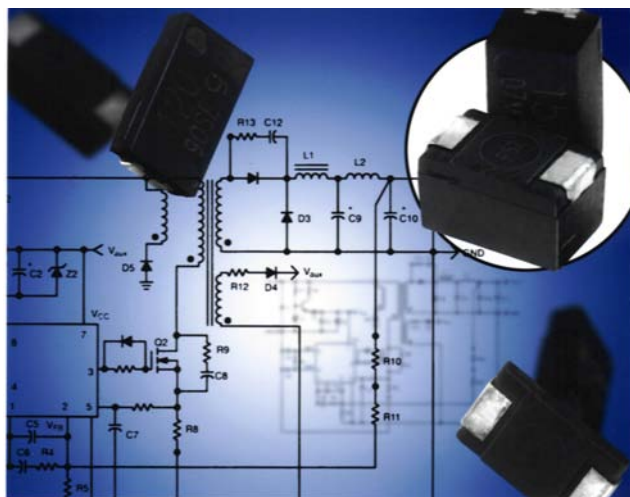


Type ESRH Solid Polymer Aluminum SMT Capacitors



Solid Polymer Aluminum capacitors are now available with a +125°C temperature rating. CDE's type ESRH capacitors are rated at +125°C for 1000 hours when operated at 3/4 of the 105°C rated voltage. Solid Polymer Aluminum electrolytic capacitors feature extremely low ESR which yields a capacitor with very low high frequency impedance and high ripple current capability. When low ESR is your requirement, one type ESRH capacitor can replace three or more tantalum or aluminum electrolytic capacitors. The solid electrolyte in a polymer aluminum capacitor results in a long (and ignition free) life, and the 7.3 x 4.3 footprint is compatible with "D" case solid tantalum capacitors.

Specifications

Operating Temperature Range:

-55 °C to +105 °C at rated voltage
(+125 °C at .75 x rated voltage)

Capacitance Tolerance:

±20% at 120 Hz and +20 °C

Dissipation Factor (DF):

≤0.10 at 120 Hz and +20 °C

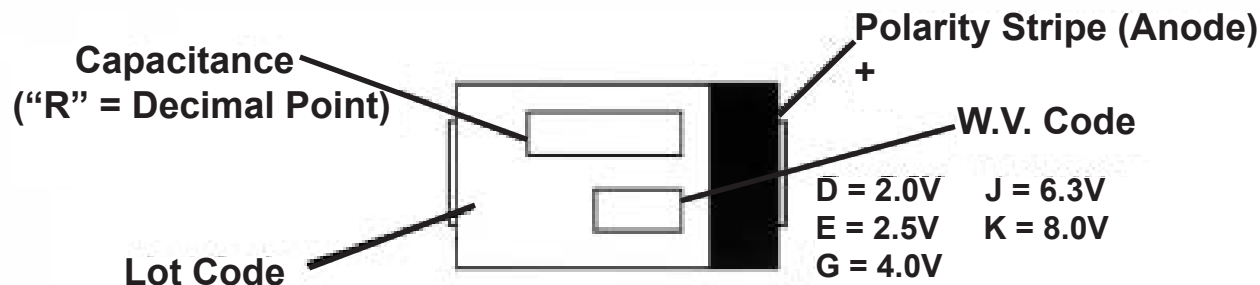
Surge Voltage:

1.25 x rated voltage

DC Leakage Current (after 2 minutes):

$I \leq .1 \text{ CV}$

Markings



Ordering Information

ESRH

CDE Type

101

Capacitance Code

680 = 68 μF
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

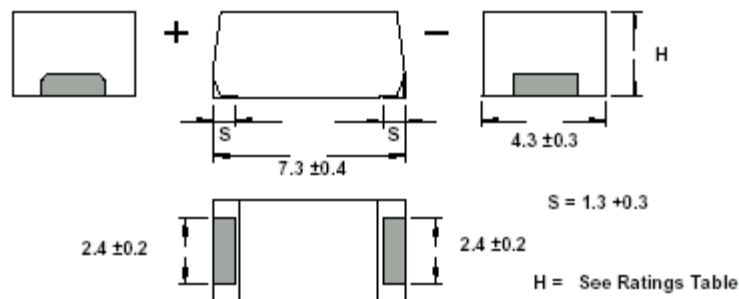
Packaging Code

R = Tape & Reel 2000 pcs/reel

Type ESRH Solid Polymer Aluminum SMT Capacitors

Low E.S.R. and High Temperature

Outline Drawing



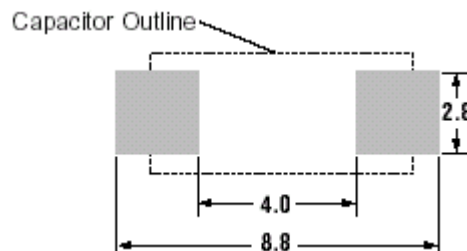
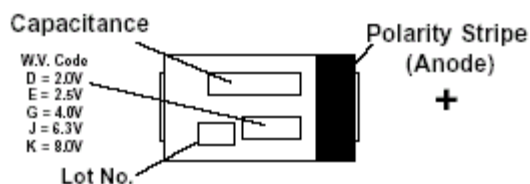
Ratings

Capacitance (μF)	Rated Voltage WVDC	Catalog Part Number Tape* and Reel (2000 pcs/reel)	Maximum E.S.R. 100 kHz/20 °C (Ω)	Ripple Current at 100 kHz +20 °C to +125 °C (A_{rms})	H ± 0.2 (mm)
180	2.0	ESRH181M02R	0.015	2.5	2.8
150	2.5	ESRH151M0ER	0.015	2.5	2.8
120	4.0	ESRH121M04R	0.015	2.5	2.8
100	6.3	ESRH101M06R	0.015	2.5	2.8
68	8.0	ESRH680M08R	0.015	2.5	2.8
270	2.0	ESRH271M02R	0.012	3.0	4.1
220	2.5	ESRH221M0ER	0.012	3.0	4.1
180	4.0	ESRH181M04R	0.012	3.0	4.1
150	6.3	ESRH151M06R	0.012	3.0	4.1
100	8.0	ESRH101M08R	0.012	3.0	4.1

*12mm wide tape — 13" diameter reel

Markings

Land Pattern



Type ESRH Solid Polymer Aluminum SMT Capacitors

Specifications (continued)

Life Test:

Apply rated DC working voltage at 105 °C (or 0.75 x WVDC at 125 °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 & DCL \leq the initial specified value

Shelf Life Test:

Shelf life is typically 5 to 10 years. Accelerated test: after 500 hours at 125 °C, capacitors will meet the following limits after stabilization at 20 °C:

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

DF & DCL \leq the initial specified value

Moisture Resistance:

After 500 hours storage at +60 °C and 90% R.H. without load, the capacitor will meet the following limits:

$\Delta C = +70\%/-20\%$ of the initial measured value (2.0 & 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 (8.0 Vdc).

DF \leq two times the initial specified value

DCL \leq the initial specified value

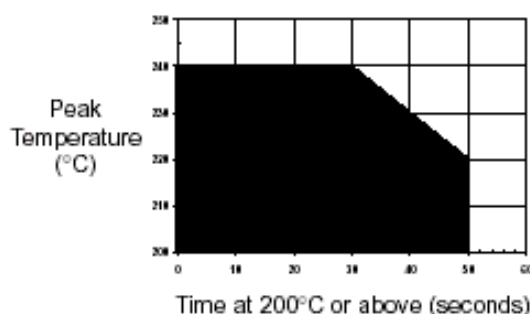
Resistance to Soldering Heat:

Capacitors withstand being heated in an oven at 235 °C for 200 seconds.

Soldering:

Solid Polymer Aluminum capacitors are designed for reflow soldering.

Preheat the capacitors at 160 °C for a maximum of 120 seconds. The time at or above 200 °C on the surface of the capacitor should be per the following chart:



(For more information on this product see the Solid Polymer Aluminum Application Guide)

Typical Impedance & ESR

