

Type ESRE Solid Polymer Aluminum SMT Capacitors

Capacitance Tripled



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: <10 mΩ 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

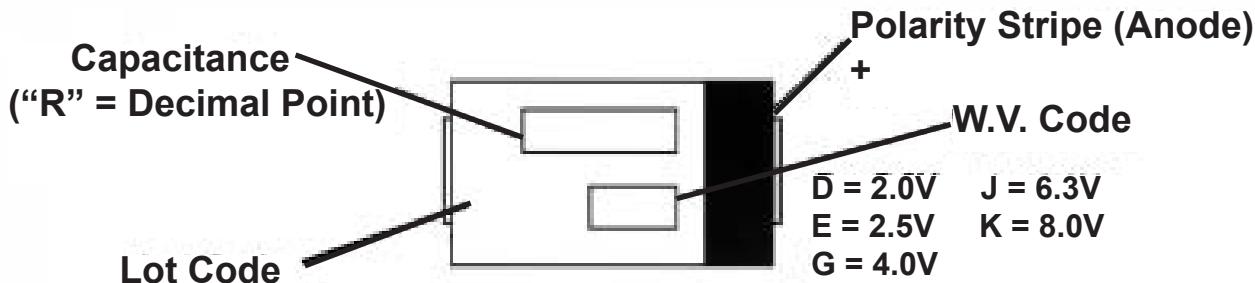
High Frequency Noise Reduction

Laptop LCD Displays

Automotive Digital Equipment

Portable Electronic Equipment

Markings



Ordering Information

ESRE

CDE Type

101

Capacitance Code

101 = 100 µF

M

Capacitance Tolerance

M = ±20%

08

WVDC Code

02 = 2.0 Vdc 06 = 6.3 Vdc
0E = 2.5 Vdc 08 = 8.0 Vdc
04 = 4.0 Vdc

R

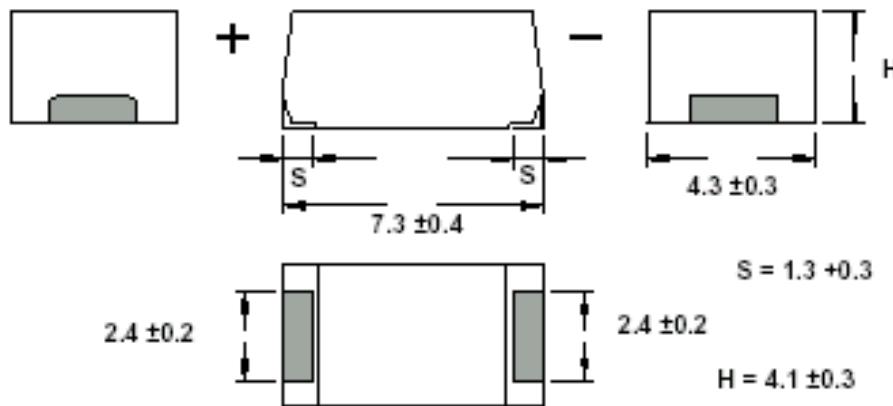
Packaging Code

R = Tape & Reel 2000 pcs/reel

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Surface Mount, High Capacitance

Outline Drawing



Ratings

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

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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 5 to 10 years. 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

ООО "ЛайфЭлектроникс"

"LifeElectronics" LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибуторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибуторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помочь разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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