

Safety Chip Capacitors



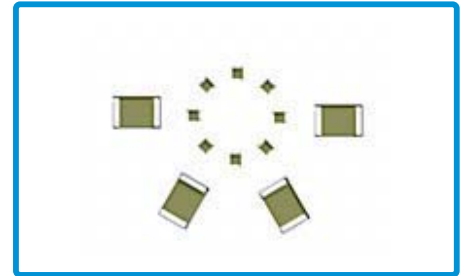
MSC Series
(X1Y2/X2Y3)

MERITEK

FEATURES

- High reliability and stability
- Small size and high capacitance
- RoHS compliant
- Safety standard approval by UL60950

UL No. E342565



MERITEK MSC series safety Chip Capacitors are designed for surge or lightning protection in across the line and line bypass applications, such as telephone, computer network, modem, and other electronic equipments.

SPECIFICATIONS

Dielectric	NPO		X7R	
Size	1808, 1812		1808, 1812, 2211	
Rated voltage (WVDC)	250Vac		250Vac	
Capacitance range*	X1Y2 Class	3pF ~ 470pF	X1Y2 Class	100pF ~ 2200pF
	X2Y3 Class	3pF ~ 1000pF	X2Y3 Class	150pF ~ 4700pF
Capacitance tolerance	Cap≤5pF : B (±0.1pF), C (±0.25pF) 5pF<Cap<10pF : C (±0.25pF), D (±0.5pF) Cap≥10pF : F (±1%), G (±2%), J (±5%), K (±10%)		J (±5%), K (±10%), M (±20%)	
Tan δ*	Cap<30pF : D.F≤1/(400+20C) Cap≥30pF : D.F≤0.10%		≤2.5%	
Insulation resistance at 500Vdc for 60 seconds	≥100GΩ or R·C≥1000 whichever is smaller		≥10GΩ or R·C≥500Ω·F whichever is smaller	
Operating temperature	-55 to +125°C			
Capacitance characteristic	±30ppm / °C		±15%	
Termination	Ag/Ni/Sn (lead-free termination)			

* NPO: Apply 1.0±0.2Vrms, 1.0MHz±10%, at 25°C ambient temperature

X7R: Apply 1.0±0.2Vrms, 1.0kHz±10%, at 25°C ambient temperature.

PART NUMBERING SYSTEM

Meritek Series	MSC			08	X	101	K	302
Size								
Code	08	12	21					
	1808	1812	2211					
Dielectric								
CODE	N		X					
	NPO		X7R					
Capacitance								
CODE	8R2	101	102	152				
pF	8.2	100	1000	1500				
nF	--	.1	1	1.5				
μF	--	0.0001	0.001	0.0015				
Tolerance								
Code	Tolerance	Code	Tolerance	Code	Tolerance			
F	±1%	G	±2%	J	±5%			
K	±10%	M	±20%	Z	+80/-20%			
Rated Voltage								
Code	302	502						
	X2Y3	X1Y2						

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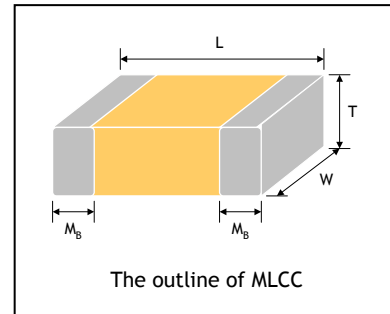


MSC Series
(X1Y2/X2Y3)

MERITEK

DIMENSIONS

Size Inch (mm)	L (mm)	W (mm)	Tmax (mm)	M _b min (mm)
1808 (4520)	4.60±0.30	2.00±0.20	2.20	0.26
1812 (4532)	4.60±0.30	3.20±0.30	2.80	0.26
2211 (5728)	5.70±0.40	2.80±0.30	2.80	0.30



CAPACITANCE RANGE

X1Y2 Class

SIZE	1808	1812	2211
DIELECTRIC	NPO	X7R	X7R
RATED VOLTAGE	250Vac	250Vac	250Vac
CERTIFICATED	UL	UL	UL
CLASS	X1Y2	X1Y2	X1Y2
Capacitance	3.0pF (3R0)		
	3.3pF (3R3)		
	3.9pF (3R9)		
	4.7pF (4R7)		
	5.0pF (5R0)		
	5.6pF (5R6)		
	6.8pF (6R8)		
	8.2pF (8R2)		
	10pF (100)		
	12pF (120)		
	15pF (150)		
	18pF (180)		
	22pF (220)		
	27pF (270)		
	33pF (330)		
	39pF (390)		
	47pF (470)		
	56pF (560)		
	68pF (680)		
	82pF (820)		
	100pF (101)		
	120pF (121)		
	130pF (131)		
	150pF (151)		
	180pF (181)		
	220pF (221)		
	270pF (271)		
	330pF (331)		
	390pF (391)		
	470pF (471)		
560pF (561)			
680pF (681)			
820pF (821)			
1,000pF (102)			
1,200pF (122)			
1,500pF (152)			
1,800pF (182)			
2,200pF (222)			



CAPACITANCE RANGE

X2Y3 Class

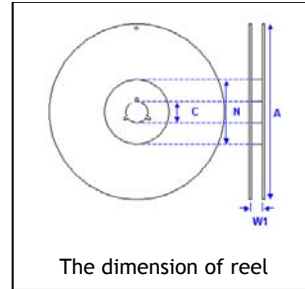
SIZE	1808	1808	1812
DIELECTRIC	NPO	X7R	X7R
RATED VOLTAGE	250Vac	250Vac	250Vac
CERTIFICATEDULULUL
CLASS	X2Y3	X2Y3	X2Y3
Capacitance	3.0pF (3R0)		
	3.3pF (3R3)		
	3.9pF (3R9)		
	4.7pF (4R7)		
	5.0pF (5R0)		
	5.6pF (5R6)		
	6.8pF (6R8)		
	8.2pF (8R2)		
	10pF (100)		
	12pF (120)		
	15pF (150)		
	18pF (180)		
	22pF (220)		
	27pF (270)		
	33pF (330)		
	39pF (390)		
	47pF (470)		
	56pF (560)		
	68pF (680)		
	82pF (820)		
	100pF (101)		
	120pF (121)		
	130pF (131)		
	150pF (151)		
	180pF (181)		
	220pF (221)		
	270pF (271)		
	300pF (301)		
	330pF (331)		
	390pF (391)		
	470pF (471)		
	560pF (561)		
	680pF (681)		
	820pF (821)		
	1,000pF (102)		
	1,200pF (122)		
	1,500pF (152)		
	1,800pF (182)		
	2,200pF (222)		
	2,700pF (272)		
3,300pF (332)			
3,900pF (392)			
4,700pF (472)			



PACKAGE DIMENSIONS

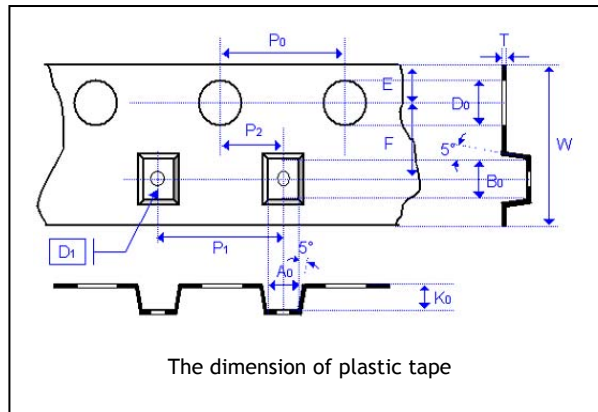
Size	Thickness (mm)	Plastic tape	
		7" reel	13" reel
1808 (4520)	1.25±0.10	2k	-
	1.40±0.15	2k	-
	1.60±0.20	2k	-
	2.00±0.20	1k	-
1812 (4532)	1.25±0.10	1k	-
	1.60±0.20	1k	-
	2.00±0.20	1k	-
	2.50±0.30	0.5k	3k
2211 (5728)	1.60±0.20	1k	-
	2.00±0.20	1k	-
	2.50±0.30	0.5k	-

Size	1808, 1812, 2211
Reel size	7"
C	13.0+0.5/-0.2
W ₁	12.4+2.0/-0
A	178.0±0.10
N	80.0±1.0



Unit: pieces

EMBOSSED TAPE DIMENSIONS



The dimension of plastic tape

Size	1808		1812		2211	
Chip Thickness	1.25±0.10		1.25±0.10		1.60±0.20	2.50±0.30
	1.40±0.15	2.00±0.20	1.60±0.20	2.50±0.30	2.00±0.20	
	1.60±0.20		2.00±0.20			
A ₀	<2.50	<2.50	<3.90	<3.90	<3.30	<3.30
B ₀	<5.30	<5.30	<5.30	<5.30	<6.50	<6.50
T	0.25±0.05	0.25±0.05	0.25±0.05	0.25±0.05	0.30±0.10	0.30±0.10
K ₀	<2.50	<2.50	<2.50	<3.00	<2.50	<3.10
W	12.0±0.20	12.0±0.20	12.0±0.20	12.0±0.20	12.0±0.20	12.0±0.20
P ₀	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10
10xP ₀	40.0±0.20	40.0±0.20	40.0±0.20	40.0±0.20	40.0±0.20	40.0±0.20
P ₁	4.00±0.10	4.00±0.10	8.00±0.10	8.00±0.10	8.00±0.10	8.00±0.10
P ₂	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05	2.00±0.05
D ₀	1.50+0.10/-0	1.50+0.10/-0	1.50±0.10/-0	1.50+0.10/-0	1.50+0.10/-0	1.50+0.10/-0
D ₁	1.50±0.10	1.50±0.10	1.50±0.10	1.50+/-0.10	1.50±0.10	1.50±0.10
E	1.75±0.10	1.75±0.10	1.75±0.10	1.75+/-0.1	1.75±0.1	1.75±0.10
F	5.50±0.05	5.50±0.05	5.50±0.05	5.50+/-0.05	5.50±0.05	5.50±0.05