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Multilayer Ceramic Chip Capacitor

Features

- Wide capacitance range, extremely compost size
- Low inductance of capacitor for high frequency application
- Excellent solderability and resistance to soldering heat, suitable for flow and reflow soldering
- Adaptable to high-speed surface mount assembly
- Conform to EIAJ-RC3402, and also compatible with EIA-RS198 and IEC PUB. 384-10

RS PRO Multilayer Ceramic Chip Capacitor

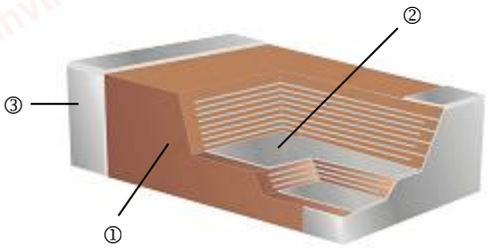
RS Stock No.: 2710974, 2710975, 2710966, 2710967, 2710970, 2710971, 2710968, 2710969, 2710972, 2710973



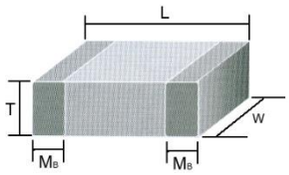
RS PRO is the own brand of RS. The RS PRO Seal of Approval is your assurance of professional quality, a guarantee that every part is rigorously tested, inspected, and audited against demanding standards. Making RS PRO the Smart Choice for our customers.

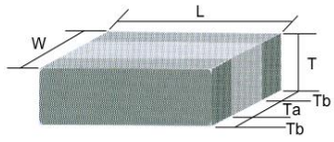
Multilayer Ceramic Chip Capacitor

Construction



□	Ceramic Material	□	Termination: NPO: Ag/Ni/Sn dielectric X7R, Y5V, X5R: Cu/Ni/Sn dielectric
□	Inner Electrodes		





Dimensions

Type	Size (Inch)	L	W	T / Symbol		M_B	Packaging (7" Reel)	
							Paper tape	Plastic tape
02	0402	1.00±0.05	0.50±0.05	0.50±0.05	N	0.25 +0.05 / -0.10	10K	-
				0.50+0.02/-0.05	Q			
		1.00±0.20	0.50±0.20	0.50±0.20	E			
03	0603	1.60±0.10	0.80±0.10	0.80±010	S	0.40±0.15	4K	-
		1.60+0.15/-0.10	0.80+0.15/-0.10	0.50±010	H			
				0.80+0.15 / -0.10	X			
		1.60±0.20[#1]	0.80±0.20[#1]	0.80±020[#1]				
05	0805	2.00±0.15	1.25±0.10	0.50±0.10	H	0.50±0.20	4K	-
				0.60±0.15	A			-
				0.80±0.10	B			-
				1.25±0.10	D			3K
		2.00±0.20	1.25±0.20	0.85±0.10	T		4K	-
				1.25±0.20	I			3K

MC	03	J	T	N	250	3R9
Product Type	Dimensions (L×W)	Capacitance Tolerance	Packaging	Dielectric	Voltage (VDCW)	Capacitance

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MC : General; Ultra-small	02: 0402 03: 0603	K: ±10% M: ±20%	T: Taping	B: X7R X: X5R	6V3: 6.3V 250: 25V 500: 50V	3R9: 3.9pF 150: 15pF 181: 180pF 225: 2.2µF 476: 47µF 107: 100µF

General Capacitance & Voltage

Capacitance & Voltage (X7R)

Dielectric		X7R		
EIA	Size	0402	0603	0805
Code	VDCW	50V	50V	50V
104	0.10µF	N	X	B
105	1.0µF		X	I
225	2.2			I

Capacitance & Voltage (X5R)

Dielectric		X5R	
EIA	Size	0603	0805
Code	VDCW	25V	10V
106	10µF	X*	I
476	47		I*

■The letter in cell with "*" mark is expressed product not in 10% (code "K") tolerance

Multilayer Ceramic Chip Capacitor

Environmental Characteristics

Size	0402, 0603, 0805	
Dielectric	X7R	X5R
Capacitance*	100pF~47μF	27nF~100μF
Capacitance tolerance	J (± 5%) K (±10%)	
Rated voltage (VDCW)	6.3V, 10V, 16V, 25V, 35V, 50V	
Q*	Note 1	
Insulation resistance at Ur**	≧10GΩ or R×C≧500Ω×F Whichever is less	
Operating temperature	-55 to +125°C	-55 to 85°C
Capacitance change	±15%	
Termination	Ni/Sn (lead-free termination)	

■X7R: Apply 1.0±0.2Vrms, 1.0KHz±10% at the condition of 25°C ambient temperature

Note 1:

X7R / X5R

Rated Vol.	D.F.	Exception of D.F.	
≧100V	≦2.5%	≦3%	1206≧0.47μF
		≦5%	0805＞0.1μF;06030.068μF 1206>1μF;1210≧2.2μF
		≦10%	0805＞0.22μF;1210≧3.3μF
50V	≦2.5%	≦3%	0201(50V); 0603≧0.047μF; 0805≧0.18μF;1206≧0.47μF
		≦5%	0201≧0.01uF; 1210≧4.7μF
		≦10%	0402≧0.1μF;0603>0.1μF; 0805≧1μF;1206≧2.2μF; 1210≧10μF
35V	≦3.5%	≦10%	0603≧1μF;0805≥2.2μF;1206≧2.2μF;1210≧10μF
25V	≦3.5%	≦5%	0201≧0.01μF;0805≧1μF; 1210≧10μF
		≦7%	0603≧0.33μF; 1206≧4.7μF
		≦10%	0201≧0.1μF;0402≧0.10μF;0603≧0.47μF; 0805≧2.2μF; 1206≧6.8μF ; 1210≧22μF
		≦12.5%	0402≧0.47μF
16V	≦3.5%	≦5%	0201≧0.01μF;0402≧0.033μF;0603≧0.15μF; 0805≧0.68μF;1206≧2.2μF;1210≧4.7μF
		≦10%	0201≧0.1uF(0201/X7R≧0.022μF); 0402≧ 0.22uF; 0603≧; 1206≧4.7μF; 1210≧22μF
10V	≦5.0%	≦10%	0201≧0.012μF;0402≧0.33μF(0402/X7R≧0.22μF); 0603≧0.33μF; 0805≧2.2μF;1206≧2.2μF;1210≧22μF
		≦15%	0201≧0.1μF
6.3V	≦10%	≦15%	0201≧0.1μF;0402≧1μF;0603≧10μF;0805≧4.7μF; 1206≧47μF :1210≧100μF
		≦20%	0402≧2.2μF

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Electrical data

Dielectric	X7R
Size	0603, 0805
Capacitance*	100pF~1.0μF
Capacitance tolerance	K (±10%)
	M (±20%)
Rated voltage (VDCW)	200V to 3KV
DF/Q	DF≦2.5%
Insulation resistance at Ur	Ur=200~630V:≧10GΩ or R×C≧100Ω-F Whichever is smaller
	Ur=1000~3000V: ≧10GΩ
Dielectric Strength	200~300V: ≧2×VDCW
	500~999V: ≧1.5×VDCW
	1000~3000V: ≧1.2×VDCW
Operating temperature	-55 to +125°C
Capacitance change	±15%
Termination	Ni/Sn (lead-free termination)

■X7R, X5R: Apply 1.0±0.2Vrms, 1.0KHz±10% at the condition of 25°C ambient temperature

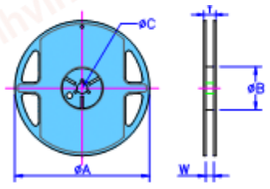
Packaging

Packaging Quantity

Type	Thickness / Symbol		Packaging (7" Reel)	
			Paper tape	Plastic tape
0402	0.50±0.05	N	10K	-
	0.5+0.02/-0.05	Q	10K	-
	0.50±0.20	E	10K	-
0603	0.50±0.10	H	4K	-
	0.80±0.10	S	4K	-
	0.80 +0.15 / -0.10	X	4K	-
0805	0.50±0.10	H	4K	-
	0.60±0.10	A	4K	-
	0.80±0.10	B	4K	-
	0.85±0.10	T	4K	-
	1.25±0.10	D	-	3K
	1.25±0.20	I	-	3K

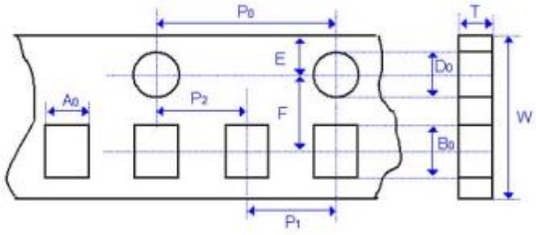
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Tape and Reel



Type	Chip Size		
	0402	0603	0805
ΦC	13.0±1.0	13.0±1.0	13.0±1.0
W	9.0±1.0	9.0±1.0	9.0±1.0
ΦA	178±1.0(7")	178±1.0(7")	178±1.0(7")
ΦB	60.5±1.0(7")	60.5±1.0(7")	60.5±1.0(7")

Plastic Tape Size Specification



Type	0402		0603			0805			
Thickness	N	E	S	H	X	A	H	B	T
A_0	0.70±0.20		1.05±0.30			1.50±0.20		1.50±0.20	
B_0	1.20±0.20		1.80±0.30			2.30±0.20		2.30±0.20	
T	≦0.80		≦1.20			≦1.15		≦1.30	
W	8.00±0.10		8.00±0.10			8.00±0.10		8.00±0.10	
P_0	4.00±0.10		4.00±0.10			4.00±0.10		4.00±0.10	
P_1	2.00±0.05		4.00±0.10			4.00±0.10		4.00±0.10	
P_2	2.00±0.05		2.00±0.05			2.00±0.05		2.00±0.05	
D_0	1.55±0.05		1.55±0.05			1.55±0.05		1.55±0.05	
E	1.75±0.05		1.75±0.05			1.75±0.05		1.75±0.05	
F	3.50±0.05		3.50±0.05			3.50±0.05		3.50±0.05	

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Similar Products

MPN	RS Article Number		
	SSM	MPQ	P Part