

# AH Series: P90 Porcelain Capacitors



Description	Functional Applications	Benefits
Porcelain Capacitors Positive TC "P90" Low ESR, High Q Capacitance Range 0.1 - 5100 pF High Self-resonance Low Noise Established Reliability	Impedance Matching DC Blocking Bypass Coupling Tuning & Feedback Amplifier Matching Networks VCO Frequency Stabilization Filtering, Diplexers & Antenna Matching High RF Power Circuits	Oscillators Timing Circuits Filters RF Power Amplifiers & Delay Lines Stable TC, -55° to +125°C Operating Range High Q SMD Compatibility Lower ESR Power Handling, High Voltage

## Dielectric Characteristics

Dielectric Material Code	Temperature Coefficient (ppm/°C Maximum)	Dissipation Factor (% @ 1MHz Maximum)	Dielectric Withstanding Voltage		Insulation Resistance (MΩ Minimum)		Aging	Piezoelectric Effects	Dielectric Absorption
			Voltage Rating (Volts)	DWV (Volts)	@ +25°C	@ +125°C			
AH	+90 ± 20	0.05	Please see chart (pg. 13)	250% of WVDC for 5 sec unless specified in chart (pg. 13)	10 <sup>6</sup>	10 <sup>5</sup>	None	None	None

## Part Number Breakdown\*

<b>*C</b>	<b>17</b>	<b>AH</b>	<b>620</b>	<b>J</b>	<b>-</b>	<b>7</b>	<b>U</b>	<b>N</b>	<b>-</b>	<b>X</b>	<b>0</b>	<b>T</b>
Multi Layer	Case Size	Material System	Capacitance Code	Tolerance Level	Voltage Code	Termination Code	Leading Code	Test Level	Marking Code	Packaging		

### Available Termination Types

C11	T, U, S, Z, E, P, Q, Y, M, W, H, V, R
C17	T, U, S, Z, E, P, Q, Y, M, W, H, V, R
C18	U, Z, E, Y, W, H
C22	U, S, Z, E, P, Q, Y, M, W, H, V, R
C40	T, U, S, Z, E, P, Q, Y, M, W, H, V, R

### Code Termination System

T	Ag Term, Ni Barrier Layer, Heavy SnPb Plated Solder
U	Ag Termination, Ni Barrier Layer, SnPb Plated Solder
S	Ag Termination, Ni Barrier Layer, Gold Flash, RoHS
Z	Ag Termination, Ni Barrier Layer, Sn Plated Solder, RoHS
E	Ag Termination, Enhanced Ni Barrier, Sn Plated Solder, RoHS
P	AgPd Termination, RoHS
Q	Polymer Termination, Ni Barrier Layer, Sn Plated Solder, RoHS
Y	Polymer Termination, Ni Barrier Layer, SnPb Plated Solder,
M	Polymer Termination, Cu Barrier Layer, Sn Plated Solder, RoHS
W	Ag Termination, Cu Barrier Layer, Sn Plated Solder
H	Ag Termination, Enhanced Cu Barrier, Sn Plated Solder, RoHS
V	Ag Termination, Cu Barrier Layer, SnPb Plated Solder
R	Ag Termination, Cu Barrier Layer, Heavy SnPb Plated Solder

### Available Lead Types

C11	A, B, D
C17	A, B, C, D, E, F
C18	A, B, C, D, E, F
C22	A, B, C, D, E, F
C40	A, B, C, D, E, F

Special Leading requirements available.

### Code Lead Types

A	Axial Ribbon
B	Radial Ribbon
C	Center Ribbon
D	Customer Specified
E	Axial Wire
F	Radial Wire
N	None

### Test Level – All Case Sizes

X	Standard
Y	Reduced Visual
A	MIL-PRF-55681 Group A
C	MIL-PRF-55681 Group C
D	Customer Specified

### Available Laser Marking

C11	0, 1, 2, 5
C17	0, 1, 2, 3, 4, 5
C18	0, 1, 2, 5
C22	0, 1
C40	0, 1

### Code Laser Marking

0	No marking
1	Single-side marked
2	Double-side marked
3	Large single-side marked
4	Large double-side marked
5	Vertical edge marked
9	Customer Specified

### Available Packaging

C11	T, V, W, B, P, S
C17	T, V, W, B, P, S
C18	T, V, W, B, P, S
C22	T, B, P, S
C40	T, B, P, S, R

### Code Packaging

T	Tape & Reel – Horizontal
V	Tape & Reel – Vertical
W	Waffle Pack
B	Bulk
P	Plastic Box
R	Tube (Rail)
S	Customer Specified

\*See page 6 for complete part number system.

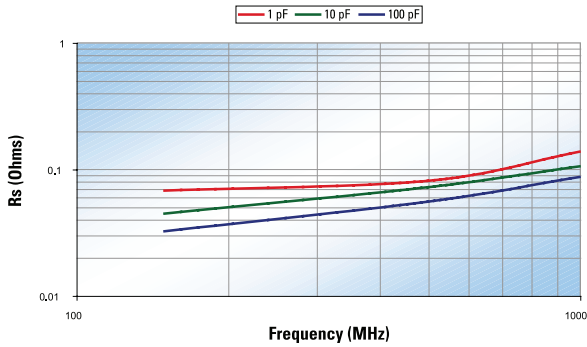
## Capacitance and Voltage Table

CAP CODE	CAP (pF)	CASE SIZE C11 0505	CASE SIZE C17 1111	CASE SIZE C18 1111	CASE SIZE C22 2225	CASE SIZE C40 3838
0R1	0.1	250V Code 9 DWV = 625V	1000V Code 7 DWV = 2500V	2000V Code G DWV = 2500V	2500V Code B DWV = 3000V	7200V Code H DWV = 8700V
0R2	0.2					
0R3	0.3					
0R4	0.4					
0R5	0.5					
0R6	0.6					
0R7	0.7					
0R8	0.8					
0R9	0.9					
1R0	1.0					
1R1	1.1					
1R3	1.3					
1R4	1.4					
1R5	1.5					
1R6	1.6					
1R7	1.7					
1R8	1.8					
1R9	1.9					
2R0	2.0					
2R1	2.1					
2R2	2.2					
2R4	2.4					
2R7	2.7					
3R0	3.0					
3R3	3.3					
3R6	3.6					
3R9	3.9					
4R3	4.3					
4R7	4.7					
5R1	5.1					
5R6	5.6					
6R2	6.2					
6R8	6.8					
7R5	7.5					
8R2	8.2					
9R1	9.1					
100	10					
110	11					
120	12					
130	13					
150	15					
160	16					
180	18					
200	20					
220	22					
240	24					
270	27					
300	30					
330	33					
360	36					
390	39					
430	43					
470	47					
510	51					
560	56					
620	62					
680	68					
750	75					
820	82					
910	91					
101	100					
111	110					
121	120					
131	130					
151	150					
161	160					
181	180					
201	200					
221	220					
241	240					
271	270					
301	300					
331	330					
361	360					
391	390					
431	430					
471	470					
511	510					
561	560					
621	620					
681	680					
751	750					
821	820					
911	910					
102	1000					
122	1200					
152	1500					
182	1800					
222	2200					
272	2700					
332	3300					
392	3900					
472	4700					
512	5100					
Reel QTY Horizontal		3500	2350	2350	500	250

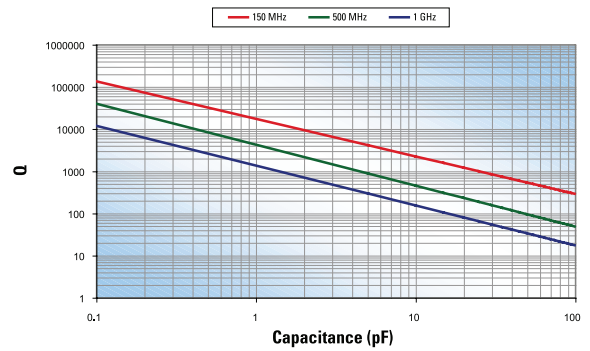
Special capacitance values available upon request.

## RF Characteristics

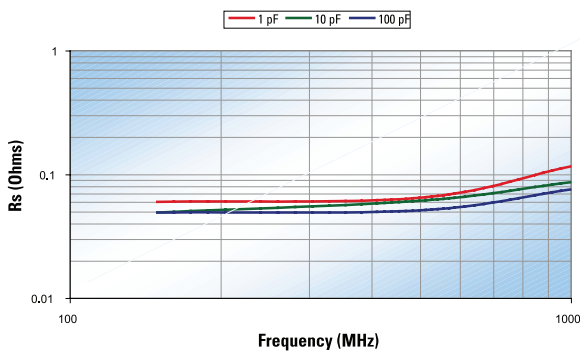
**ESR vs Frequency**  
**DLI C11 AH Series**



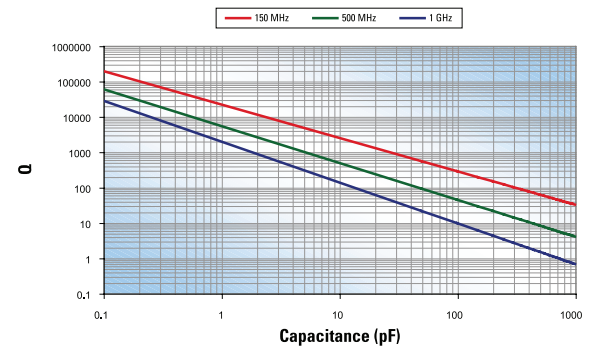
**Q vs Capacitance**  
**DLI C11 AH Series**



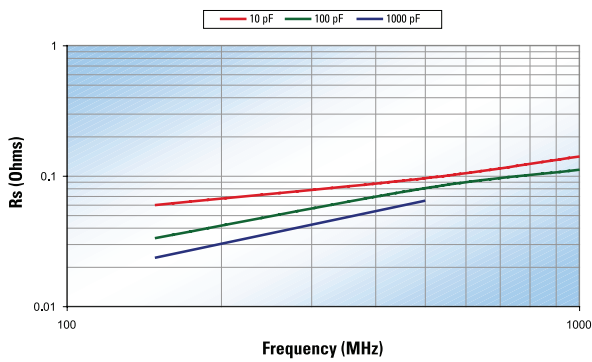
**ESR vs Frequency**  
**DLI C17 AH Series**



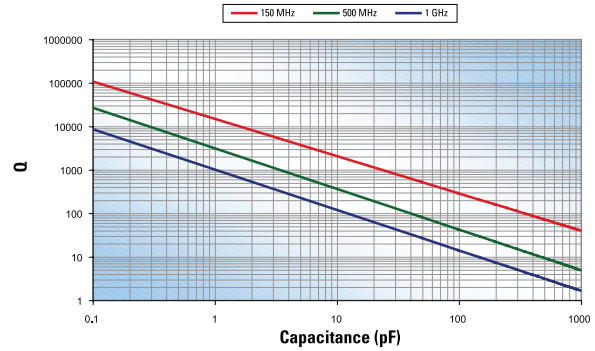
**Q vs Capacitance**  
**DLI C17 AH Series**



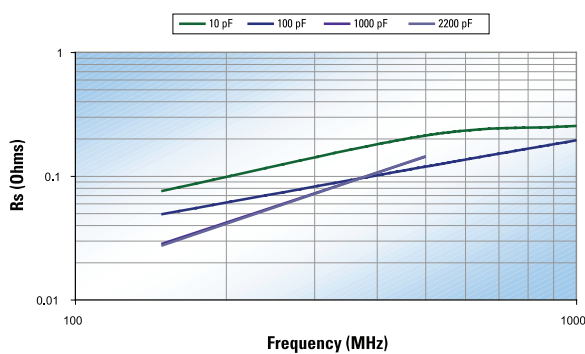
**ESR vs Frequency**  
**DLI C18 AH Series**



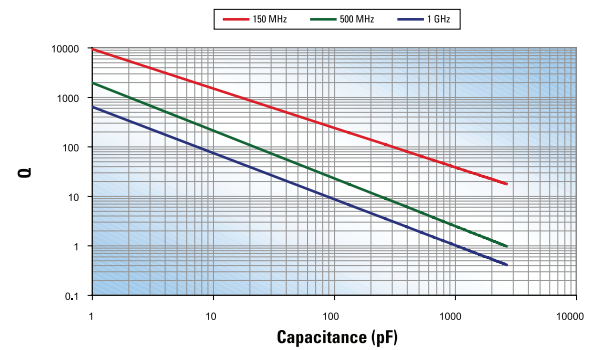
**Q vs Capacitance**  
**DLI C18 AH Series**



**ESR vs Frequency**  
**DLI C22 AH Series**



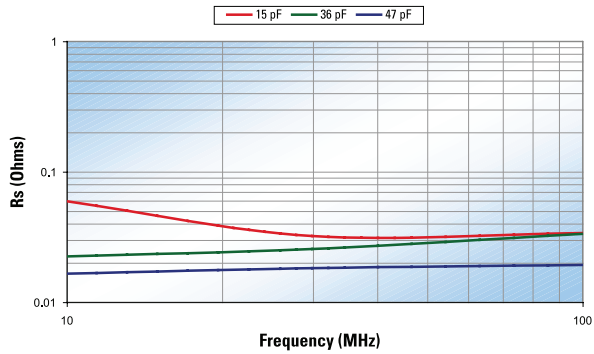
**Q vs Capacitance**  
**DLI C22 AH Series**



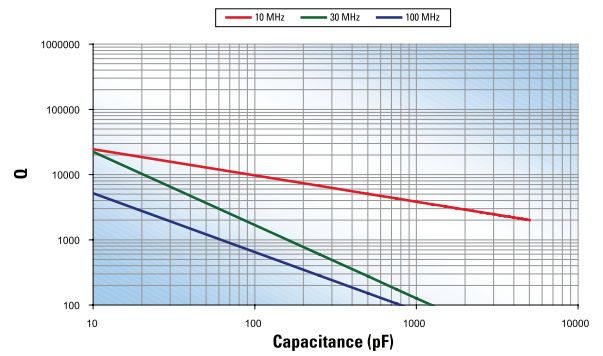
The information above represents typical device performance.

## RF Characteristics

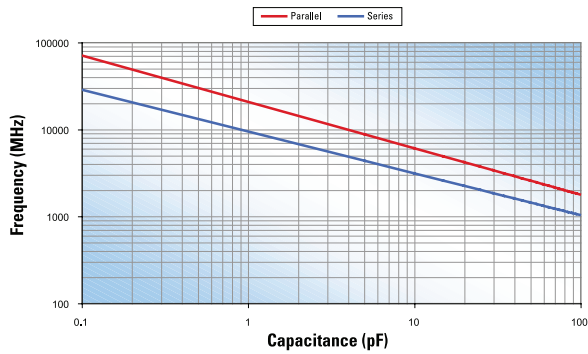
**ESR vs Frequency**  
DLI C40 AH Series



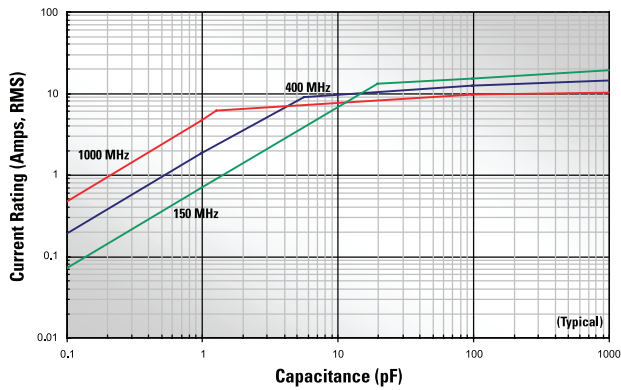
**Q vs Capacitance**  
DLI C40 AH Series



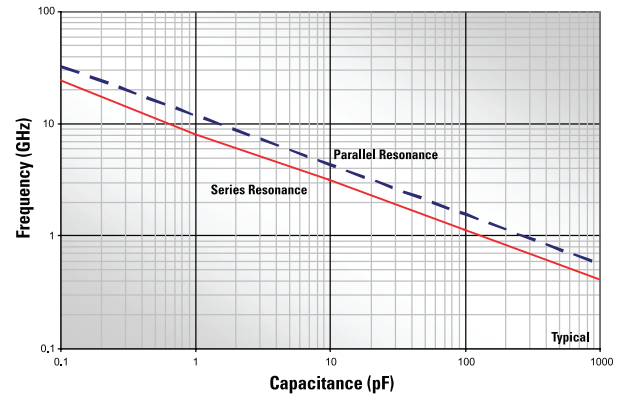
**Resonant Frequency vs Capacitance**  
DLI C11 AH Series



**Current Rating vs. Capacitance,**  
(infinite heat sink, 25°C ambient temperature)  
DLI C17AH Series



**First Resonance Frequency vs Capacitance**  
DLI C17AH Series



The information above represents typical device performance.