

# EAL - Extreme Application Long Life, Power Electrolytic Capacitors



- High Energy Storage, Screw Terminals
- 105°C Operation, Long Life
- Low ESR, Low Leakage
- High Power, Low Energy Density
- High Ripple Current
- Suitable for Use in Power Applications

## General Specifications

**Operating Temperature:**  
-40°C to +105°C

**Voltage Range:**  
35 WVDC to 450 WVDC

**Capacitance Range:**  
2700 µF to 220,000 µF

**Capacitance Tolerance:**  
-10% +20%; -10% +50%;  
-10% +75%; -20% + 20%;

### QA Stability Test:

Apply WVDC for 2000 hours at 105°C

- Capacitance change ≤ 15% from initial limits
- DC leakage current meets initial limits
- ESR ≤ 175% of initial measured value

The maximum ripple current at 85°C and 120Hz for EAL capacitors is shown in the Standard Rating Table. Maximum ripple current may be adjusted by the multipliers in the following tables:

Rated WVDC	Ripple Multipliers				
	120Hz	400Hz	1000Hz	2500Hz	10KHz
10 to 75	1.0	1.050	1.085	1.135	1.150
76 to 250	1.0	1.075	1.125	1.155	1.210
>250	1.0	1.080	1.130	1.175	1.230

Ambient Temperature	Ripple Multipliers
+85°C	1.00
+65°C	1.42
+55°C	1.58
+45°C	1.72
+35°C	1.88
+25°C	2.00

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# Types EAP, EAW, EAN, EAF, EASB, EAL Part Number Information

DuraCap Catalog Number **EAP** **184** **U** **010** **X3L** **(3** **P** **H)** **[-S]**

**TYPE:** \_\_\_\_\_  
Identifies the basic type  
EAP, EAW, EAN, EAF, EASB, EAL

**CAPACITANCE:** \_\_\_\_\_  
Expressed in microfarads  
The first two digits are significant figures  
The third digit is the number of zeros

**CAPACITANCE TOLERANCE:** \_\_\_\_\_  
**F** = -0 / +30%    **R** = -15 / +15%    **U** = -10 / +75%  
**G** = -0 / +50%    **S** = -10 / +30%    **X** = -10 / +20%  
**M** = -20 / +20%    **T** = -10 / +50%    **Z** = -10 / +10%

**DC VOLTAGE RATING:** \_\_\_\_\_  
Zeros are used to precede the voltage rating where necessary to complete the three digit block  
The letter 'R' indicates a decimal point

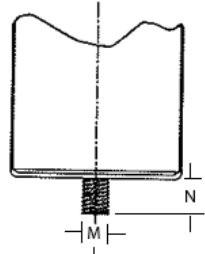
**CASE CODE:** \_\_\_\_\_  
See chart on next page

**INSULATING SLEEVE:** \_\_\_\_\_  
 0 = No sleeve  
 1 = Mylar (Polyester)  
 3 = Single Layer PVC - .008" thickness  
 7 = Double Layer .008" PVC (.016" total thickness)  
 8 = Blue PVC - .012" thickness

**POLARITY:** \_\_\_\_\_  
**P** = Polar    **S** = Semi-Polar    **N** = Non-Polar

**TERMINAL:** \_\_\_\_\_  
**H** = High Post  
**L** = Low Post  
**V** = Printed Circuit Mount  
**D** = Low Post, Low Resistance Screw Mount (1/4 - 28 Thread)  
**F** = High Post Metric Thread  
**G** = Low Post Metric Thread  
**N** = High Post, Low Resistance Screw Mount (1/4 - 28 Thread)  
**S** = Stud Mount (see chart below)

CAN DIAMETER	M THREAD	N INCH	N MM
1.375	M8	.472	12
1.750	M8	.472	12
2.000	M12	.630	16
2.500	M12	.630	16
3.000	M12	.630	16
3.500	M12	.630	16

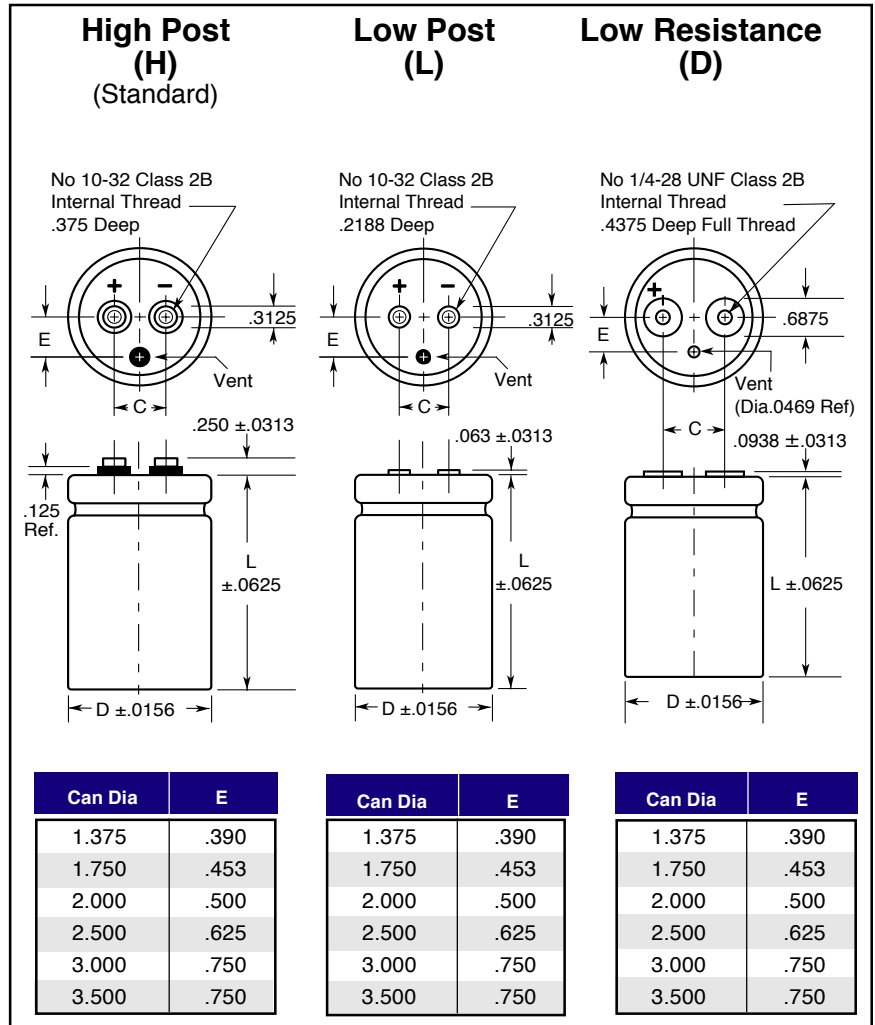


STUDED CAN  
CROSS SECTION DETAIL

# Type EAL Dimensions and Size Charts

## Case Code Chart

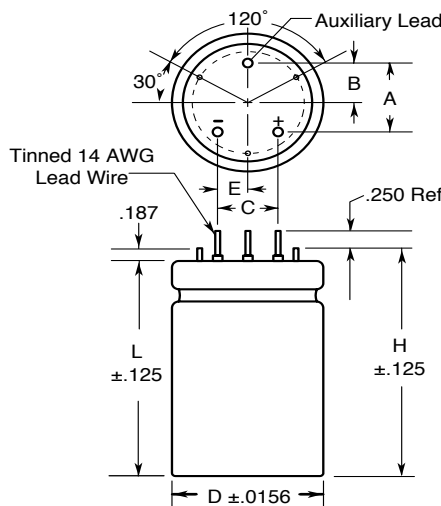
Case Code	Uninsulated Can						Mounting Bracket
	Inches		mm		Inches	mm	
	D	L	D	L	C	C	
R2C	1.375	2.125	35	54	.500	12.7	VR3
R2L	1.375	2.625	35	67	.500	12.7	VR3
R3C	1.375	3.125	35	79.4	.500	12.7	VR3
R3L	1.375	3.625	35	92	.500	12.7	VR3
R4C	1.375	4.125	35	105	.500	12.7	VR3
R4L	1.375	4.625	35	117.5	.500	12.7	VR3
R5C	1.375	5.125	35	130	.500	12.7	VR3
R5L	1.375	5.625	35	143	.500	12.7	VR3
U2C	1.750	2.125	44.5	54	.750	19	VR6
U2L	1.750	2.625	44.5	67	.750	19	VR6
U3C	1.750	3.125	44.5	79.4	.750	19	VR6
U3L	1.750	3.625	44.5	92	.750	19	VR6
U4C	1.750	4.125	44.5	105	.750	19	VR6
U4L	1.750	4.625	44.5	117.5	.750	19	VR6
U5C	1.750	5.125	44.5	130	.750	19	VR6
U5L	1.750	5.625	44.5	143	.750	19	VR6
V2C	2.000	2.125	50.8	54	.875	22.2	VR8
V2L	2.000	2.625	50.8	67	.875	22.2	VR8
V3C	2.000	3.125	50.8	79.4	.875	22.2	VR8
V3L	2.000	3.625	50.8	92	.875	22.2	VR8
V4C	2.000	4.125	50.8	105	.875	22.2	VR8
V4L	2.000	4.625	50.8	117.5	.875	22.2	VR8
V5C	2.000	5.125	50.8	130	.875	22.2	VR8
V5L	2.000	5.625	50.8	143	.875	22.2	VR8
W3C	2.500	3.125	63.5	79.4	1.125	28.6	VR10
W3L	2.500	3.625	63.5	92	1.125	28.6	VR10
W4C	2.500	4.125	63.5	105	1.125	28.6	VR10
W4L	2.500	4.625	63.5	117.5	1.125	28.6	VR10
W5C	2.500	5.125	63.5	130	1.125	28.6	VR10
W5L	2.500	5.625	63.5	143	1.125	28.6	VR10
X3L	3.000	3.625	76.2	92	1.250	31.7	VR12
X4C	3.000	4.125	76.2	105	1.250	31.7	VR12
X4L	3.000	4.625	76.2	117.5	1.250	31.7	VR12
X5C	3.000	5.125	76.2	130	1.250	31.7	VR12
X5L	3.000	5.625	76.2	143	1.250	31.7	VR12
X5R	3.000	5.875	76.2	149	1.250	31.7	VR12
X6L	3.000	6.625	76.2	168	1.250	31.7	VR12
X7L	3.000	7.625	76.2	194	1.250	31.7	VR12
X8L	3.000	8.625	76.2	219	1.250	31.7	VR12
Y3L	3.500	3.625	88.9	92	1.25	31.7	N/A
Y4C	3.500	4.125	88.9	105	1.25	31.7	N/A
Y4L	3.500	4.625	88.9	117.5	1.25	31.7	N/A
Y5C	3.500	5.125	88.9	130	1.25	31.7	N/A
Y5L	3.500	5.625	88.9	143	1.25	31.7	N/A
Y5R	3.500	5.875	88.9	149	1.25	31.7	N/A
Y6L	3.500	6.625	88.9	168	1.25	31.7	N/A
Y7L	3.500	7.625	88.9	194	1.25	31.7	N/A
Y8L	3.500	8.625	88.9	219	1.25	31.7	N/A



Add .015 inches to diameter and .045 inches to length for PVC insulating sleeve.

## PC Mounting Board Dimensions

Case Code	Uninsulated Can						
	Inches						
	D	L	H	A	B	C	E
R1N	1.375	1.750	1.937	.550	.375	.500	.250
R2C	1.375	2.125	2.312	.550	.375	.500	.250
R2L	1.375	2.625	2.812	.550	.375	.500	.250
R3C	1.375	3.125	3.312	.550	.375	.500	.250
R3L	1.375	3.625	3.812	.550	.375	.500	.250
R4C	1.375	4.125	4.312	.550	.375	.500	.250
R4L	1.375	4.625	4.812	.550	.375	.500	.250
R5C	1.375	5.125	5.312	.550	.375	.500	.250
R5L	1.375	5.625	5.812	.550	.375	.500	.250
V2C	2.000	2.125	2.312	1.000	.575	.800	.400
V2L	2.000	2.625	2.812	1.000	.575	.800	.400
V3C	2.000	3.125	3.312	1.000	.575	.800	.400
V3L	2.000	3.625	3.812	1.000	.575	.800	.400
V4C	2.000	4.125	4.312	1.000	.575	.800	.400
V4L	2.000	4.625	4.812	1.000	.575	.800	.400
V5C	2.000	5.125	5.312	1.000	.575	.800	.400
V5L	2.000	5.625	5.812	1.000	.575	.800	.400



Capacitance ( $\mu$ F)	Max ESR (Ohms) @120Hz	Max Ripple Amps RMS @120Hz +85°C	Diameter	Length	Part Description
<b>35 WVDC; 50 VDC Surge</b>					
220000	0.007	22.5	3.000	4.125	EAL224U035X4C3PH
<b>63 WVDC; 85 VDC Surge</b>					
22000	0.012	9.5	1.375	4.625	EAL223U063R4L3PH
<b>75 WVDC; 100 VDC Surge</b>					
29000	0.010	21.4	3.000	5.625	EAL293U075X5L3PH
37000	0.009	18.5	2.000	5.625	EAL373U075V5L3PH
56000	0.007	26.9	2.500	5.625	EAL563U075W5L3PD
<b>100 WVDC; 135 VDC Surge</b>					
2700	0.049	6.2	1.375	2.125	EAL272X100R2C3PH
18000	0.018	12.4	2.000	5.125	EAL183X100V5C3PH
<b>200 WVDC; 250 VDC Surge</b>					
3300	0.032	7.6	2.000	3.125	EAL332X200V3C3PF-S
<b>300 WVDC; 350 VDC Surge</b>					
8000	0.008	23.4	3.000	5.625	EAL802T300X5L3PN
<b>350 WVDC; 400 VDC Surge</b>					
3300	0.040	11.0	2.500	4.625	EAL332M350W4L3PH
4700	0.017	16.5	3.000	5.625	EAL472X350X5L7PM-S
4700	0.028	12.0	2.500	6.125	EAL472X350W6C3PH
<b>400 WVDC; 475 VDC Surge</b>					
4100	0.026	10.3	3.000	5.125	EAL412M400X5C3PF

Capacitance (µF)	Max ESR (Ohms) @120Hz	Max Ripple Amps RMS @120Hz +85°C	Diameter	Length	Part Description
<b>450 WVDC; 525 VDC Surge</b>					
4700	0.023	13.3	3.000	6.125	EAL472X450X6C3PH
4700	0.031	15.0	3.000	8.625	EAL472X450X8L3PM-S
5500	0.010	18.6	3.000	6.625	EAL552M450X6L3PN-S
6000	0.022	18.7	3.000	8.625	EAL602X450X8L3PM
6800	0.020	18.7	3.000	8.625	EAL682X450X8L3PH