

### AL SERIES ■ HIGH TEMPERATURE TYPE 145°C

#### KEY FEATURES



- **HYBRID CONDUCTIVE POLYMER • THT type**
- Endurance: 145°C ■ 2 000 hours
- Low ESR and high ripple current  
Superior electrical stability over application lifetime
- AEC-Q200 version available

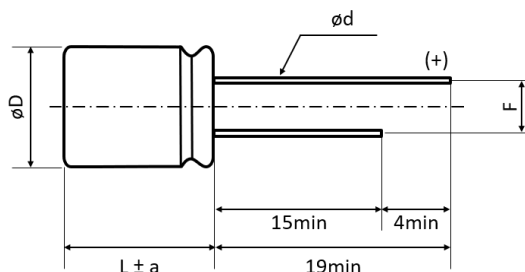


#### SPECIFICATIONS

Items		Performance Characteristics
Operating Temperature Range		-55 ~ +145°C
Rated Voltage Range	$V_R$	16 ~ 80V DC
Surge Voltage	$V_S$	( $V_R \leq 100V$ ): $V_S = 1.25 \cdot V_R$
Capacitance Range	$C_R$	8.2 ~ 560 $\mu$ F
Cap. Tolerance	$\Delta C$	$\pm 20\%$ (120Hz ■ 20°C)
Leakage Current (20°C ■ $V_R$ applied)	$I_{LEAK}$	Not to exceed the values shown in standard ratings After 2 minutes
Dissipation Factor % (20°C ■ 120Hz)	$\tan \delta$	Not to exceed the values shown in standard ratings
Equivalent Series Resistance (20°C ■ 100kHz)	ESR	Not to exceed the values shown in standard ratings

Lifetime Test		
Endurance 145°C ( $V_R$ & $I_R$ applied)	Test	<b>2 000 hours</b>
	$\Delta C/C_R$	Within $\pm 30\%$ of the initial value
	$\tan \delta$	Less than 200% of the specified value
	ESR	Less than 200% of the specified value
	$I_{Leak}$	Less than the specified value

#### DIMENSIONS ■ All dimensions in mm



$\phi D$	L	$\phi D \pm 0.5$	a	F $\pm 0.5$	$\phi d \pm 0.05$
8	9	8	1.5	3.5	0.6
8	11.5	8	1.5	3.5	0.6
10	10	10	1.5	5	0.6
10	12.5	10	1.5	5	0.8

## STANDARD RATINGS

V <sub>R</sub> (V)	C <sub>R</sub> (μF)	ø D (mm)	L (mm)	I <sub>LEAK</sub> (μA, 2min)	tanδ +20°C • 120Hz (%)	Max. ESR +20°C • 100kHz (mΩ)	I <sub>R</sub> • Max. Ripple Current +145°C • 100kHz (mA rms)	CapXon Part Number
16	270	8	9	43.2	16	25	780	AL271M016F090PTD <input type="checkbox"/>
	330	8	11.5	52.8	16	23	950	AL331M016F115PTD <input type="checkbox"/>
	470	10	10	75.2	16	20	1050	AL471M016G100PTA <input type="checkbox"/>
	560	10	12.5	89.6	16	16	1220	AL561M016G125PTA <input type="checkbox"/>
25	150	8	9	37.5	16	27	750	AL151M025F090PTD <input type="checkbox"/>
	220	8	11.5	55	16	25	900	AL221M025F115PTD <input type="checkbox"/>
	270	10	10	67.5	16	22	1000	AL271M025G100PTA <input type="checkbox"/>
	330	10	12.5	82.5	16	16	1150	AL331M025G125PTA <input type="checkbox"/>
35	100	8	9	16.5	16	30	700	AL101M035F090PTD <input type="checkbox"/>
	150	8	11.5	35	16	27	850	AL151M035F115PTD <input type="checkbox"/>
	150	10	10	52.5	16	23	950	AL151M035G100PTA <input type="checkbox"/>
	220	10	12.5	77	16	18	1100	AL221M035G125PTA <input type="checkbox"/>
40	56	8	9	22.4	16	30	660	AL560M040F090PTD <input type="checkbox"/>
	82	8	11.5	32.8	16	27	800	AL820M040F115PTD <input type="checkbox"/>
	100	10	10	40	16	25	920	AL101M040G100PTA <input type="checkbox"/>
	120	10	10	48	16	23	920	AL121M040G100PTA <input type="checkbox"/>
	180	10	12.5	48	16	20	1040	AL181M040G125PTA <input type="checkbox"/>
50	33	8	9	16.5	16	35	620	AL330M050F090PTD <input type="checkbox"/>
	47	8	11.5	23.5	16	28	730	AL570M050F115PTD <input type="checkbox"/>
	56	10	10	28	16	28	880	AL560M050G100PTA <input type="checkbox"/>
	82	10	12.5	41	16	25	1040	AL820M050G125PTA <input type="checkbox"/>
63	22	8	9	13.9	16	40	600	AL220M063F090PTD <input type="checkbox"/>
	27	8	11.5	17	16	35	700	AL270M063F115PTD <input type="checkbox"/>
	33	10	10	20.8	16	30	850	AL330M063G100PTA <input type="checkbox"/>
	47	10	10	29.6	16	30	850	AL470M063G100PTA <input type="checkbox"/>
	56	10	12.5	35.3	16	25	950	AL560M063G125PTA <input type="checkbox"/>
80	8.2	8	9	6.6	16	90	450	AL8R2M080F090PTD <input type="checkbox"/>
	12	10	10	9.6	16	70	650	AL120M080G100PTA <input type="checkbox"/>
	15	8	11.5	12	16	70	550	AL150M080F115PTD <input type="checkbox"/>
	15	10	10	12	16	70	650	AL150M080G100PTA <input type="checkbox"/>
	18	10	12.5	14.4	16	50	750	AL180M080G125PTA <input type="checkbox"/>

☐: Leave **blank** for Standard type

☐: Enter **X** for AEC-Q200 type

Part number shows taped version with straight leads and Ammo Pack packaging.





See "PACKAGING INFORMATION" for further lead treatment options.

### MULTIPLIER $K_f$ for RIPPLE CURRENT vs. FREQUENCY

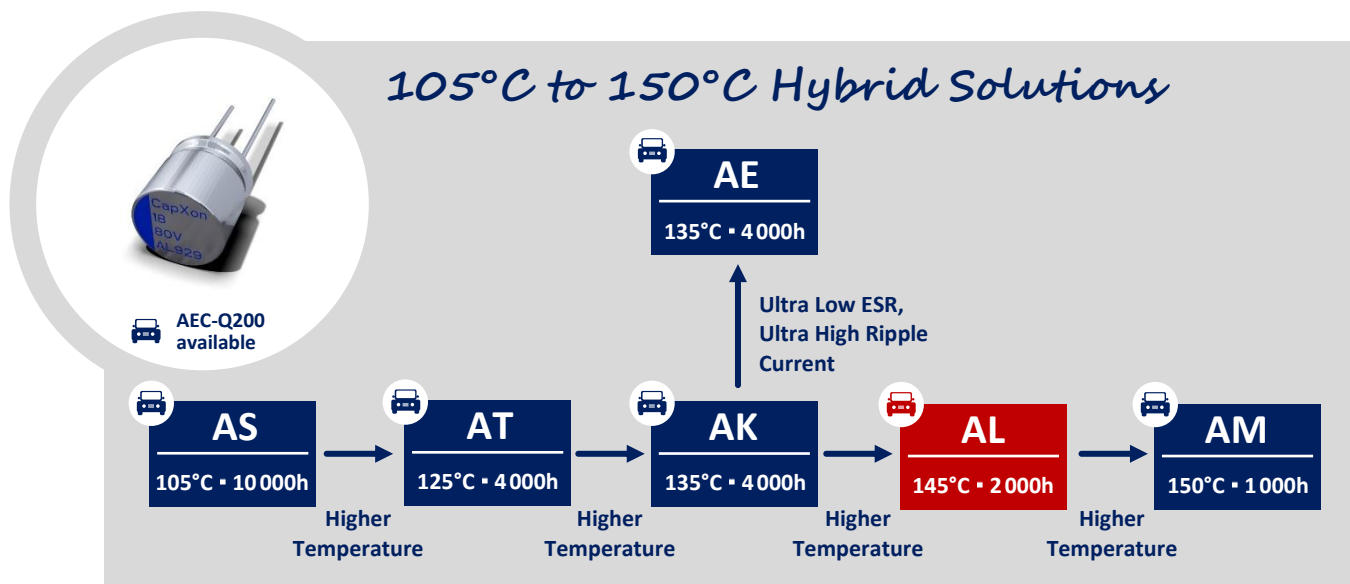
Frequency (Hz)	$100 \leq \text{Freq.} < 120$	$120 \leq \text{Freq.} < 200$	$200 \leq \text{Freq.} < 300$	$300 \leq \text{Freq.} < 500$
Coefficient $K_f$	0.10	0.10	0.10	0.15
Frequency (Hz)	$500 \leq \text{Freq.} < 1k$	$1k \leq \text{Freq.} < 2k$	$2k \leq \text{Freq.} < 3k$	$3k \leq \text{Freq.} < 5k$
Coefficient $K_f$	0.20	0.30	0.40	0.45
Frequency (Hz)	$5k \leq \text{Freq.} < 10k$	$10k \leq \text{Freq.} < 15k$	$15k \leq \text{Freq.} < 20k$	$20k \leq \text{Freq.} < 40k$
Coefficient $K_f$	0.50	0.60	0.65	0.70
Frequency (Hz)	$40k \leq \text{Freq.} < 50k$	$50k \leq \text{Freq.} < 100k$	$100k \leq \text{Freq.} < 500k$	$500k \leq \text{Freq.} < 1M$
Coefficient $K_f$	0.80	0.85	1.00	1.05

### PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION

Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

			
<a href="#">General Precautions &amp; Guidelines</a>	<a href="#">Packaging Information</a>	<a href="#">3D Models</a>	<a href="#">Reliability Tests</a>

### GROUP CHART



### DISCLAIMER

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

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Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

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