

Embedded Silicon Capacitor

EMSC0303 10nF (50V)
935.142.620.510 (0V)

Key features

- Ultra Low Profile (100µm)
 - Temperature $\pm 0.5\%$ (-55 °C to +150 °C)
 - Voltage $< 0.1\%$ /V
 - Negligible capacitance loss through ageing
- High reliability (FIT < 0.017 parts / billion hours)
- Low leakage current down to 100 pA
- Low ESL and Low ESR
- Suitable with lead free reflow - soldering

Parameters	Value
Capacitance range	390pF to 4.7µF
Capacitance tolerances	$\pm 15\%$ (**)
Operating temperature range	-55 to 150 °C (°)
Storage temperatures	-70 to 165 °C
Temperature coefficient	$\pm 0.5\%$, from -55 to +150°C
Breakdown Voltage (BV)	30V, 11V
Capacitance variation versus RVDC	0.1 % /V (from 0 V to RVDC)
Equivalent Serial Inductor (ESL)	Max 100 pH
Equivalent Serial Resistor (ESR)	Max 0.1Ω
Insulation resistance	100GΩ min @ 3V, 25°C
Aging	Negligible, $< 0.001\%$ / 10000h
Reliability	FIT < 0.017 parts / billions hours
Capacitor height	Max 100µm (°)

Key applications

- All demanding applications, such as medical, aerospace, automotive industry
- High stability applications
- Decoupling / Filtering / Charge pump (i.e.: Pacemakers / defibrillators)
- Devices with battery operations
- Replacement of X7R and NP0
- Downsizing

The IPDiA technology features a capacitor integration capability (up to 250nF/mm²) which allows a **smaller case size** than existing solutions to answer high volume constraints. This technology also offers **high reliability**, up to 10 times better than alternative capacitor technologies, such as Tantalum or MLCC, and eliminates cracking phenomena.

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

			<u>Capacitance value</u>					
		10	15	22	33	39	47	68
<u>Unit</u>	10pF	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales	390pF/0202/30V 935 121 72C 339	470pF/0202/30V 935 121 72C 347	680pF/0202/30V 935 121 72C 368
	0.1nF	1nF/0202/30V 935 121 72C 410	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales
	1nF	10nF/0202/30V 935 121 72C 510	Contact IPDIA Sales	Contact IPDIA Sales	33nF/0404/30V 935 121 72F 533	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales
	10nF	100nF/0404/11V 935 121 42F 610 100nF/0605/30V 935 121 72G 610	Contact IPDIA Sales	220nF/0505/11V 935 121 42H 622	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales	Contact IPDIA Sales
	0.1µF	1µF/1208/11V 935 121 42S 710 1µF/1616/30V 935 121 72Y 710	Contact IPDIA Sales	2.2µF/1612/11V 935 121 42V 722	3.3µF/1616/11V 935 121 42Y 733	Contact IPDIA Sales	4.7µF/2016/11V 935 121 42X 747	

(°) 80µm thickness on request

(**) For extended temperature range (up to +250°C), see Embedded Xtreme Temperature Silicon Capacitor product (EXSC).

(***) other values on request