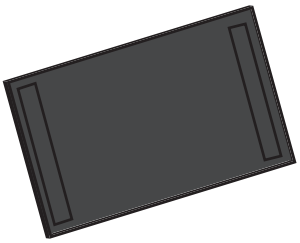
Extreme Temperature Silicon Capacitor

XTSC0402 47nF
935.133.424.547

The IPDiA Technology features a Capacitor Integration Capability (up to 250nF/mm^2) which allows a capacitance value similar to X8R dielectric, but with better electrical performances than C0G/NP0 dielectrics.

This technology also offers high reliability, up to 10 times better than alternative capacitor technologies.

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



Key Applications

- 250°C Requirements, High Temperature Applications, such as Military, Aerospace, Automotive & Downhole Industries.
- High Reliability Applications
- Decoupling / Filtering / Charge Pump (ie. Pressure Sensor, Motor Managment)
- Replacement of X8R and C0G Dielectrics
- Downsizing

Key Features

- Ultra Low Profile (100µm)
- Ultra High Temperature up to 250°C;
  - Temperature Coeff<±1.5% (-55 to +250°C)
  - Voltage < 0.1 % / V
  - Negligible Capacitance Loss through Ageing
- Unique High Capacitance in EIA/0402 Package Size, up to 100nF
- High Reliability (FIT < 0.017 parts / billion hours)
- Low Leakage Current down to 100pA
- Low ESL and Low ESR
- Suitable with Lead Free Reflow-Soldering

Part Number

935.132. **B. 2** **S.** **U.** **xx**

ie. 47nF/0402 case (XTSC type) → 935.133.424.547

Breakdown Voltage:
4 = 11V
7 = 30V

Size:
2 = 1005
3 = 0201
4 = 0402

Unit:
0 = 10f
1 = 0.1p
2 = 1p
3 = 10p
4 = 0.1n
5 = 1n
6 = 10n
7 = 0.1u
8 = 1u
9 = 10u

Value

Parameters	Value
Capacitance Range	100pF to 100nF
Capacitance Tolerances	±15%
Operating Temperature Range	-55°C to 250°C
Storage Temperatures	-70°C to 265°C
Temperature Coefficient	<±1.5%, from -55°C to +250°C
Breakdown Voltage (BV)	11VDC, 30VDC
Capacitance Variation Vs. RVDC	0.1% /V (from 0 V to RVDC)
Equivalent Serial Inductor (ESL)	Max 100pH
Equivalent Serial Resistor (ESR)	Max 400mΩ
Insulation Resistance	50GΩ min @ 3V,25°C 10GΩ min @ 3V, 250°C
Ageing	Negligible, < 0.001% / 1000h
Reliability	FIT < 0.017 parts / billion hours
Capacitor Height	Max 400µm

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