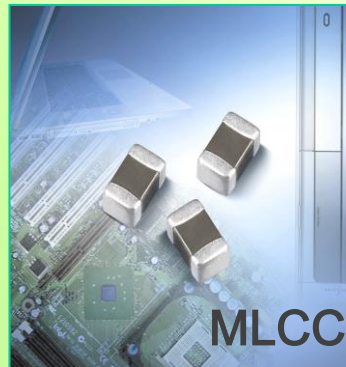




SAMSUNG ELECTRO-MECHANICS



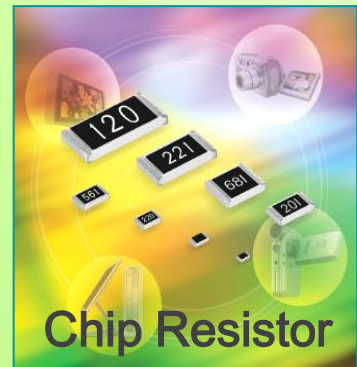
Tantalum



MLCC



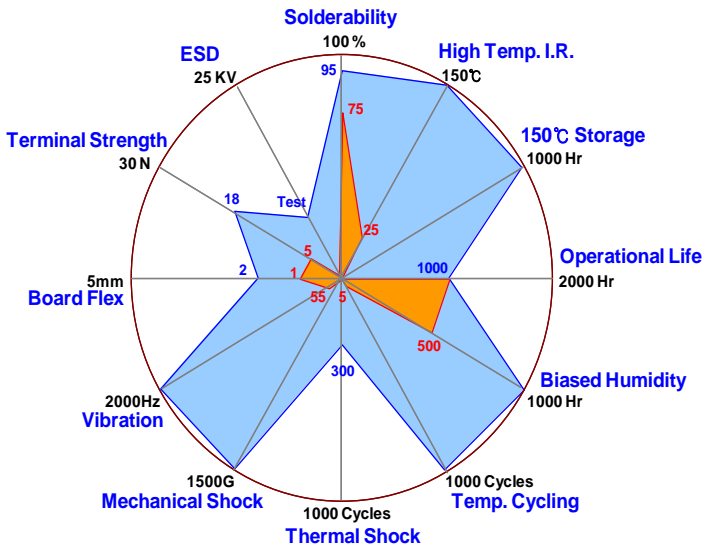
Chip Inductor
& Beads



Chip Resistor

PRODUCT GUIDE – PASSIVE

2011



Comparison between Automotive MLCC and General type of MLCC

Automotive grade (AEC Q200)
 General grade

The global automotive industry's trend to use more electronic applications under harsh environmental conditions.

Required Samsung to provide an Automotive MLCC with extended capability to withstand mechanical flexure and temperature cycles.

The new **Premium** MLCC Series from Samsung provides Open Mode* and Soft Termination Technology to minimize the risk of mechanical cracking and malfunction during their expected lifetime.

All **Premium** MLCCs are AEC-Q200 specified and highly suited for automotive and industrial applications.

Size (mm)	Vr	COG Series						
		pF			nF			
		100	220	470	1	2,2	4,7	10
0402 (1005)	50	█	█					
	100	█						
0603 (1608)	50	█	█	█	█			
	100	█	█	█	█			
0805 (2012)	50	█	█	█	█	█	█	█
	100	█	█	█	█	█	█	█
1206 (3216)	50							
	100							

Order code

CL31B225KBH4PNE

P= AEC-Q200

4= Soft Termination

5= Soft Termination & open mode*

Size (mm)	Thick. Size (mm)	Vr	X7R Series						
			nF					uF	
			10	22	47	100	220	470	1
0603 (1608)	0,8	10	█	█	█	█	█		
	0,8	16	█	█	█	█			
	0,8	25	█	█	█	█			
	0,8	50	█	█	█	█			
	0,8	100	█	█	█	█			
0805 (2012)	1,25	10	█	█	█	█	█		
	0,85	16	█	█	█	█			
	1,25	25	█	█	█	█			
	0,6	50	█	█	█	█			
	0,85	100	█	█	█	█			
	1,25	10	█	█	█	█	█		
	0,6	16	█	█	█	█			
	1,25	25	█	█	█	█			
	0,85	50	█	█	█	█			
	1,25	100	█	█	█	█			
1206 (3216)	1,6	10	█	█	█	█	█	█	
	1,15	16	█	█	█	█			
	1,6	25	█	█	█	█			
	0,85	50	█	█	█	█			
	1,15	100	█	█	█	█			
	1,6	10	█	█	█	█	█	█	
	0,85	16	█	█	█	█			
	1,15	25	█	█	█	█			
	1,6	50	█	█	█	█			
	1,15	100	█	█	█	█			

Features

- Soft termination for all X7R MLCC
- Achieves typical 5 mm PCB bending
- According to JEDEC J-STD-020-D

Applications

- Power train ECU
- Battery line circuit
- Switch mode power supply
- Network applications & Base stations



Samsung Electro-Mechanics introduces the world's first 10uF 50V X7R MLCC in the case size 1210.

Samsung, with our advanced process technology and the use of our latest ceramic powder, is proud to be the first company who can fulfil the industry's demand for a full rated 10uF 50V product usable up to 125°C in a 1210 package.

This product is a logical alternative to the standard 4.7uF part used on input filters, which enables engineers to downsize power supply units.

The global electronic market's trend to replace Tantalum capacitors is still ongoing. Samsung provides with this MLCC an extended range in which Tantalum Capacitors can be replaced.

Therefore one of Samsung Electro-Mechanics main concern for new MLCC products is superior DC-Bias performance.

In accordance to those requirements we are proud to announce the new 10uF 50V X7R 1210 and the 2,2uF 100V X7R 1206 MLCC.

Order code

CL32B106KBJNFNE

CL31B225KCHNFNE

F= Power application

Features

- Excellent DC Bias
- TCC X7R
- High ripple current
- High reliability

Applications

- Power supply units & SMPS
- Automation technology
- Drive solutions
- Elevators

Size (mm)	Vr	Capacitance (uF)									
		0,1	0,22	0,47	1	2,2	4,7	10	22	47	100
0402 (1005)	6,3			X7S							
	10			X7S							
	16										
0603 (1608)	6,3										
	10										
	16										
	25										
	50										
0805 (2012)	6,3										
	10										
	16										
	25						X7S				
	35										
	50										
1206 (3216)	6,3										
	10										
	16										
	25										
	35										
	50										
1210 (3225)	6,3										
	10										
	16										
	25										
	50										



Samsung Electro-Mechanics offers a focused range of small case sized SMD tantalum capacitors serving the markets demand for low ESR and space reduction.

The Tantalum capacitors offer stable capacitance level for the lower frequency range up to 10kHz without any capacitance loss. Compared to MLCCs, which have a capacitance loss by applying the full rated voltage to them.

Using different technologies like face down or frameless, Samsung is able to manufacture Tantalum Caps down to 0402 (U-case size).

Typical capacitance range for those small tantalum capacitors start from 1uF up to 47uF.

Since 2010 Samsung additionally offers Polymer Tantalum Capacitors with Ultra-low ESR values.

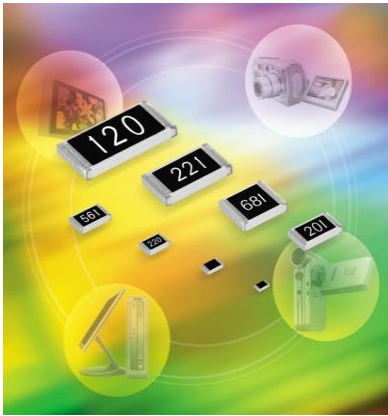
Features

- Suitable for reflow and wave soldering
- Meets EU-RoHS
- No DC bias effect

Applications

- Industrial applications
- Hi-Fi & Audio equipment
- Set top box
- CCTV
- Alarm systems

Part number	Dimension	Rated voltage	Capacitance	ESR (max. Ω)	Temperature range
TCSCF0J226MKAR	1.6x0.85x0.8 mm	6,3V	22uF	6	-55°C~+125°C
TCSCF1A336MPAR	2.0x1.25x1.1 mm	10V	33uF	4	-55°C~+125°C
TCSCF1A476MPAR	2.0x1.25x1.1 mm	10V	47uF	3	-55°C~+125°C
TCSCF0J475MUAR	1.0x0.5x0.6 mm	6,3V	4,7uF	20	-55°C~+125°C
TCSCF0J225MUAR	1.0x0.5x0.6 mm	6,3V	2,2uF	15	-55°C~+125°C
TCSCF0J105MIAR	1.0x0.5x0.55 mm	6,3V	1uF	15	-55°C~+125°C
TCPCL0J157MLAR0200	3.5x2.8x1.5 mm	6,3V	150uF	0,2	-55°C~+125°C



Samsung Electro-Mechanics offers a competitive range of SMD resistor for voltage derating and current controlling

Thick Film Chip resistors are these days a pure commodity product, SEMCO can offer here a competitive range in the E24 series with preferred 5% tolerance.

Samsung's SMD Resistors meet the main market requirements like IEC 60115-1(4.19/4.25.3/4.18/etc.).

Furthermore Samsung Electro-Mechanics production quantity for chip resistor arrays is one of the biggest in the world.

Features

- Suitable for reflow & flow soldering
- Meets RoHS regulation
- High reliability (3mm bending)

Order code

RC 1005 J 101 CS
 RC 1005 = Case size J= 5% (preferred)
 101=resistance code CS=taping

Applications

- Industrial applications → Set top box → Voltage derating → Current controlling

Chip Inductors



Samsung Electro-Mechanics has a wide range of Power Inductors, Multilayer Inductors and Chip Beads suitable for a frequency range up to GHz band.

Chip Beads from Samsung are available for applications like signal line, high speed signal and power line. A impedance range from 10 to 2500Ω is available for the case sizes 0201 to 1812.

Furthermore Samsung is a technology leader for Multilayer Power Inductors for the inductance range 1~10uH, especially used in high switching frequency Power ICs.

We are leading the trend to lower power consumption by reducing the Rdc of the Inductor. Beside Rdc, one of the key parameters of the Power Inductor is the superb rated current.

As of today Multilayer Power Inductors are able to achieve 2A and are therefore suitable for Buck-Boost & Boost converters.

Features

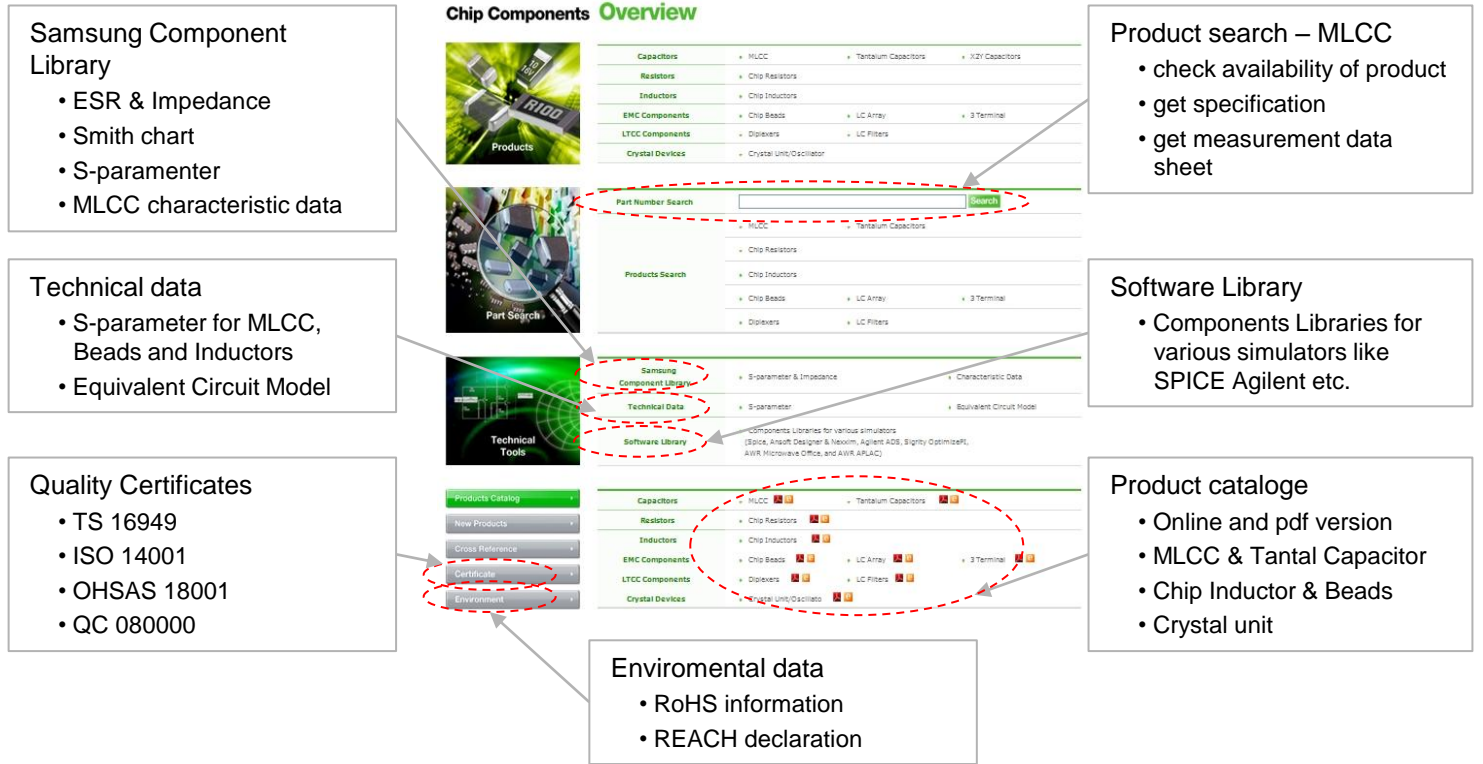
- Excellent solderability suitable for flow or reflow
- Free of all RoHS-regulated substances
- Monolithic structure for high reliability

Order code

CIM05U601NC – Chip Beads
CIH10T1N0SNC – High frequency Inductor
CIG22L1R0MNE – Power Inductor

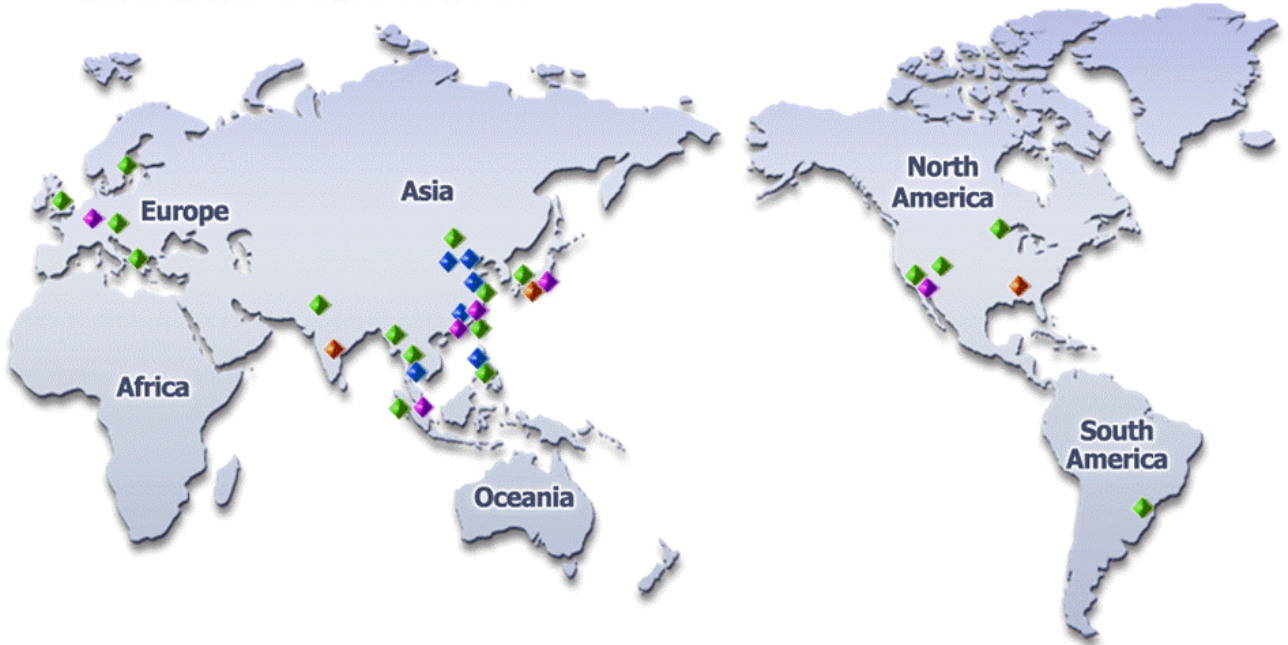
Applications

- Industrial applications → Set top box → DC/DC converter → RS232 / USB / LVDS



visit – WWW.SEMLCR.COM – to get more information

Global Network



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Sales subsidiaries | 6
Branch offices | 17
R&D office | 3

All information indicated in this brochure are as of November 2010 and all specifications and designs are subject to change without notification