

UL Series: Ultra Low ESR Ceramic Capacitors

Description	Functional Applications	Benefits
Ceramic Capacitors NPO Low ESR, High Q Capacitance Range 0.2 - 2200 pF High Working Voltage Low Noise	DC Blocking Amplifier Matching Networks VCO Frequency Stabilization Filtering, Diplexers & Antenna High RF Power Circuits Bypass Coupling Tuning & Feedback Broadcast Power Amps	High Q Stable TC, -55° to +125°C Operating Range EIA 0603 & 0805 Case Size SMD Compatibility Oscillators Timing Circuits Filters RF Power Amplifiers & Delay Lines Ultra Low ESR



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			
UL	0 ± 30	0.05	Please see chart (pg. 25)	250% of WVDC for 5 sec unless specified in chart (pg. 25)	10 ⁵	10 ⁴	None	None	None

Part Number Breakdown*

C	17	UL	620	J -	7	U	N -	X	0	T																																																																																				
Multi Layer	Case Size	Material System	Capacitance Code	Tolerance Level	Voltage Code	Termination Code	Leading Code	Test Level	Marking Code	Packaging																																																																																				
Available Termination Types <table><tr><td>C04</td><td>S</td></tr><tr><td>C06</td><td>U, S, Z</td></tr><tr><td>C07</td><td>U, S, Z</td></tr><tr><td>C08</td><td>U, S, Z</td></tr><tr><td>C11</td><td>U, S, Z</td></tr><tr><td>C17</td><td>U, S, Z</td></tr></table> Code Termination System <table><tr><td>U</td><td>Ag Termination, Ni Barrier Layer, SnPb Plated Solder</td></tr><tr><td>S</td><td>Ag Termination, Ni Barrier Layer, Gold Flash, RoHS</td></tr><tr><td>Z</td><td>Ag Term., Ni Barrier Layer, Sn Plated Solder, RoHS</td></tr></table>			C04	S	C06	U, S, Z	C07	U, S, Z	C08	U, S, Z	C11	U, S, Z	C17	U, S, Z	U	Ag Termination, Ni Barrier Layer, SnPb Plated Solder	S	Ag Termination, Ni Barrier Layer, Gold Flash, RoHS	Z	Ag Term., Ni Barrier Layer, Sn Plated Solder, RoHS	Available Lead Types <table><tr><td>C04</td><td>N</td></tr><tr><td>C06</td><td>N</td></tr><tr><td>C07</td><td>N</td></tr><tr><td>C08</td><td>N</td></tr><tr><td>C11</td><td>A, B, D</td></tr><tr><td>C17</td><td>A, B, C, D, E, F</td></tr></table>		C04	N	C06	N	C07	N	C08	N	C11	A, B, D	C17	A, B, C, D, E, F	Test Level – All Case Sizes <table><tr><td>X</td><td>Standard</td></tr><tr><td>Y</td><td>Reduced Visual</td></tr><tr><td>A</td><td>MIL-PRF-55681 Group A</td></tr><tr><td>C</td><td>MIL-PRF-55681 Group C</td></tr><tr><td>D</td><td>Customer Specified</td></tr></table>		X	Standard	Y	Reduced Visual	A	MIL-PRF-55681 Group A	C	MIL-PRF-55681 Group C	D	Customer Specified	Available Laser Marking <table><tr><td>C04</td><td>0</td></tr><tr><td>C06</td><td>0, 1, 2</td></tr><tr><td>C07</td><td>0, 1</td></tr><tr><td>C08</td><td>0, 1, 2</td></tr><tr><td>C11</td><td>0, 1, 2</td></tr><tr><td>C17</td><td>0, 1, 2</td></tr></table> Code Laser Marking <table><tr><td>0</td><td>No marking</td></tr><tr><td>1</td><td>Single-side marked</td></tr><tr><td>2</td><td>Double-side marked</td></tr><tr><td>9</td><td>Customer Specified</td></tr></table>		C04	0	C06	0, 1, 2	C07	0, 1	C08	0, 1, 2	C11	0, 1, 2	C17	0, 1, 2	0	No marking	1	Single-side marked	2	Double-side marked	9	Customer Specified	Available Packaging <table><tr><td>C04</td><td>T, W, B, P, S</td></tr><tr><td>C06</td><td>T, W, B, P, S</td></tr><tr><td>C07</td><td>W, B, P, S</td></tr><tr><td>C08</td><td>T, V, W, B, P, S</td></tr><tr><td>C11</td><td>T, V, W, B, P, S</td></tr><tr><td>C17</td><td>T, V, W, B, P, S</td></tr></table> Code Packaging <table><tr><td>T</td><td>Tape & Reel – Horizontal</td></tr><tr><td>V</td><td>Tape & Reel – Vertical</td></tr><tr><td>W</td><td>Waffle Pack</td></tr><tr><td>B</td><td>Bulk</td></tr><tr><td>P</td><td>Plastic Box</td></tr><tr><td>S</td><td>Customer Specified</td></tr></table>		C04	T, W, B, P, S	C06	T, W, B, P, S	C07	W, B, P, S	C08	T, V, W, B, P, S	C11	T, V, W, B, P, S	C17	T, V, W, B, P, S	T	Tape & Reel – Horizontal	V	Tape & Reel – Vertical	W	Waffle Pack	B	Bulk	P	Plastic Box	S	Customer Specified
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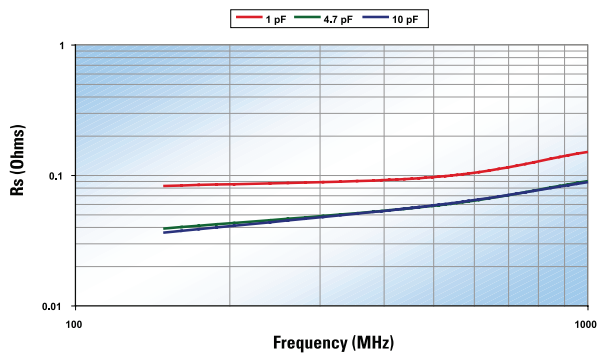
*See page 6 for complete part number system.

Capacitance and Voltage Table

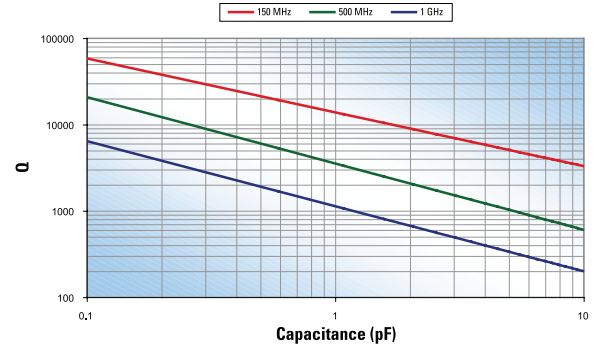
CAP CODE	CAP (pF)	CASE SIZE C04 0402	CASE SIZE C06 0603	CASE SIZE C07 0711	CASE SIZE C08 0805	CASE SIZE C11 0505	CASE SIZE C17 1111
0R1	0.1	200V Code 6 DWV = 500V	250V Code 9 DWV = 625V		250V Code 9 DWV = 625V	250V Code 9 DWV = 625V	1000V Code 7 DWV = 2500V
0R2	0.2						
0R3	0.3						
0R4	0.4						
0R5	0.5						
0R6	0.6						
0R7	0.7						
0R8	0.8						
0R9	0.9						
1R0	1.0						
1R1	1.1						
1R2	1.2						
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			500V Code 4 DWV = 1250V	250V Code 9 DWV = 625V	250V Code 9 DWV = 625V	
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						
151	150						
181	180						
221	220						
271	270						
331	330						
391	390						
471	470						
511	510						
561	560						
621	620						
681	680						
821	820						
911	910						
102	1000						
Reel QTY Horizontal		5000	4000	2350	5000	3500	2350

Special capacitance values available upon request.

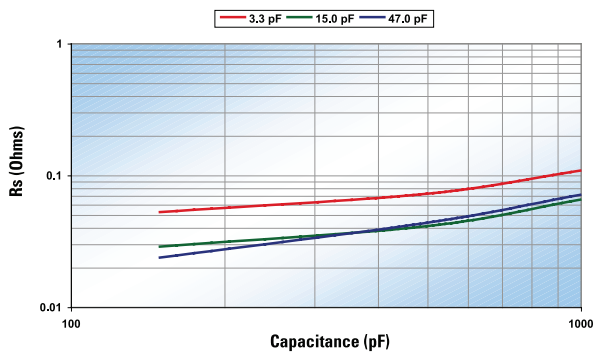
ESR vs Frequency
DLI C04 UL Series



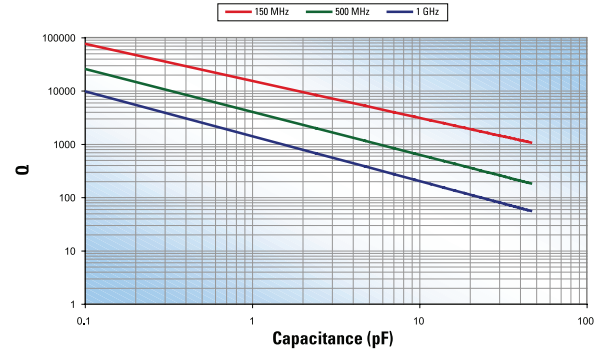
Q vs Capacitance
DLI C04 UL Series



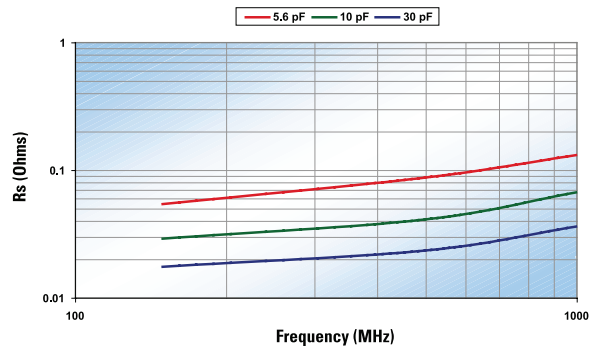
ESR vs Frequency
DLI C06 UL Series



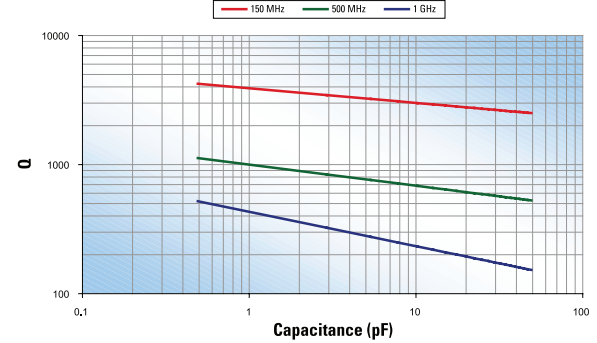
Q vs Capacitance
DLI C06 UL Series



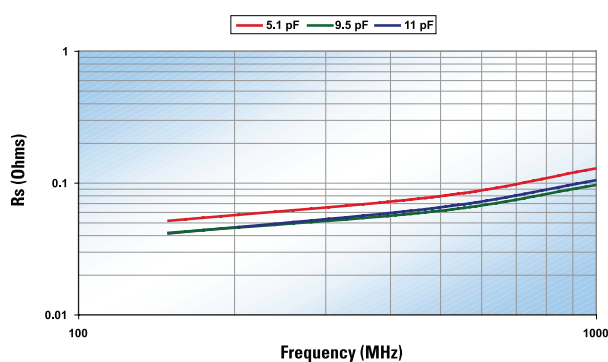
ESR vs Frequency
DLI C07 UL Series



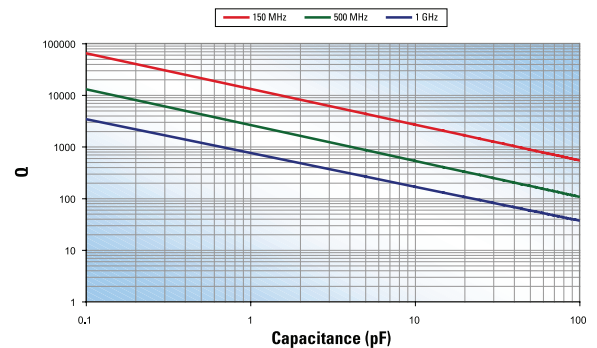
Q vs Capacitance
DLI C07 UL Series



ESR vs Frequency
DLI C08 UL Series

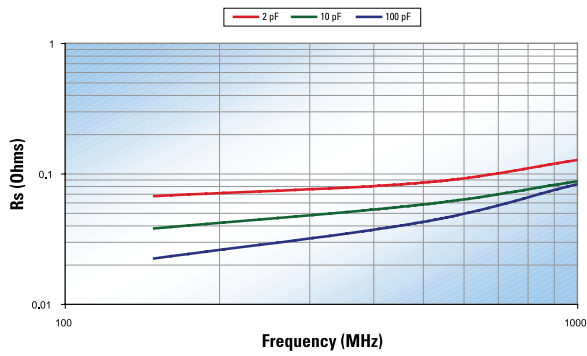


Q vs Capacitance
DLI C08 UL Series

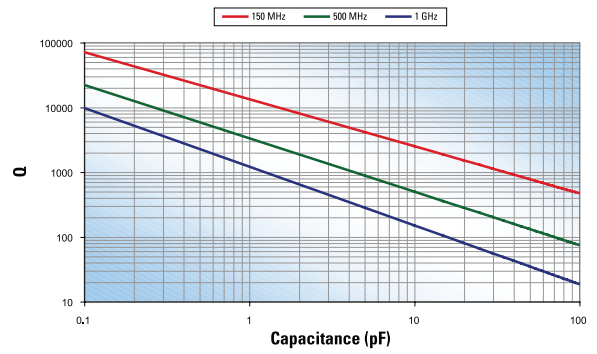


The information above represents typical device performance.

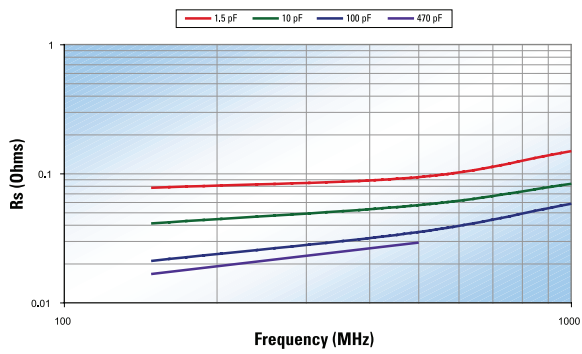
ESR vs Frequency
DLI C11 UL Series



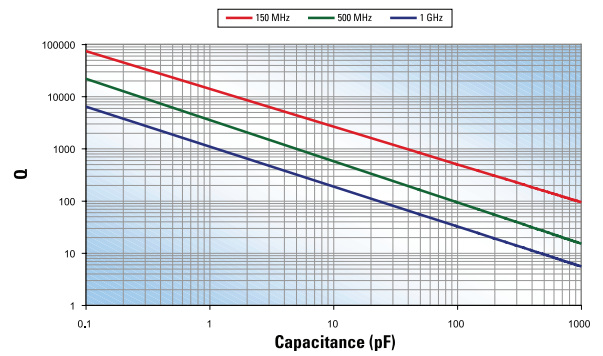
Q vs Capacitance
DLI C11 UL Series



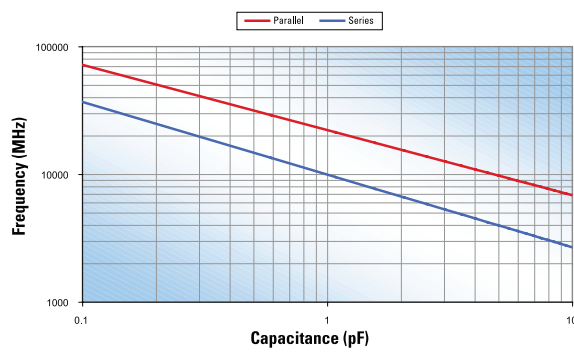
ESR vs Frequency
DLI C17 UL Series



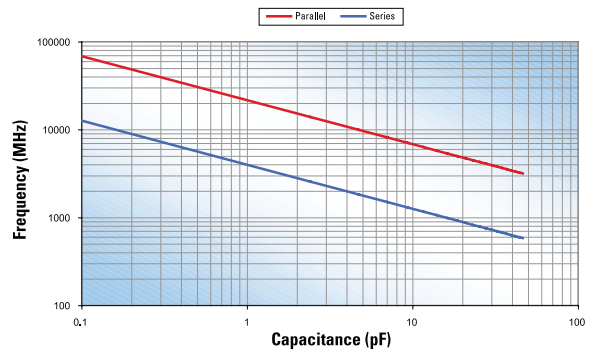
Q vs Capacitance
DLI C17 UL Series



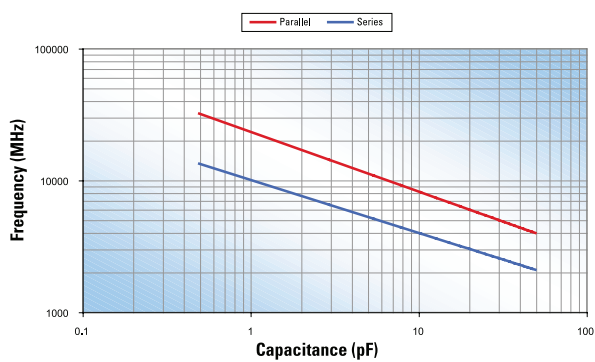
Resonant Frequency vs Capacitance
DLI C04 UL Series



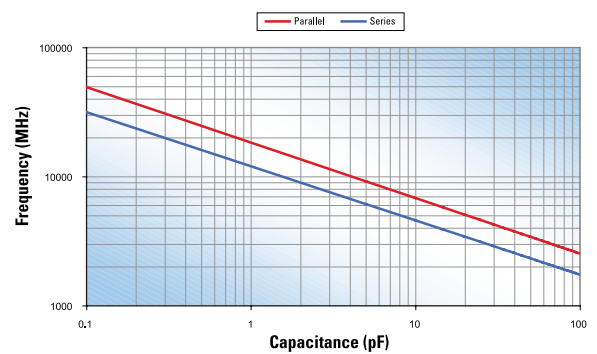
Resonant Frequency vs Capacitance
DLI C06 UL Series



Resonant Frequency vs Capacitance
DLI C07 UL Series



Resonant Frequency vs Capacitance
DLI C08 UL Series



The information above represents typical device performance.

Mouser Electronics

Authorized Distributor

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Dielectric Laboratories:

<u>C06UL0R8B-9ZN-X1T</u>	<u>C06UL300J-9ZN-X1T</u>	<u>C06UL330J-9ZN-X1T</u>	<u>C06UL2R7B-9ZN-X1T</u>	<u>C06UL5R6B-9ZN-X1T</u>
<u>C06UL1R5B-9ZN-X1T</u>	<u>C06UL2R0B-9ZN-X1T</u>	<u>C06UL0R3B-9ZN-X1T</u>	<u>C06UL1R0B-9ZN-X1T</u>	<u>C06UL9R1B-9ZN-X1T</u>
<u>C06UL0R6B-9ZN-X1T</u>	<u>C06UL0R5B-9ZN-X1T</u>	<u>C06UL3R3B-9ZN-X1T</u>	<u>C06UL0R7B-9ZN-X1T</u>	<u>C06UL4R7B-9ZN-X1T</u>
<u>C06UL0R9B-9ZN-X1T</u>	<u>C06UL1R2B-9ZN-X1T</u>	<u>C06UL3R9B-9ZN-X1T</u>	<u>C06UL0R4B-9ZN-X1T</u>	<u>C06UL6R8B-9ZN-X1T</u>
<u>C06UL120J-9ZN-X1T</u>	<u>C06UL0R2B-9ZN-X1T</u>	<u>C08UL4R3B-9ZN-X0T</u>	<u>C08UL1R4B-9ZN-X0T</u>	<u>C08UL220J-9ZN-X0T</u>
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<u>C08UL240J-9ZN-X0T</u>	<u>C08UL2R4B-9ZN-X0T</u>	<u>C08UL510J-9ZN-X0T</u>	<u>C08UL5R6B-9ZN-X0T</u>	<u>C08UL3R3B-9ZN-X0T</u>
<u>C08UL1R6B-9ZN-X0T</u>	<u>C08UL1R7B-9ZN-X0T</u>	<u>C08UL330J-9ZN-X0T</u>	<u>C08UL1R9B-9ZN-X0T</u>	<u>C08UL680J-9ZN-X0T</u>
<u>C08UL910J-9ZN-X0T</u>	<u>C08UL390J-9ZN-X0T</u>	<u>C08UL0R4B-9ZN-X0T</u>	<u>C08UL0R6B-9ZN-X0T</u>	<u>C08UL120J-9ZN-X0T</u>
<u>C08UL300J-9ZN-X0T</u>	<u>C08UL150J-9ZN-X0T</u>	<u>C08UL2R2B-9ZN-X0T</u>	<u>C08UL560J-9ZN-X0T</u>	<u>C08UL1R0B-9ZN-X0T</u>
<u>C08UL7R5B-9ZN-X0T</u>	<u>C08UL5R1B-9ZN-X0T</u>	<u>C08UL3R9B-9ZN-X0T</u>	<u>C08UL0R5B-9ZN-X0T</u>	<u>C08UL1R5B-9ZN-X0T</u>
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<u>C08UL470J-9ZN-X0T</u>	<u>C08UL130J-9ZN-X0T</u>	<u>C04ULENG-S</u>	<u>C04ULR25A-6SN-X0T</u>	<u>C08UL910J-8UN-X0T</u>