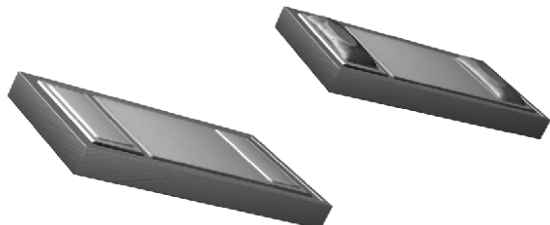




Vishay

## High Performance, High Precision Wire-Bondable 0402 Capacitor for Smartcard, High-Frequency and Substrate-Embedded Applications



**PATENTED**

**ELECTRICAL SPECIFICATIONS**

**Operating Temperature:** - 55 °C to + 125 °C  
**Temperature Coefficient of Capacitance (TCC):** 0 ± 30 ppm/°C  
**Insulation Resistance:** 10<sup>11</sup> Ω min  
**Voltage:** 2.5 x rated voltage (DC) for 5 seconds  
**Ageing:** none

**ENVIRONMENTAL SPECIFICATIONS**

**Life Test:** 1000 hours, + 125 °C at 2 x rated voltage (DC)  
**Thermal Shock:** 100 Cycles, - 55 °C/+ 150 °C  
**Moisture Resistance:** 1000 hours at rated DCV, 85 % RH, + 85 °C

**FEATURES**

- Terminations are RoHS compliant in Au (JEDEC “e4”). Sn/Ag/Cu (JEDEC “e1”) & Sn/Pb available
- New technology monolithic-silicon capacitor based on a special semiconductor process
- Construction reduces the parasitic inductance and brings the SRF values to ultra-high frequencies
- Capacitance is extremely stable in a wide range of frequencies from 1 MHz to several GHz
- High Q and low ESR
- Tight tolerance to ± 1 % or 0.05 pF
- Ultra high SRF
- Low parasitic inductance (~ 0.032 nH)
- Capacitance range: 0.1 pF to 180
- Low profile - 0.18 mm (0.007 inches)
- Wire-bondable (Type B) or SMD (Type C)



**RoHS\***  
COMPLIANT

**APPLICATIONS**

- Contactless Smart Cards
- Embedded substrates
- High-frequency/high data-rate circuits

CAPACITANCE TOLERANCE CODE					
FOR LESS THAN 10 pF			FOR 10 pF AND HIGHER		
A	B	C	F	G	J
± 0.05 pF	± 0.10 pF	± 0.25 pF	± 1 %	± 2 %	± 5 %

ORDERING INFORMATION							
HPC	0402	B	101	G	G	X	T0
MODEL	SIZE	TYPE	CAPACITANCE VALUE	CAPACITANCE TOLERANCE	TERMINATION	VOLTAGE	PACKAGING
		B or C B = WB C = SMD	The first two digits are significant, the third is a multiplier. An “R” indicates a decimal point. Examples: 101 = 100 pF Expressed in pF	see chart above	G = Gold bonding termination (B type) W = Lead (Pb)-free X = Tin/Lead termination (C type)	1 = 6 V Z = 10 V Y = 16 V X = 25 V M = 50 V L = 100 V	T0 = 10 000 pcs T5 = 5000 pcs T1 = 1000 pcs tape and reel W = 20 000 pcs on dicing frame (available on B type only)
For “C” Type, “W” terminations preferred over “X”. “See Part Numbering System, Document 10147, for complete explanations.”							

\* Pb containing terminations are not RoHS compliant, exemptions may apply.



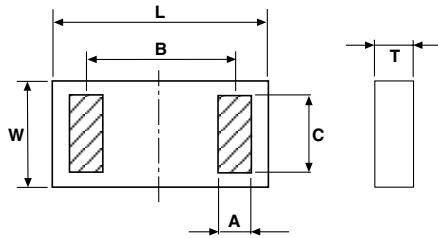
Not for new designs, this product will be discontinued soon

HPC0402B/C

High Performance, High Precision  
Wire-Bondable 0402 Capacitor for  
Smartcard, High-Frequency and

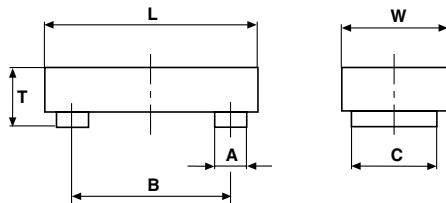
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**TYPE B - DIMENSIONS**



DIMENSION	INCHES	MILLIMETERS
L	0.040 ± 0.002	1.02 ± 0.05
W	0.020 ± 0.002	0.51 ± 0.05
T	0.007 ± 0.001	0.18 ± 0.02
A	0.006 ± 0.002	0.15 ± 0.05
B	0.028 ± 0.002	0.71 ± 0.05
C	0.014 ± 0.002	0.37 ± 0.05

**TYPE C - DIMENSIONS**



DIMENSION	INCHES	MILLIMETERS
L	0.040 ± 0.002	1.02 ± 0.05
W	0.020 ± 0.002	0.51 ± 0.05
T	0.010 ± 0.002	0.25 ± 0.05
A	0.006 ± 0.002	0.15 ± 0.05
B	0.028 ± 0.002	0.71 ± 0.05
C	0.014 ± 0.002	0.37 ± 0.05

For PAD Design please see assembly/reflow recommendations document 10125.

**CAPACITANCE RANGE AND VOLTAGE**

See HPC0402A data sheet, document number 10117.



## Disclaimer

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