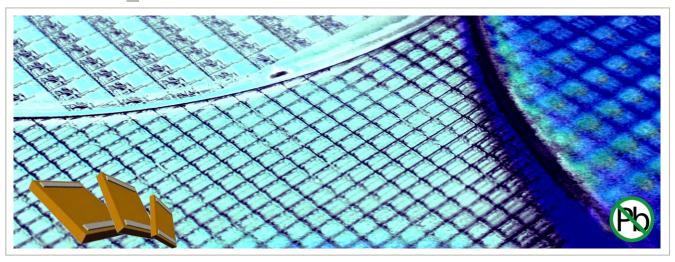


LPSC424.xxx - 0402 Low Profile Silicon Capacitor

Rev 3.1



Key features

- Ultra low profile (100µm)
- High stability of capacitance value:
 - **◆** Temperature <±0.5% (-55°C to +150°C)
 - Voltage <0.1%/Volts
 - Negligible capacitance loss through ageing
- Unique high capacitance in EIA/0402 package size, up to 100 nF
- High reliability (FIT <0.017 parts / billion hours)</p>
- Low leakage current down to 100 pA
- Low ESL and Low ESR
- Suitable for lead free reflow-soldering *Please refer to our assembly Application Note for further recommendations

Thanks to the unique IPDiA Silicon capacitor technology, most of the problems encountered in demanding applications can be solved.

Low Profile Silicon Capacitors are available with thicknesses down to 80µm and are the most appropriate solution in applications with height constraints.

LPSC is the perfect choice for embedded technologies, modules, systems in package, when designers are looking at **utmost decoupling** behaviours.

The Silicon capacitor technology offers a capacitor integration capability (up to 250nF/mm²) which allows **downsizing** compared to Tantalum and MLCC.

Key applications

- All demanding applications, such as medical, telecom, computer industries
- Decoupling / Filtering / Charge pump (i.e.: Pacemakers / mobile phones)
- High reliability applications
- Devices with battery operations
- Extreme miniaturization
- Suitable for Embedded technologies

The IPDiA technology features **high reliability**, up to 10 times better than alternative capacitor technologies such as Tantalum or MLCC, and eliminates cracking phenomena.

Silicon Capacitor technology also offers a very stable capacitor value over the full operating voltage & temperature range, with a high and stable insulation resistance.

This Silicon based technology is RoHS compliant and compatible with lead free reflow soldering process.





Electrical specification

		Capacitance value							
		10	15	22	33	47	68		
	1 pF	Contact IPDIA Sales	Contact IPDIA Sales						
	10 pF	100 pF: 935.121.424.310	150 pF: 935.121.424.315	220 pF: 935.121.424.322	330 pF: 935.121.424.333	470 pF: 935.121.424.347	680 pF: 935.121.424.368		
Unit	0.1 nF	1 nF: 935.121.424.410	1.5 nF: 935.121.424.415	2.2 nF: 935.121.424.422	3.3 nF: 935.121.424.433	4.7 nF: 935.121.424.447	6.8 nF: 935.121.424.468		
	1 nF	10 nF: 935.121.424.510	15 nF: 935.121.424.515	22 nF: 935.121.424.522	33 nF: 935.121.424.533	47 nF: 935.121.424.547 935.121.724.547	Contact IPDIA Sales		
	10 nF	100 nF: 935.121.424.610							

(*)	80	μm	thickness	on	request

^(**) Extended temperature range (up to +250 °C) available, see Xtreme Temperature Silicon Capacitor product: XTSC

Parameters	Value
Capacitance range	100 pF to 100 nF ^(***)
Capacitance tolerances	±15 % ^(m)
Operating temperature range	-55 °C to 150 °C (**)
•	- 70 °C to 165 °C
Storage temperatures	
Temperature coefficient	<±0.5 %, from -55 °C to +150 °C
Breakdown voltage (BV)	11 VDC, 30VDC
Capacitance variation versus RVDC	0.1 % /V (from 0 V to RVDC)
Equivalent Serial Inductor (ESL)	Max 100 pH
Equivalent Serial Resistor (ESR)	Max $400m\Omega^{(***)}$
Insulation resistance	100GΩ min @ 3V,25°C
Ageing	Negligible, < 0.001 % / 1000 h
Reliability	FIT<0.017 parts / billion hours,
Capacitor height	Max 100 μm ^(*)

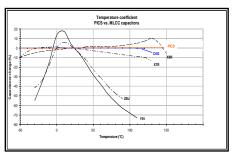


Fig.1 Capacitance change versus temperature variation compared with alternative dielectrics

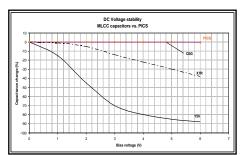


Fig.2 Capacitance change versus voltage variation compared with alternative dielectrics

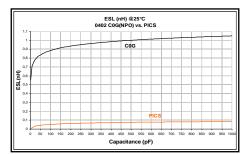
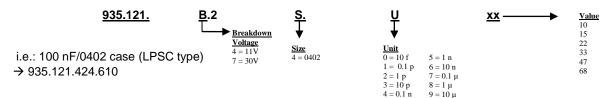


Fig.3 ESL versus capacitance value compared with alternative dielectrics

Part Number



Termination and Outline

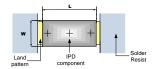
Termination

Lead-free nickel/solder coating compatible with automatic soldering technologies: reflow and manual.

Typical dimensions, all dimensions in mm.

Package outline

Тур.		0402
Comp.	П	1.20±0.05
size	W	0.70±0.05



(0402 PCB footprint)

Packaging

Tape and reel, tray, waffle pack or wafer delivery.

Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.



For more information, please visit: http://www.ipdia.com To contact us, email to: sales@ipdia.com

> Date of release: 27th February 2014 Document identifier: CL431 111 615 127

^(***) Other values on request.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for ipdia manufacturer:

Other Similar products are found below:

935132424522	935133426610	935142624522	935146831510	935133429733	$\underline{935152783522}$	935133424310	935133424347	935132426610
935131424533	935142521410	935151424610	939118492510	935152424610	935174733610	939114733510	935131426610	935152722456
935153630510	935142831510	935153521410	935152724547	935142521310	935152723510	935156722410	935156492510	935153521310
935131424522	935155733510	935154634522	935153831510	935154630510	935156733510	935156722456	935174730510	935132424533
939118722456	935133424547	935174732547	935174730410	935133424533	935133424522	935152722410	935146521410	939113733510
935152492510	935156424610	939113424610	935155424610	935151723510				