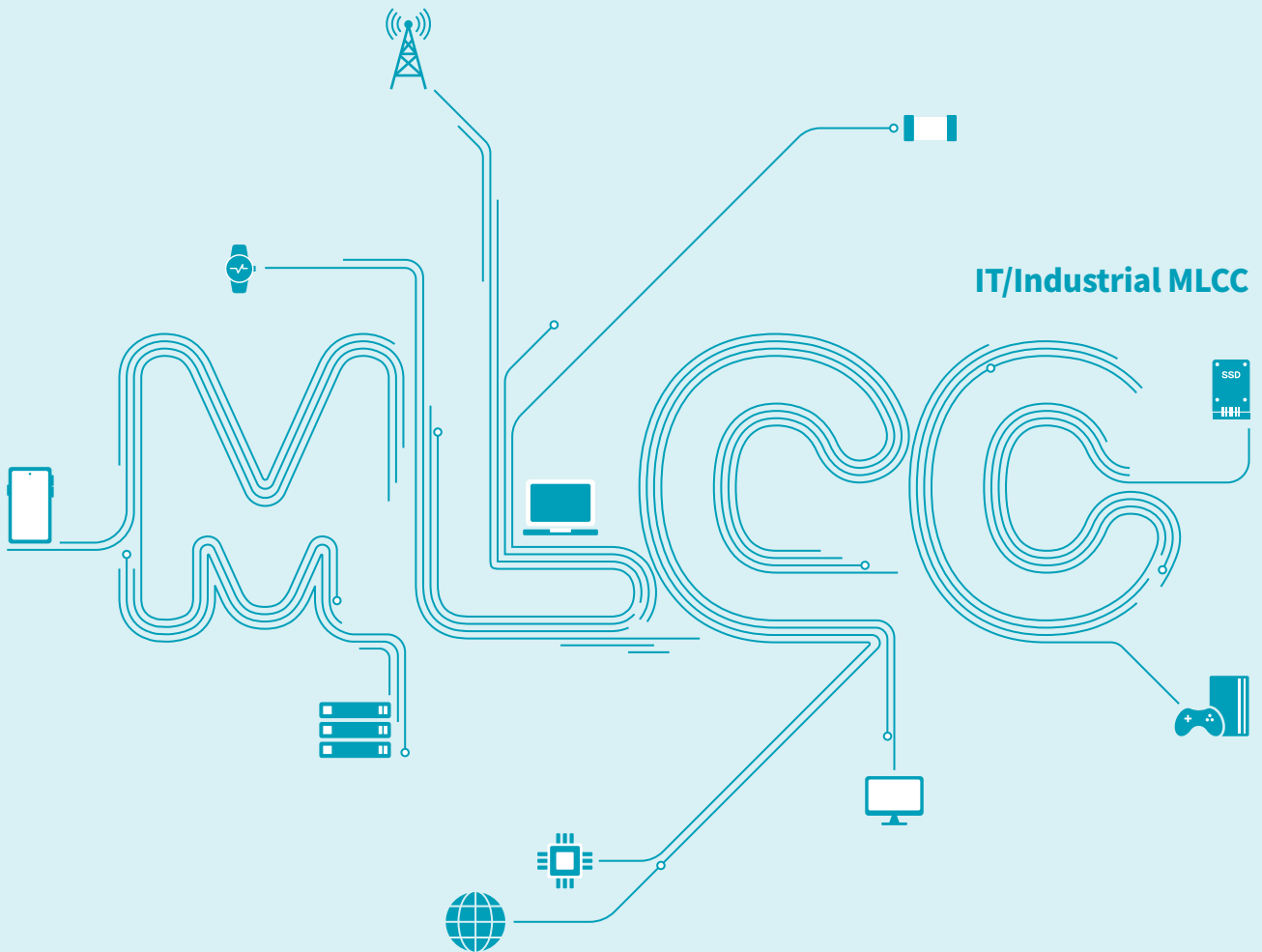


PRODUCT LINEUP OF IT/INDUSTRIAL MLCC

August 2024



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Normal Capacitors_Standard

Normal Standard

Features

MLCC for Wide Range Implementation

A general MLCC temporarily charges and removes noise in electronic circuits and is the most widely available chip-type capacitor. The product line allows for realization of various sizes and a wide range of capacitance. It also has the structural capacity to mount chips on a PCB at a high speed.

- **Wide Selection of Size & Wide Capacitance Range**

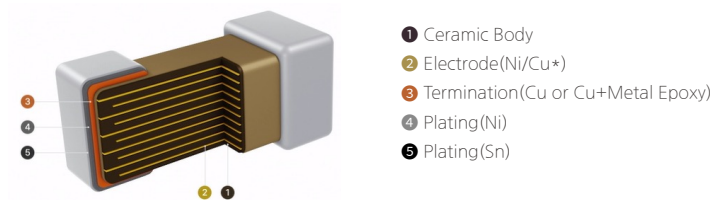
Product that can be Implemented in a Variety of Sizes and Over a Wide Range of Capacitance

- **Excellent DC Bias Characteristics**

Capacitor with Excellent DC Bias Characteristics

- **High Speed Automatic Chip Placement on PCBs**

Product that Enables High-Speed Mounting of Chips on PCBs



* Cu internal electrodes are only applicable to select products.

Application

- Computer, Solid State Drive, Display, Mobile Phone, Tablet, Network, Server, Game Console, DC-DC Converter

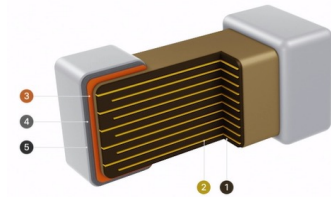
Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance									Capacitance Range		
				pF				nF			uF				
				0.1	1	10	100	1	10	100	1	10		100	
Normal	COG (125°C)	008004/0201	16	█										0.2pF - 56pF	
			25	█										0.2pF - 56pF	
		01005/0402	6.3												100pF - 180pF
			10												56pF - 150pF
			16												8.2pF - 180pF
			25												1pF - 220pF
		0201/0603	50												10pF - 100pF
			25												0.2pF - 100pF
			50												1pF - 100pF
		0402/1005	100												47pF - 100pF
			16												100pF - 1nF
			25												20pF - 1nF
		0603/1608	50												1pF - 4.7nF
			100												12pF - 1nF
			16												1nF - 2.2nF
			25												560pF - 4.7nF
			50												4.7pF - 10nF
		0805/2012	100												10pF - 5nF
			200												220pF - 220pF
			250												470pF - 470pF
25													3.3nF - 10nF		
50													10pF - 15nF		
0805/2012	100												12pF - 3.9nF		
	200												18pF - 1nF		
	250												1nF - 10nF		

Normal Capacitors_High Level I

Normal High Level I

Features

- A High Level I MLCC is a chip-type capacitor suitable for industrial applications, with greater reliability than a general MLCC
- It has improved the moisture resistance characteristics.
- In the outgoing inspection, proceed with the bending strength evaluation strengthen.



- 1 Ceramic Body
- 2 Electrode(Ni/Cu*)
- 3 Termination(Cu or Cu+Metal Epoxy)
- 4 Plating(Ni)
- 5 Plating(Sn)

High Level I

Improved Reliability
 (65°C, 90%RH, 1Vr, 500H)

High Level II

Reinforced Reliability
 (85°C, 85%RH, 1Vr, 1000H)

* Cu internal electrodes are only applicable to select products.

Application

- Server, Network, Base station, Solar Inverter, DC-DC Converter

Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance									Capacitance Range			
				pF			nF			uF						
				0.1	1	10	100	1	10	100	1	10		100		
High Level I	COG (125°C)	008004/0201	16	█	█	█									0.2pF - 10pF	
			25	█	█	█									0.2pF - 10pF	
		01005/0402	6.3				█									100pF - 100pF
			16			█	█									10pF - 100pF
			25			█	█									10pF - 100pF
		0201/0603	50				█									100pF - 100pF
			25	█	█	█	█									0.2pF - 100pF
			50	█	█	█	█									0.5pF - 100pF
		0402/1005	100			█	█									100pF - 100pF
			16			█	█	█								27pF - 1nF
			25	█	█	█	█									0.1pF - 1nF
		0603/1608	50	█	█	█	█									0.1pF - 1nF
			100			█	█									12pF - 220pF
			16					█								1nF - 2.2nF
			25					█	█							560pF - 10nF
			50	█	█	█	█									1pF - 5.6nF
		0805/2012	100	█	█	█	█									1.2pF - 4.7nF
			200				█									220pF - 220pF
			250					█								470pF - 470pF
			25						█	█						3.3nF - 10nF
50							█	█						10pF - 15nF		
0805/2012	100						█	█						12pF - 10nF		
	200						█	█						18pF - 1nF		
	250						█	█						10pF - 2.2nF		
	630						█	█						10pF - 470pF		

Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance										Capacitance Range				
				pF			nF			uF								
				0.1	1	10	100	1	10	100	1	10	100					
High Level I	X5R (85°C)	1206/3216	4													100uF - 100uF		
			6.3														4.7uF - 100uF	
			10														1uF - 100uF	
			16														680nF - 47uF	
			25														1uF - 22uF	
		35														4.7uF - 4.7uF		
		50														1uF - 10uF		
		1210/3225	6.3														22uF - 220uF	
			10														10uF - 100uF	
			16														4.7uF - 47uF	
	25															4.7uF - 22uF		
	35															4.7uF - 10uF		
	X6S (105°C)	01005/0402	6.3														10nF - 10nF	
			4														15nF - 1uF	
		0201/0603	6.3															15nF - 1uF
			10															100nF - 1uF
			16															100nF - 100nF
			25															100nF - 100nF
		0402/1005	2.5															2.2uF - 22uF
			4															100nF - 22uF
			6.3															150nF - 10uF
			10															470nF - 2.2uF
			16															68nF - 2.2uF
			25															220nF - 220nF
		0603/1608	2.5															4.7uF - 47uF
			4															1uF - 47uF
			6.3															1uF - 22uF
			10															1uF - 10uF
			16															470nF - 10uF
			25															470nF - 4.7uF
			35															2.2uF - 2.2uF
		50															1uF - 1uF	
		0805/2012	2.5															22uF - 100uF
			4															10uF - 100uF
			6.3															4.7uF - 47uF
			10															4.7uF - 22uF
			16															1uF - 22uF
			25															4.7uF - 22uF
			35															1uF - 1uF
		50															4.7uF - 4.7uF	
1206/3216		4															47uF - 100uF	
		6.3															22uF - 100uF	
	10															22uF - 22uF		
	16															4.7uF - 22uF		
	25															10uF - 22uF		
1210/3225	4															100uF - 100uF		
	6.3															47uF - 100uF		
	10															22uF - 47uF		
	16															47uF - 47uF		
	25															10uF - 10uF		
35															10uF - 10uF			

Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance										Capacitance Range				
				pF			nF			uF								
				0.1	1	10	100	1	10	100	1	10	100					
High Level I	X6T (105°C)	0201/0603	4													2.2uF - 2.2uF		
		0402/1005	4														470nF - 2.2uF	
			16														2.2uF - 2.2uF	
		0805/2012	2.5															47uF - 47uF
			4															47uF - 47uF
		1206/3216	4															47uF - 100uF
			6.3															100uF - 100uF
		X7R (125°C)	01005/0402	10														100pF - 1nF
				16														330pF - 330pF
			0201/0603	6.3														
	10																	330pF - 100nF
	16																	100pF - 10nF
	0402/1005		25															100pF - 10nF
			4															1uF - 1uF
			6.3															1nF - 1uF
			10															10nF - 470nF
			16															820pF - 220nF
	0603/1608	25															220pF - 220nF	
		50															150pF - 100nF	
		6.3															220nF - 4.7uF	
		10															5.6nF - 2.2uF	
		16															5.6nF - 1uF	
	0805/2012	25															4.7nF - 1uF	
		35															470nF - 470nF	
		50															100pF - 1uF	
		100															220pF - 100nF	
		6.3															2.2uF - 10uF	
	1206/3216	10															220nF - 10uF	
		16															220nF - 10uF	
		25															220nF - 10uF	
		35															10uF - 10uF	
		50															10uF - 10uF	
	X7R (125°C)	0805/2012	100														220pF - 10uF	
			200														220pF - 2.2uF	
			250														220pF - 470nF	
			1000														150pF - 10nF	
			2000														1nF - 10nF	
		1206/3216	6.3															1nF - 10nF
			10															22uF - 22uF
			16															1uF - 22uF
25																	220nF - 10uF	
35																	220nF - 10uF	
X7R (125°C)	1206/3216	50														10uF - 10uF		
		100														220pF - 10uF		
		200														220pF - 2.2uF		
		250														470pF - 100nF		
		350														33nF - 100nF		
	0805/2012	500														33nF - 33nF		
		630														220pF - 33nF		
		1000														330pF - 33nF		
		2000														680pF - 10nF		
		2000														1nF - 1nF		

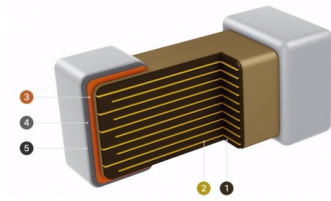
Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance									Capacitance Range					
				pF			nF			uF								
				0.1	1	10	100	1	10	100	1	10		100				
High Level I	X7R (125°C)	1210/3225	6.3												47uF - 47uF			
			10													10uF - 47uF		
			16													2.2uF - 22uF		
			25													1uF - 22uF		
			35													10uF - 10uF		
			50													150nF - 10uF		
			100													220nF - 4.7uF		
			200														22nF - 22nF	
			250														100nF - 100nF	
			500														10nF - 22nF	
			630														22nF - 47nF	
			1000														22nF - 22nF	
	2000														1nF - 1nF			
	X7R(S) (125°C)	0603/1608	0805/2012	6.3												10uF - 10uF		
				10													10uF - 10uF	
	X7S (125°C)	0201/0603		6.3												100nF - 100nF		
				10												100nF - 100nF		
				16													100nF - 100nF	
		0402/1005		6.3													1uF - 1uF	
				10													1uF - 1uF	
				16													1uF - 1uF	
				25													1uF - 1uF	
		0603/1608		6.3													1uF - 1uF	
				10													1uF - 1uF	
				16													680nF - 4.7uF	
				25													2.2uF - 2.2uF	
		0805/2012		16													4.7uF - 10uF	
				25													2.2uF - 10uF	
		1206/3216		100													1uF - 1uF	
				4														47uF - 47uF
		1210/3225		25														10uF - 10uF
				4														100uF - 100uF
				6.3														100uF - 100uF
				25														22uF - 22uF
				50														10uF - 10uF
		X7T (125°C)	01005/0402		100													4.7uF - 10uF
					2.5													
			0201/0603		6.3													220nF - 220nF
					10													
	0402/1005			2.5														100nF - 220nF
				4														10uF - 10uF
				10														2.2uF - 2.2uF
0603/1608			16														2.2uF - 2.2uF	
			2.5															47uF - 47uF
0805/2012			6.3														4.7uF - 10uF	
			10															1uF - 10uF
1206/3216		6.3															22uF - 22uF	
		10															22uF - 22uF	
		35															10uF - 10uF	
1210/3225		6.3														22uF - 47uF		

Normal Capacitors_High Level II

Normal High Level II

Features

- A High Level II MLCC is a chip-type capacitor designed to be suitable for outdoor industrial applications.
- Reliability for moisture resistance and temperature change has been strengthened, and the bending strength characteristic is excellent.



- 1 Ceramic Body
- 2 Electrode (Ni/Cu*)
- 3 Termination (Cu or Cu+Metal Epoxy)
- 4 Plating (Ni)
- 5 Plating (Sn)

High Level I

Improved Reliability
(65°C, 90%RH, 1Vr, 500H)

High Level II

Reinforced Reliability
(85°C, 85%RH, 1Vr, 1000H)

* Cu internal electrodes are only applicable to select products.

Application

- Base station, Solar Inverter, DC-DC Converter

Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance									Capacitance Range				
				pF			nF			uF							
				0.1	1	10	100	1	10	100	1	10		100			
High Level II	COG (125°C)	0402/1005	50												3.3pF - 1nF		
			25													1nF - 6.8nF	
		0603/1608	50													22pF - 3.3nF	
			100													100pF - 4.7nF	
		1206/3216	50													47nF - 100nF	
			630													10nF - 10nF	
		1210/3225	630													680pF - 1nF	
			1000													22nF - 33nF	
	X5R (85°C)	0603/1608	6.3													4.7uF - 4.7uF	
			10													1uF - 10uF	
			16														1uF - 1uF
			25														1uF - 1uF
		0805/2012	6.3														22uF - 22uF
			6.3														220uF - 220uF
	X6S (105°C)	0805/2012	4													47uF - 47uF	
			25													4.7uF - 4.7uF	
		1206/3216	6.3													100uF - 100uF	
			2.5													330uF - 330uF	
	X7R (125°C)	0201/0603	10													100nF - 100nF	
			25													100nF - 100nF	
50															4.7nF - 100nF		
0603/1608		10													1uF - 2.2uF		
		16													1uF - 1uF		
		25													8.2nF - 1uF		
		50													270pF - 47nF		
		100													100nF - 100nF		

High Bending Strength Capacitors

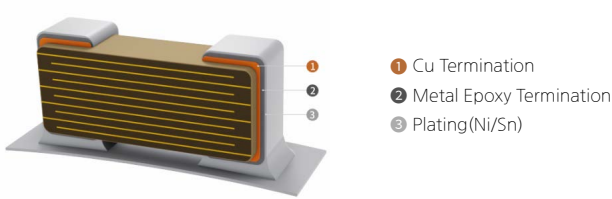
High Bending Strength

Features

MLCC with a High Tolerance to Mechanical Stress

Thermal and mechanical stress on the chip can be reduced by the ductile properties of soft termination, which is resistant to stresses caused by board bending.

- **Relax The Applied External Stress**
Products that can Reduce Thermal and Mechanical Stress on the Chip
- **Excellent Bending Strength**



Application

- Mobile Phone, Computer, Solid State Drive, Tablet, Display, SMPS, DC-DC Converter

Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance									Capacitance Range						
				pF			nF			uF									
				0.1	1	10	100	1	10	100	1	10		100					
High Level I	C0G (125°C)	1206/3216	630														220pF - 1nF		
			1000															15pF - 470pF	
			1000																10nF - 10nF
High Level I Soft Termination	X7R (125°C)	1210/3225	630														47nF - 47nF		
			16															47uF - 47uF	
		0603/1608	50																100nF - 100nF
			250																1nF - 1nF
		1206/3216	25																4.7uF - 10uF
			250																100nF - 100nF
			630																1nF - 10nF
			1000																1nF - 10nF
		1210/3225	50																4.7uF - 10uF
			100																2.2uF - 2.2uF
High Level II	X7R (125°C)	1206/3216	630														33nF - 47nF		
			630															100nF - 100nF	
High Level II	X7S (125°C)	1206/3216	16														22uF - 22uF		
			25															22uF - 22uF	
			100															10uF - 10uF	

Category	TCC	Size Code (inch/mm)	Rated Voltage (Vdc)	Capacitance												Capacitance Range		
				pF				nF				uF						
				0.1	1	10	100	1	10	100	1	10	100					
High Level II Soft Termination	X7R (125°C)	0402/1005	10														220nF - 470nF	
			16														22nF - 100nF	
			50															1nF - 15nF
		0603/1608	25															100nF - 1uF
			50															1nF - 1uF
			100															1nF - 1nF
		0805/2012	25															1uF - 2.2uF
			50															4.7uF - 4.7uF
			100															10nF - 1uF
	1206/3216	250															22nF - 22nF	
		6.3															22uF - 22uF	
		10															10uF - 22uF	
		16															10uF - 10uF	
		100															1uF - 2.2uF	
	1210/3225	630															22nF - 22nF	
		1000															10nF - 10nF	
		50															10uF - 10uF	
		100															2.2uF - 4.7uF	
	X7S (125°C)	0805/2012	250														220nF - 220nF	
			1000														22nF - 22nF	
100																10uF - 10uF		
X8L (150°C)	1210/3225	100														1uF - 1uF		
		100														2.2uF - 4.7uF		
Normal	X5R(85°C)	0603/1608	100													4.7uF - 10uF		
			100														4.7uF - 4.7uF	
Soft Termination	X5R(85°C)	0201/0603	10													100nF - 1uF		
			10														4.7uF - 22uF	
		0402/1005	6.3														2.2uF - 10uF	
			10															10uF - 10uF
	0603/1608	6.3															22uF - 22uF	
		10															10uF - 10uF	
X7R (125°C)	1206/3216	35														10uF - 10uF		

SAMSUNG
ELECTRO-MECHANICS



Product Search (samsungsem.com)