

ETSC

High temp. wire-bondable Si Capacitors up to 200°C



Rev 4.6

Key features

- Ultra High operating temperature up to 200°C
- Low profile (250 µm)
- High stability (temperature, voltage and aging)
- Low leakage current
- High reliability
- Dedicated to high temperature wire-bonding

(please refer to our Assembly Application Note for more details)

Key applications

- All applications up to 200°C, such as aerospace, downhole and automotive industries
- High reliability applications
- Replacement of X7R and COG dielectrics
- Decoupling / Filtering / Charge pump (i.e.: motor management, temperature sensors)
- Downsizing

Thanks to the unique Murata* Silicon capacitor technology, most of the problems encountered in demanding applications can be solved. The High Temperature Wirebond Silicon Capacitors are dedicated to applications where **reliability up to 200°C** is the main parameter. ETSC are the most appropriate solution for Chip On Board, Chip On Foil, Chip On Glass, Chip On Ceramic, flip chip and embedded applications. This technology features a capacitor integration capability (up to 250 nF/mm²) which offers capacitance value similar to X7R dielectric, but with better electrical performances than COG/NP0 dielectrics, up to 200°C.

ETSC provides the highest capacitor **stability** over the full -55°C/+200°C temperature range in the market with a **temperature coefficient equals to +60 ppm/K**. The Murata Silicon technology offers industry leading performances relative to **failure rate** with a FIT < 0.017 parts/billions hours. 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.

*Murata Integrated Passive Solutions



Electrical specifications

ETSC-xxx	High Temp. Wirebondable Si Capacitors from -55°C to 200°C			
Part number	Capacitance	BV	Case size	Thickness
935124730510-xxA	10 nF	30 V	0202	250 μm
935124421610-xxA	100 nF	11 V	0404	250 μm
935124733610-xxA	100 nF	30 V	0605	250 μm
935124422622-xxA	220 nF	11 V	0505	250 μm
935124424710-xxA	1 μF	11 V	1208	250 μm
935124736710-xxA	1 μF	30 V	1616	250 μm
935124425722-xxA	2.2 μF	11 V	1612	250 μm
935124426733-xxA	3.3 μF	11 V	1616	250 μm
935124427747-xxA	4.7 μF	11 V	2016	250 μm

Parameter	Value
Capacitance range	390 pF to 4.7 μF
Capacitance tolerance	±15 %(*)
Operating temperature range	-55°C to 200°C
Storage temperature	-70°C to 215°C(**)
Temperature coefficient	+60 ppm/K
Breakdown voltage (BV)	11 VDC or 30 VDC
Capacitance variation versus RVDC	0.1 %/V (from 0 to RVDC)
Insulation resistance	100 GΩ @ 3 V, @ 25°C, t>120s, for 100 nF
Aging	Negligible, < 0.001% / 1000 h
Reliability	FIT<0.017 parts / billions hours
Capacitor height	250 μm
(*) Other values on request (**) w/o packing	

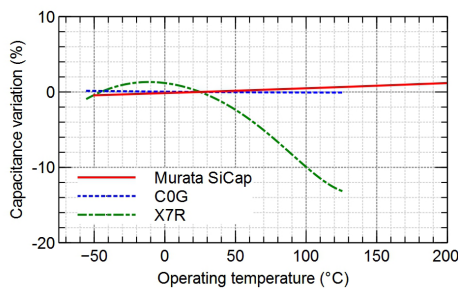


Fig. 1: Capacitance variation vs temperature (for ETSC and MLCC technologies)

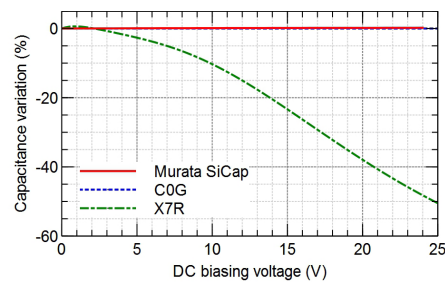
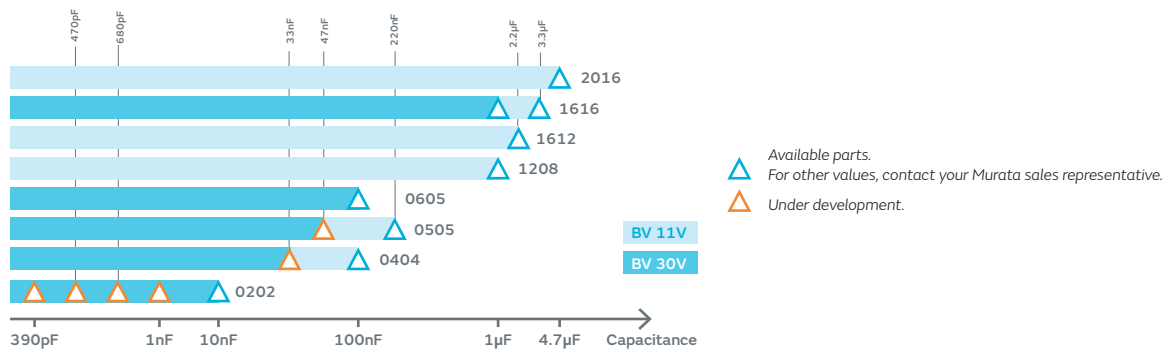


Fig.2: Capacitance variation vs DC biasing voltage @ BV30 (for ETSC and MLCC technologies)

Capacitance range

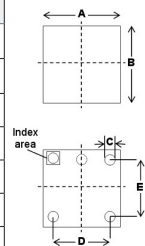


Termination

Pad finishing in Aluminum. Other finishing available such as nickel or gold.

Package Outline

	Case size		Pad dimensions (±0.05 μm)		
	A	B	c	d	e
0202	0.65	0.65	0.15	0.30	0.30
0404	1.07	1.07	0.15	0.72	0.72
0505	1.32	1.32	0.15	0.97	0.97
0605	1.59	1.32	0.15	1.22	1.22
1208	3.07	2.07	0.15	2.72	1.72
1612	4.07	3.07	0.15	3.72	2.72
1616	4.07	4.07	0.15	3.72	3.72
2016	5.07	4.07	0.15	4.72	3.72



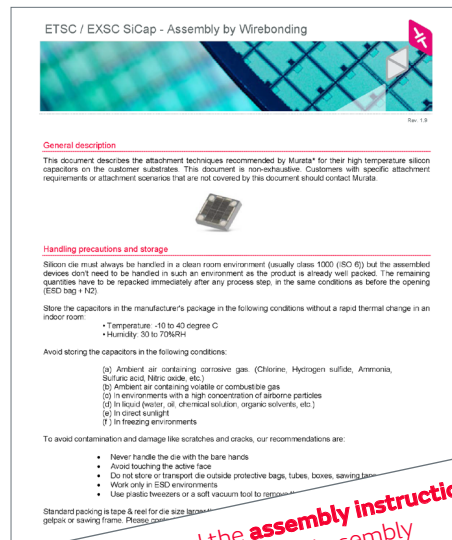
Packaging

Tape & reel, waffle pack or wafer delivery.



Assembly by Soldering

The attachment techniques recommended by Murata for the ETSC capacitors on the customers substrates are fully detailed in specific documents available on our website. To assure the correct use and proper functioning of Murata Silicon capacitors **please download the assembly instructions on www.ipdia.com/assembly and read them carefully.**



Please download the **assembly instructions**
on www.ipdia.com/assembly
and **read them carefully before use.**

在使用IPDIA电容之前请从
www.ipdia.com/assembly
网站上下载电容安装说明并仔细阅读。

For ETSC assembly instructions,
please go to :
www.ipdia.com/assembly and
download the pdf file called
**“ETSC / EXSC Capacitors 250
µm - Assembly by Wirebonding”**

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mis@murata.com