

⊕ Aluminum and EDLC Capacitors

Highest Reliability for Demanding Applications at 105 °C

299 PHL-4TSI



Enhanced High Temperature Up to 150 °C, High Ripple Current, AEC-Q200 Qualified

160 RLA



Up to 8000 h Useful Life at 125 °C, **Low Impedance**

120 ATC



Compact Solution for **Energy Storage Applications**

500 PGP-ST



Electrical Double Layer Capacitor With **Long Lifetime** Under High Humidity Operation

225 EDLC-R



Hybrid Polymer Technology, **Ultra Low ESR** at High Temperatures Up to 125 °C

183 CPHT



Up to 500 V at 105 °C and **3000 h Lifetime**

259 PHM-SI



Operates in **Harsh Environments** Up to 125 °C, AEC-Q200 Qualified



146 CTI / 246 CTI-V










ALUMINUM AND EDLC CAPACITORS

Focus Products

		Energy Storage							
		Product Family	Series	Voltage	Capacitance	Temperature	Useful Life ⁽¹⁾	Case Size	Additional Features
Hybrid Energy Storage	Vishay BCcomponents		196 HVC	1.4 V to 8.4 V	4 F to 90 F	85 °C	Up to 2000 h	7 mm x 2.5 mm to 35 mm x 20 mm	<ul style="list-style-type: none"> Highest energy density RoHS-compliant Different mounting styles available (STH SMF LTC)
			220 EDLC	2.7 V	8 F to 60 F	85 °C	Up to 1000 h	12.5 mm x 20 mm to 18 mm x 40 mm	<ul style="list-style-type: none"> High power and energy density RoHS-compliant STH mounting
225 EDLC-R	2.7 V		20 F to 60 F	85 °C	Up to 2000 h	16 mm x 20 mm to 18 mm x 40 mm	<ul style="list-style-type: none"> High power and energy density High humidity operation RoHS-compliant STH mounting 		
230 EDLC-HV	3.0 V		20 F to 60 F	85 °C	Up to 2000 h	16 mm x 20 mm to 18 mm x 40 mm	<ul style="list-style-type: none"> High power and energy density High voltage RoHS-compliant STH mounting 		

		SMD Design							
		Product Family	Series	Voltage	Capacitance	Temperature	Useful Life ⁽¹⁾	Case Size	Additional Features
Standard	Vishay BCcomponents		153 CRV	6.3 V to 100 V	0.47 µF to 1 mF	105 °C	Up to 3000 h	4 mm x 5.3 mm to 10 mm x 14 mm	<ul style="list-style-type: none"> RoHS-compliant
Low Impedance			150 CRZ ⁽²⁾	6.3 V to 100 V	4.7 µF to 10 mF	105 °C	Up to 10 000 h	8 mm x 10 mm to 18 mm x 21 mm	<ul style="list-style-type: none"> RoHS-compliant AEC-Q200 qualified JEDEC® J-STD-020
			146 CTI ⁽²⁾	16 V to 100 V	10 µF to 4.7 mF	125 °C	Up to 6000 h	8 mm x 10 mm to 18 mm x 21 mm	<ul style="list-style-type: none"> RoHS-compliant AEC-Q200 qualified JEDEC® J-STD-020 High temperature
			160 CLA ⁽²⁾	16 V to 63 V	47 µF to 3.3 mF	150 °C	Up to 2000 h	12.5 mm x 13 mm to 18 mm x 21 mm	<ul style="list-style-type: none"> RoHS-compliant AEC-Q200 qualified JEDEC® J-STD-020 Enhanced high temperature
Ultra Low Impedance			183 CPH T	25 V to 80 V	10 µF to 330 µF	125 °C	4000 h	5 mm x 5.8 mm to 10 mm x 10.5 mm	<ul style="list-style-type: none"> Hybrid polymer technology RoHS-compliant AEC-Q200 qualified on request
			184 CPNS	2.5 V to 100 V	4.7 µF to 3.3 mF	105 °C	2000 h	4 mm x 5.5 mm to 10 mm x 12.4 mm	<ul style="list-style-type: none"> Polymer technology RoHS-compliant
	186 CPNT		6.3 V to 50 V	10 µF to 1.5 mF	125 °C	2000 h	6.3 mm x 5.8 mm to 10 mm x 12.4 mm	<ul style="list-style-type: none"> Polymer technology RoHS-compliant 	

		Axial Design							
		Product Family	Series	Voltage	Capacitance	Temperature	Useful Life ⁽¹⁾	Case Size	Additional Features
Standard	Vishay BCcomponents		021 ASM	6.3 V to 100 V	1 µF to 15 mF	85 °C	Up to 8000 h	4.5 mm x 10 mm to 21 mm x 38 mm	<ul style="list-style-type: none"> RoHS-compliant
			138 AML	6.3 V to 100 V	1.0 µF to 15 mF	105 °C	Up to 10 000 h	6.3 mm x 12.7 mm to 21 mm x 38 mm	<ul style="list-style-type: none"> RoHS-compliant
			118 AHT	6.3 V to 200 V	2.2 µF to 10 mF	125 °C	Up to 8000 h	6.5 mm x 18 mm to 21 mm x 38 mm	<ul style="list-style-type: none"> RoHS-compliant High temperature
Low Impedance			120 ATC	16 V to 100 V	47 µF to 68 mF	125 °C	Up to 8000 h	10 mm x 30 mm to 21 mm x 38 mm	<ul style="list-style-type: none"> RoHS-compliant High temperature AEC-Q200 qualified

Notes:




⁽¹⁾ At upper category temperature



⁽²⁾ Products with high vibration capability (vibration-proofed up to 50 g) available in separate series (250 CRZ-V, 246 CTI-V, 260 CLA-V, 250 RMI-V, and 246 RTI-V)




ALUMINUM AND EDLC CAPACITORS

Focus Products

Radial Design								
	Product Family	Series	Voltage	Capacitance	Temperature	Useful Life ⁽¹⁾	Case Size	Additional Features
Standard	Vishay BCcomponents		142 RHS	10 V to 450 V	1 μ F to 22 mF	105 °C	2500 h	5 mm x 11 mm to 18 mm x 40 mm • RoHS-compliant
Low Impedance			150 RMI ⁽²⁾	10 V to 100 V	100 μ F to 6.8 mF	105 °C	Up to 10 000 h	8 mm x 12 mm to 18 mm x 31 mm • RoHS-compliant • AEC-Q200 qualified
		146 RTI ⁽²⁾	16 V to 63 V	68 μ F to 6.8 mF	125 °C	Up to 6000 h	10 mm x 12 mm to 18 mm x 35 mm • RoHS-compliant • AEC-Q200 qualified • High temperature	
		160 RLA	16 V to 50 V	33 μ F to 3.3 mF	150 °C	Up to 2000 h	10 mm x 12 mm to 18 mm x 35 mm • RoHS-compliant • AEC-Q200 qualified • Enhanced high temperature	
High Voltage		152 RMH	200 V to 400 V	1.5 μ F to 220 μ F	105 °C	Up to 4000 h	10 mm x 12 mm to 18 mm x 35 mm • RoHS-compliant • AEC-Q200 qualified	

Snap-In Design								
	Product Family	Series	Voltage	Capacitance	Temperature	Useful Life ⁽¹⁾	Case Size	Additional Features
Low Voltage	Vishay BCcomponents		256 PMG-SI	16 V to 100 V	820 μ F to 47 mF	105 °C	Up to 5000 h	20 mm x 25 mm to 35 mm x 45 mm • RoHS-compliant
High Voltage			159 PUL-SI	200 V to 500 V	56 μ F to 1.8 mF	105 °C	5000 h	22 mm x 25 mm to 35 mm x 60 mm • RoHS-compliant
		096 PLL-4TSI	350 V to 500 V	390 μ F to 2.7 mF	85 °C	5000 h	35 mm x 50 mm to 45 mm x 100 mm • RoHS-compliant	
		299 PHL-4TSI	400 V to 450 V	470 μ F to 2.2 mF	105 °C	5000 h	35 mm x 50 mm to 45 mm x 100 mm • RoHS-compliant	

Screw-Terminal Design								
	Product Family	Series	Voltage	Capacitance	Temperature	Useful Life ⁽¹⁾	Case Size	Additional Features
Low Voltage	Vishay BCcomponents		101 PHR-ST	25 V to 100 V	2200 μ F to 1 F	85 °C	\geq 15 000 h	35 mm x 60 mm to 90 mm x 220 mm • RoHS-compliant
High Voltage		500 PGP-ST	200 V to 450 V	680 μ F to 22 mF	85 °C	5000 h	50 mm x 80 mm to 90 mm x 220 mm • RoHS-compliant	
		102 PHR-ST	200 V to 450 V	220 μ F to 33 mF	85 °C	\geq 10 000 h	35 mm x 60 mm to 90 mm x 220 mm • RoHS-compliant	
		104 PHL-ST	200 V to 450 V	150 μ F to 33 mF	105 °C	\geq 5000 h	35 mm x 60 mm to 90 mm x 220 mm • RoHS-compliant	

Notes:
⁽¹⁾ At upper category temperature

⁽²⁾ Products with high vibration capability (vibration-proofed up to 50 g) available in separate series (250 CRZ-V, 246 CTI-V, 260 CLA-V, 250 RMI-V, and 246 RTI-V)



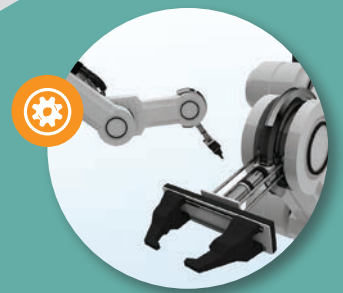
Aluminum and EDLC Capacitors Offer **Highest Reliability at High Temperatures** for **Long Lifetimes**

Advantages of Vishay Aluminum and Energy Storage Capacitors

- High temperature ranges
- Long lifetimes
- High vibration resistance
- Automotive qualification

For the Following Applications

- DC/DC converters
- Power supplies
- LED drivers
- Inverters
- Energy harvesting
- UPS and backup systems
- Energy recovery
- Smart meters



More than 50 years of experience in various industrial power applications – we have solutions for all your requirements



Aluminum electrolytic capacitors can be used close to engines for efficient motor management

Useful Links

- Aluminum Electrolytic Capacitors Parametric Search and Gateway Page
www.vishay.com/capacitors/aluminum
- Engineering Solutions: Aluminum Electrolytic Capacitors in Power Supplies
www.vishay.com/doc?49663
- Power Management Solution: CV Pulse Charging of Hybrid Capacitors
www.vishay.com/doc?28427
- Latest News
www.vishay.com/capacitors/aluminum/tab/latest-news/



**AEC-Q200
QUALIFIED**



**RoHS
COMPLIANT**

**HALOGEN
FREE**