RoHS/RoHS II Compliant**
**MSL Level = 1**

## Features

- Very Low internal resistance (ESR)
- High power density
- Minimal discharge rate, 72 hours @ discharge<20%
- Excellent cycle life
- Green, meet RoHS requirements

## Applications

- Power Assist Circuits
- Power Backup
- Micro Energy Storage
- IoT Energy Harvesting
- SSD applications
- DDR power back up
- RTC System power transfer to battery backup

## Electrical Specifications

| Part Number | Nominal Voltage ($U_R$) | Capacitance | Tol. | ESR (Max) | Nominal Current | Peak Current (Max) | Leakage Current | Stored Energy (Max) | Gravimetric Energy Density | Power Density | Volumetric Energy Density |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ADCR-E02R7S | DC(V) | Farads | ±% | mΩ | A | A | mA | mWh | Wh/kg | kW/kg | Wh/L |
| ADCR-E02R7SA504MB | 2.7V | 0.5 | 20 | 280 | 0.13 | 0.59 | 0.013 | 0.51 | 0.72 | 4.65 | 1.31 |
| ADCR-E02R7SA105MB | 2.7V | 1 | 20 | 240 | 0.26 | 1.09 | 0.016 | 1.01 | 1.58 | 5.93 | 2.59 |
| ADCR-E02R7SB105MB | 2.7V | 1 | 20 | 200 | 0.26 | 1.13 | 0.016 | 1.01 | 0.99 | 4.47 | 1.55 |
| ADCR-E02R7SA205MB | 2.7V | 2 | 20 | 140 | 0.51 | 2.11 | 0.018 | 2.03 | 0.96 | 3.10 | 2.02 |
| ADCR-E02R7SA335MB | 2.7V | 3.3 | 20 | 80 | 0.85 | 3.52 | 0.021 | 3.34 | 1.57 | 5.35 | 3.32 |
| ADCR-E02R7SA505MB | 2.7V | 5 | 20 | 60 | 1.27 | 5.19 | 0.030 | 5.06 | 1.43 | 4.29 | 4.19 |
| ADCR-E02R7SB505MB | 2.7V | 5 | 20 | 60 | 1.27 | 5.19 | 0.030 | 5.06 | 1.00 | 3.00 | 3.22 |
| ADCR-E02R7SA605MB | 2.7V | 6 | 20 | 55 | 1.52 | 6.09 | 0.036 | 6.08 | 1.20 | 3.27 | 3.87 |
| ADCR-E02R7SA705MB | 2.7V | 7 | 20 | 50 | 1.77 | 7.00 | 0.042 | 7.09 | 1.14 | 2.93 | 4.51 |
| ADCR-E02R7SA106MB | 2.7V | 10 | 20 | 45 | 2.48 | 9.31 | 0.050 | 10.13 | 1.00 | 2.00 | 5.16 |

**Operating Temperature:** -40°C to +70°C
**Storage Temperature:** -30°C to +50°C, RH<60%, Max. Humidity <85% RH
**Test Conditions:** +25°C

All parameters are measured according to the IEC 62391-1 standard.
Capacitance and ESR are measured with $I(mA)= 8(C*U_R)$

**Maximum Surge Voltage:** 2.85V ≤ 30 seconds
**Nominal Current:** 5 Seconds to discharge from $U_R$ to $1/2U_R$
**Peak Current (Max.):** 1 second to discharge to $U_R$ to $1/2U_R$
**Leakage Current:** Measured after 72h at $U_R$

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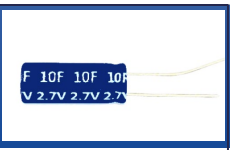
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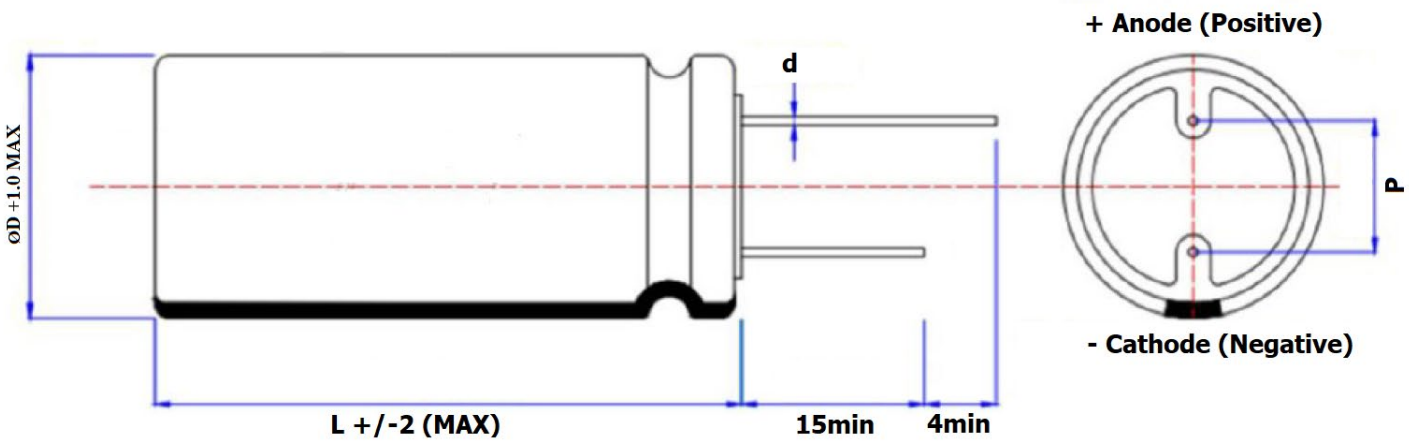


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**RoHS/RoHS II Compliant**
**MSL Level = 1**

## Mechanical Specifications




| Dimensions | D | L | P | d |
|---|---|---|---|---|
| ADCR-E02R7SA504MB | 6.3±1.0 | 12.5±1.5 | 2.5±0.5 | 0.5±0.05 |
| ADCR-E02R7SA105MB | 6.3±1.0 | 12.5±1.5 | 2.5±0.5 | 0.5±0.05 |
| ADCR-E02R7SB105MB | 8±1.0 | 13±1.5 | 3.5±0.5 | 0.6±0.05 |
| ADCR-E02R7SA205MB | 8±1.0 | 20±1.5 | 3.5±0.5 | 0.6±0.05 |
| ADCR-E02R7SA335MB | 8±1.0 | 20±1.5 | 3.5±0.5 | 0.6±0.05 |
| ADCR-E02R7SA505MB | 8±1.0 | 24±1.5 | 3.5±0.5 | 0.6±0.05 |
| ADCR-E02R7SB505MB | 10±1.0 | 20±1.5 | 5.0±0.5 | 0.6±0.05 |
| ADCR-E02R7SA605MB | 10±1.0 | 20±1.5 | 5.0±0.5 | 0.6±0.05 |
| ADCR-E02R7SA705MB | 10±1.0 | 20±1.5 | 5.0±0.5 | 0.6±0.05 |
| ADCR-E02R7SA106MB | 10±1.0 | 25±2.0 | 5.0±0.5 | 0.6±0.05 |

**Dimensions: mm**

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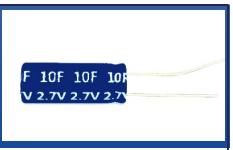
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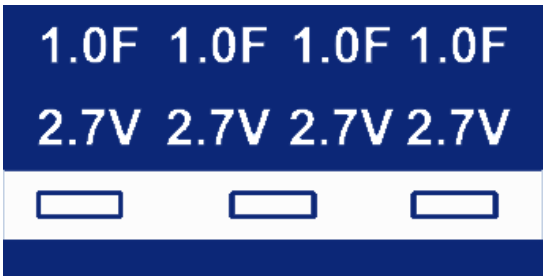
## Part Number Identification

ADCR – E [ ] [ ] [ ] [ ] [ ] [ ]

| VDC | Rating | Dimensions Options* | Capacitance* | Tolerance | Packaging |
|---|---|---|---|---|---|
| 02R7: 2.7V | S: Standard | A<br>B | Refer to Electrical Specification table<br>E.g., 505: 50 x$10^5$ = 5F | M: ±20% | B: Bulk |

*Only part numbers listed in the Electrical Specs table are available. For custom builds, please contact us.

## Part Marking




Example of the Markings of a 1.0F 2.7V capacitor

Capacitance (F)
Rated Voltage (V)
Polarity (negative bar on the sleeve to indicate the cathode)

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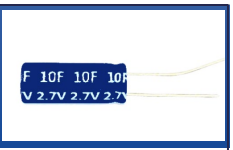
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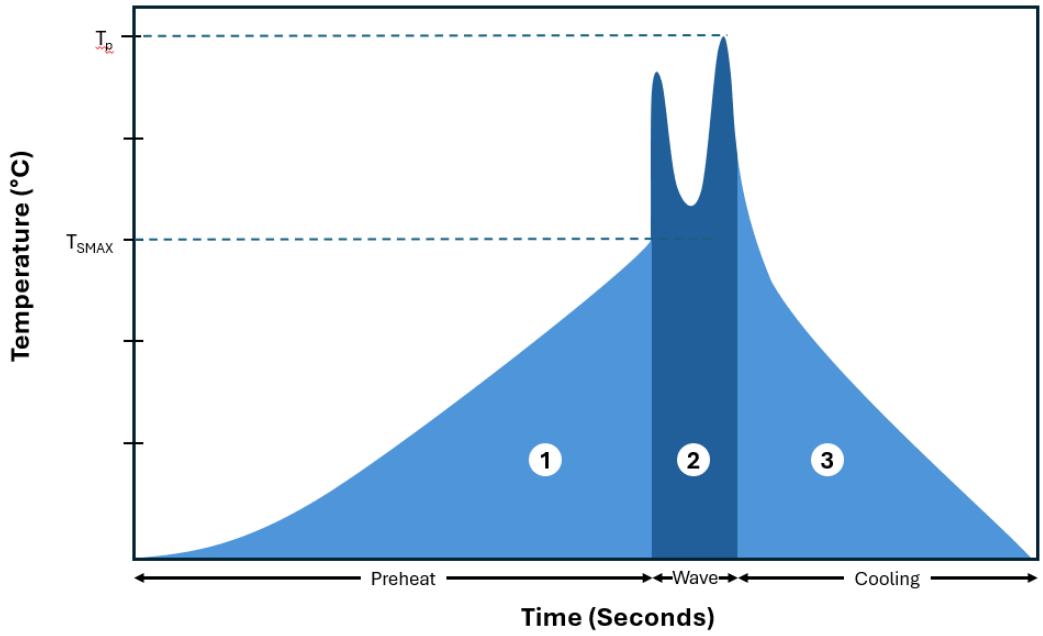


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**MSL Level = 1**

## Wave Soldering Profile




| Zone | Description | Temperature | Times |
|---|---|---|---|
| 1 | Preheat | $T_{SMIN}$ ~ $T_{SMAX}$<br>25°C ~ 150°C | 60 sec. MAX |
| | Preheat Rate | $T_{PREHEAT}$<br>+4ºC/Sec MAX | |
| 2 | Wave Temperature | $T_w$<br>245°C ~ 260°C | 10 sec. MAX<br>Dual wave |
| | Wave Peak Temperature | $T_P$<br>260°C | 5 sec. MAX/wave |
| 3 | Cooling Rate | $T_{COOLING}$ | -5ºC/Sec MAX |


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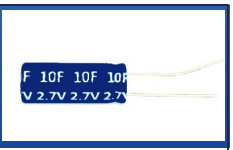
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## Packaging

The product is packaged in a carton containing multiple inner boxes, each containing several trays.

| Part Number | Quantity (PCS/Tray) | Quantity (PCS/Bundle) |
|---|---|---|
| ADCR-E02R7SA504MB | 180 | 1620 |
| ADCR-E02R7SA105MB | 180 | 1620 |
| ADCR-E02R7SB105MB | 160 | 960 |
| ADCR-E02R7SA205MB | 120 | 720 |
| ADCR-E02R7SA335MB | 120 | 720 |
| ADCR-E02R7SA505MB | 100 | 600 |
| ADCR-E02R7SB505MB | 120 | 600 |
| ADCR-E02R7SA605MB | 120 | 600 |
| ADCR-E02R7SA705MB | 120 | 600 |
| ADCR-E02R7SA106MB | 80 | 400 |

## Transport of Product

This product is not subject to US DOT or IATA regulations UN3499 since maximum stored energy is below 10Wh and can be considered Non-Hazardous Goods. Please refer to the Abracon | UN/IATA Transportation Guidelines for more information.

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf (COTS, which are designed, intended and validated for use in commercial, industrial and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.

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