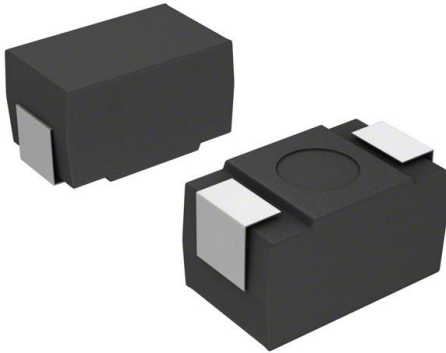


# ESRE331M0EXR Datasheet

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DiGi Electronics Part Number	ESRE331M0EXR-DG
Manufacturer	<a href="#">Cornell Dubilier Electronics (CDE)</a>
Manufacturer Product Number	ESRE331M0EXR
Description	CAP ALUM POLY 330UF 20% 2.5V SMD
Detailed Description	330 $\mu$ F 2.5 V Aluminum - Polymer Capacitors 2917 (7343 Metric) 10mOhm 1000 Hrs @ 105°C

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## Purchase and inquiry

Manufacturer Product Number:

ESRE331M0EXR

Series:

ESRE

Type:

Polymer

Tolerance:

±20%

ESR (Equivalent Series Resistance):

10mOhm

Operating Temperature:

-55°C ~ 105°C

Applications:

Bypass, Decoupling

Lead Spacing:

-

Height - Seated (Max):

0.161" (4.10mm)

Mounting Type:

Surface Mount

Manufacturer:

Cornell Dubilier Electronics (CDE)

Product Status:

Obsolete

Capacitance:

330 µF

Voltage - Rated:

2.5 V

Lifetime @ Temp.:

1000 Hrs @ 105°C

Ratings:

-

Ripple Current @ High Frequency:

3.5 A @ 100 kHz

Size / Dimension:

0.287" L x 0.169" W (7.30mm x 4.30mm)

Surface Mount Land Size:

0.287" L x 0.169" W (7.30mm x 4.30mm)

Package / Case:

2917 (7343 Metric)

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

3 (168 Hours)

HTSUS:

8532.22.0020

# Type ESRE Solid Polymer Aluminum SMT Capacitors

## Capacitance Tripled



Type ESRE capacitors triple the capacitance found in CDE's type ESRD capacitors.

Type ESRE polymer aluminum capacitors are low voltage polarized electrolytic capacitors, with extremely low equivalent series resistance at high frequency. This yields capacitors with very low high frequency impedance and higher ripple current capability than aluminum electrolytic or tantalum capacitors. One type ESRE capacitor can replace three or more tantalum or aluminum electrolytic capacitors. The solid electrolyte of the polymer aluminum capacitor gives it a long life that is ignition free.

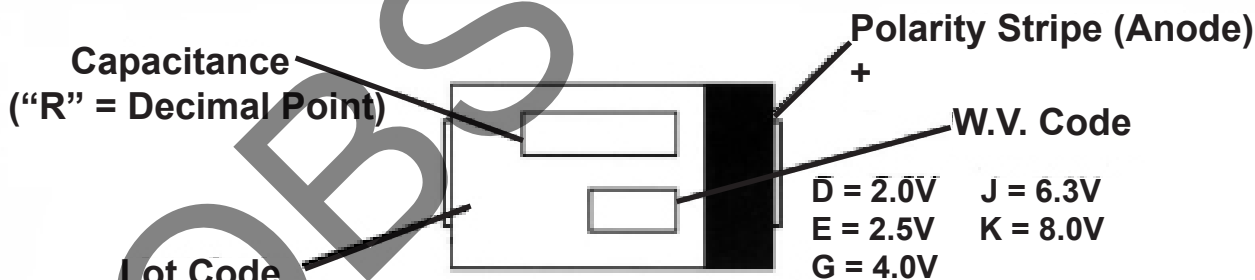
### Highlights

- Lowest ESR: <math><10\text{ m}\Omega</math> at 100 kHz
- 3.5 A ripple current at 100 kHz
- "D" case footprint: 7.3 (l) x 4.3 (w)
- Ignition Free

## Applications

- Motherboard By-Pass
- Switching Supply Input/Output Filters
- Power Supply Decoupling
- High Frequency Noise Reduction
- Laptop LCD Displays
- Automotive Digital Equipment
- Portable Electronic Equipment

## Markings



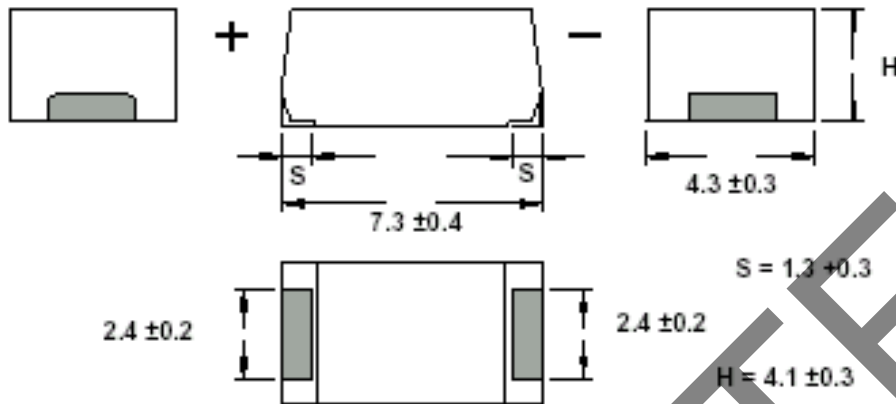
## Ordering Information

<b>ESRE</b>	<b>101</b>	<b>M</b>	<b>08</b>	<b>R</b>
CDE Type	Capacitance Code 101 = 100 $\mu$ F	Capacitance Tolerance M = $\pm$ 20%	WVDC Code 02 = 2.0 Vdc    06 = 6.3 Vdc 0E = 2.5 Vdc    08 = 8.0 Vdc 04 = 4.0 Vdc	Packaging Code R = Tape & Reel 2000 pcs/reel

# Type ESRE Solid Polymer Aluminum SMT Capacitors

Surface Mount, High Capacitance

## Outline Drawing



## Ratings

Capacitance ( $\mu\text{F}$ )	Catalog Part Number	Maximum E.S.R. 100 kHz/20 °C ( $\Omega$ )	Maximum Ripple Current 100 kHz/105 °C (Amps)
<b>2.0 Vdc</b>			
270	ESRE271M02R	0.012	3.3
330	ESRE331M02R	0.012	3.3
390	ESRE391M02XR	0.010	3.5
<b>2.5 Vdc</b>			
220	ESRE221M0ER	0.012	3.3
270	ESRE271M0ER	0.012	3.3
330	ESRE331M0EXR	0.010	3.5
<b>4.0 Vdc</b>			
180	ESRE181M04R	0.012	3.3
220	ESRE221M04XR	0.010	3.5
<b>6.3 Vdc</b>			
150	ESRE151M06R	0.012	3.3
180	ESRE181M06XR	0.010	3.5
<b>8.0 Vdc</b>			
100	ESRE101M08R	0.012	3.3

# Type ESRE Solid Polymer Aluminum SMT Capacitors

## Specifications

### Operating Temperature Range:

-55 °C to +105 °C, at 100% rated voltage

### Surge Voltage:

125% of the rated working Vdc

### Capacitance Range:

100 µF to 390 µF

### Capacitance Tolerance:

±20% at 120 Hz and +20 °C

### DC Leakage Current (DCL):

After a two minute application of the rated working voltage at +20 °C:

2V — 4V:  $I \leq 0.06CV$

6.3V — 8V:  $I \leq 0.04CV$  or 3 µA  
(whichever greater)

### Dissipation Factor (DF):

The ratio of the capacitor's equivalent series resistance to its reactance at 120Hz and +20 °C  
ESRE: DF is 0.10 Max.

### Resistance to Soldering Heat:

Heat the capacitors at 235 °C in an oven for 200 seconds. The capacitors will meet the following limits after stabilizing at 20 °C:

$\Delta C = \pm 10\%$  of the initial measured value

$DF \leq$  the initial specified value

$DCL \leq$  the initial specified value

### Vibration:

No abnormal change shall occur to capacitors that have been soldered (and attached) to a board when subjected to a vibration of 1.5 mm amplitude that is varied from 10 Hz to 2000 Hz in 20 min. cycles. The test duration is 2 hours for each right angle direction (total 6 hours). Capacitance is monitored during the last cycle of the test for stability.

### Moisture Resistance:

After 500 hours storage at +60 °C and 90% to 95% RH without load, the capacitor will meet the following limits:

$\Delta C = +70\%/-20\%$  of the initial measured value (2.0 Vdc, 2.5 Vdc),

+60%/-20% of the initial measured value (4.0 Vdc),

+50%/-20% of the initial measured value (6.3 Vdc),

+40%/-20% of the initial measured value (all other voltages)

$DF \leq$  two times the initial specified value

$DCL \leq$  the initial specified value

### Life Test:

Apply rated DC working voltage at 105 °C for 1000 hours, and then stabilize them to +20 °C. Capacitors will meet the following limits:

$\Delta C = \pm 10\%$  of the initial measured value

$DF \leq$  the initial specified value

$DCL \leq$  the initial specified value

### Shelf Life Test:

Shelf life is typically 42 months. Accelerated test: after 500 hours at 105 °C, capacitors will meet the following limits after stabilization at 20 °C:

$\Delta C = \pm 10\%$  of the initial measured value

$DF \leq$  the initial specified value

$DCL \leq$  the initial specified value

### Shear Test:

No damage shall be visible after subjecting a mounted capacitor to a side force of 5 N for 10 seconds.

For more information on this product please see the Solid Polymer Aluminum Capacitors Application Guide

# Type ESRE Solid Polymer Aluminum SMT Capacitors

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