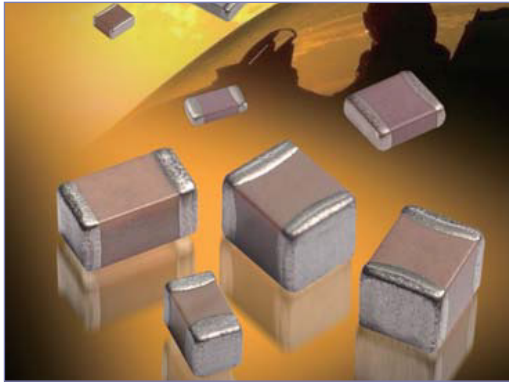


MLC Chip Capacitors

MIL-PRF-123/Chips



AVX's M123 series MIL-qualified ceramic capacitors are designed for high performance application in BX voltage temperature characteristics for general purpose dielectric and in BP voltage temperature characteristics for temperature stable dielectric.

M123 series capacitors offer design and component engineers a proven technology for SMD processing and applications requiring space-level reliability. They are designed for use in timing circuits and critical frequency applications where absolute stability of capacitance is required (BP), as well as in applications where a wider capacitance variation with temperature and voltage can be tolerated (BX)

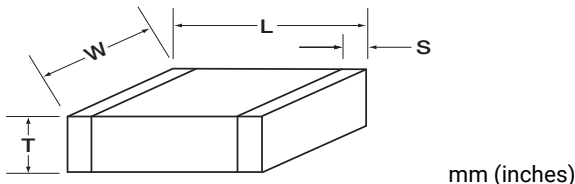
HOW TO ORDER

Military Type Designation: Capacitors, Fixed, Ceramic Dielectric, (Temperature Stable and General Purpose), High Reliability

Not RoHS Compliant

M123	A	10	BX	B	103	K	S									
Mil-Spec Number	Modification Spec.	Slash Sheet Number	Temperature Characteristic	Voltage B = 50V C = 100V	Capacitance Code	Capacitance Tolerance C = ±0.25pF D = ±0.5pF F = ±1% J = ±5% K = ±10% M = ±20%	Termination G = Silver – Nickel - Gold M = Palladium/Silver S = Silver – Nickel – Solder Coated Z = Silver – Nickel – Solder Plated (tin/lead alloy with a minimum of 4 percent lead)									
<div>Capacitance change with reference to 25°C over temperature range -55°C to +125°C</div> <table><tr><th>Symbol</th><th>Without Voltage</th><th>With Rated DC Voltage</th></tr><tr><td>BP</td><td>0 ± 30 ppm/°C</td><td>0 ± 30 ppm/°C</td></tr><tr><td>BX</td><td>+15, -15%</td><td>+15, -25%</td></tr></table>								Symbol	Without Voltage	With Rated DC Voltage	BP	0 ± 30 ppm/°C	0 ± 30 ppm/°C	BX	+15, -15%	+15, -25%
Symbol	Without Voltage	With Rated DC Voltage														
BP	0 ± 30 ppm/°C	0 ± 30 ppm/°C														
BX	+15, -15%	+15, -25%														

DIMENSIONS



(L) Length	(W) Width	(T) Thickness	(S) Termination Band
CKS51, /10, 0805 Size Chip			
2.03 (0.080)	1.27 (0.050)	0.508 (0.020) Min.	0.508 (0.020)
± 0.381 (0.015)	± 0.381 (0.015)	1.40 (0.055) Max.	± 0.254 (0.010)
CKS52, /11, 1210 Size Chip			
3.05 (0.120)	2.54 (0.100)	0.508 (0.020) Min.	0.508 (0.020)
± 0.381 (0.015)	± 0.381 (0.015)	1.65 (0.065) Max.	± 0.254 (0.010)
CKS53, /12, 1808 Size Chip			
4.57 (0.180)	2.03 (0.080)	0.508 (0.020) Min.	0.508 (0.020)
± 0.381 (0.015)	± 0.381 (0.015)	1.65 (0.065) Max.	± 0.254 (0.010)
CKS54, /13, 2225 Size Chip			
5.59 (0.220)	6.35 (0.250)	0.508 (0.020) Min.	0.508 (0.020)
± 0.381 (0.015)	± 0.381 (0.015)	1.78 (0.070) Max.	± 0.254 (0.010)
CKS55, /21, 1206 Size Chip			
3.05 (0.120)	1.52 (0.060)	0.508 (0.020) Min.	0.508 (0.020)
± 0.381 (0.015)	± 0.381 (0.015)	1.65 (0.065) Max.	± 0.254 (0.010)
CKS56, /22, 1812 Size Chip			
4.57 (0.180)	3.18 (0.125)	0.508 (0.020) Min.	0.508 (0.020)
± 0.381 (0.015)	± 0.381 (0.015)	2.03 (0.080) Max.	± 0.254 (0.010)
CKS57, /23, 1825 Size Chip			
4.57 (0.180)	6.35 (0.250)	0.508 (0.020) Min.	0.508 (0.020)
± 0.381 (0.015)	± 0.381 (0.015)	2.03 (0.080) Max.	± 0.254 (0.010)

Slash Sheet	Case Size	Dielectric	Cap Range (pF)
10	0805	BP	1.0-680
		BX	330-18,000
11	1210	BP	300-3,300
		BX	5,600-100,000
12	1808	BP	300-1,000
		BX	5,600-100,000
13	2225	BP	1,100-10,000
		BX	120,000-1,000,000
21	1206	BP	1.0-2,200
		BX	4,700-39,000
22	1812	BP	1,200-10,000
		BX	27,000-180,000
23	1825	BP	3,900-22,000
		BX	56,000-470,000

Performance of SMPS capacitors can be simulated by downloading SpiCalci software program - <http://www.avx.com/download/software/SpiCalci-AVX.zip>

MLC Chip Capacitors

MIL-PRF-123/Chips



MIL-PRF-123/STYLE CKS51, -/10

Part Number 1/ (0805 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage-Temperature Limits	Rated Voltage
M123A10BP_1R0	1.0	C, D	BP	50,100
M123A10BP_1R1	1.1			
M123A10BP_1R2	1.2			
M123A10BP_1R3	1.3			
M123A10BP_1R5	1.5			
M123A10BP_1R6	1.6			
M123A10BP_1R8	1.8			
M123A10BP_2R0	2.0			
M123A10BP_2R2	2.2			
M123A10BP_2R4	2.4			
M123A10BP_2R7	2.7			
M123A10BP_3R0	3.0			
M123A10BP_3R3	3.3			
M123A10BP_3R6	3.6			
M123A10BP_3R9	3.9			
M123A10BP_4R3	4.3			
M123A10BP_4R7	4.7			
M123A10BP_5R1	5.1			
M123A10BP_5R6	5.6			
M123A10BP_6R2	6.2			
M123A10BP_6R8	6.8	C, J, K		
M123A10BP_7R5	7.5			
M123A10BP_8R2	8.2			
M123A10BP_9R1	9.1			
M123A10BP_100	10			
M123A10BP_110	11			
M123A10BP_120	12			
M123A10BP_130	13			
M123A10BP_150	15			
M123A10BP_160	16			
M123A10BP_180	18	F, J, K		
M123A10BP_200	20			
M123A10BP_220	22			
M123A10BP_240	24			
M123A10BP_270	27			
M123A10BP_300	30			
M123A10BP_330	33			
M123A10BP_360	36			
M123A10BP_390	39			
M123A10BP_430	43			
M123A10BP_470	47	F, J, K	BP	50,100
M123A10BP_510	51			
M123A10BP_560	56			
M123A10BP_620	62			
M123A10BP_680	68			
M123A10BP_750	75			

Part Number 1/ (0805 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage-Temperature Limits	Rated Voltage
M123A10BP_820_	82	F, J, K	BP	50,100
M123A10BP_910_	91			
M123A10BP_101_	100			
M123A10BP_111_	110			
M123A10BP_121_	120			
M123A10BP_131_	130			
M123A10BP_151_	150			
M123A10BP_161_	160			
M123A10BP_181_	180			
M123A10BP_201_	200			
M123A10BP_221_	220	F, J, K	BP	50,100
M123A10BP_241_	240			
M123A10BP_271_	270			
M123A10BP_301_	300			
M123A10BP_331_	330			
M123A10BP_361_	360			
M123A10BP_391_	390			
M123A10BP_431_	430			
M123A10BP_471_	470			
M123A10BPB511_	510			
M123A10BPB561_	560	F, J, K	BP	50
M123A10BPB621_	620			
M123A10BPB681_	680			
M123A10BX_331K_	330			
M123A10BX_391K_	390			
M123A10BX_471K_	470			
M123A10BX_561K_	560			
M123A10BX_681K_	680			
M123A10BX_821K_	820			
M123A10BX_102K_	1,000			
M123A10BX_122K_	1,200	K	BX	50,100
M123A10BX_152K_	1,500			
M123A10BX_182K_	1,800			
M123A10BX_222K_	2,200			
M123A10BX_272K_	2,700			
M123A10BX_332K_	3,300			
M123A10BX_392K_	3,900			
M123A10BX_472K_	4,700			
M123A10BXB562K_	5,600			
M123A10BXB682K_	6,800			
M123A10BXB822K_	8,200	K	BX	50
M123A10BXB103K_	10,000			
M123A10BXB123K_	12,000			
M123A10BXB153K_	15,000			
M123A10BXB183K_	18,000			

MLC Chip Capacitors

MIL-PRF-123/Chips

MIL-PRF-123/STYLE CKS52, -/11

Part Number 1/ (1210 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A11BP_301_	300	F, J, K	BP	50,100
M123A11BP_331_	330			
M123A11BP_361_	360			
M123A11BP_391_	390			
M123A11BP_431_	430			
M123A11BP_471_	470			
M123A11BP_511_	510			
M123A11BP_561_	560			
M123A11BP_621_	620			
M123A11BP_681_	680			
M123A11BP_751_	750	F, J, K	BP	50,100
M123A11BP_821_	820			
M123A11BP_911_	910			
M123A11BP_102_	1,000			
M123A11BP_112_	1,100			
M123A11BP_122_	1,200			
M123A11BP_132_	1,300			
M123A11BP_152_	1,500			
M123A11BP_162_	1,600			
M123A11BP_182_	1,800			
M123A11BP_202_	2,000	F, J, K	BP	50,100
M123A11BP_222_	2,200			

Part Number 1/ (1210 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A11BPB242_	2,400	F, J, K	BP	50
M123A11BPB272_	2,700			
M123A11BPB302_	3,000			
M123A11BPB332_	3,300			
M123A11BX_562_	5,600	K, M	BX	50,100
M123A11BX_682_	6,800			
M123A11BX_822_	8,200			
M123A11BX_103_	10,000			
M123A11BX_123_	12,000			
M123A11BX_153_	15,000			
M123A11BX_183_	18,000	K, M	BX	50,100
M123A11BX_223_	22,000			
M123A11BX_273_	27,000			
M123A11BX333_	33,000			
M123A11BXB393_	39,000	K, M	BX	50
M123A11BXB473_	47,000			
M123A11BXB563_	56,000			
M123A11BXB683_	68,000			
M123A11BXB823_	82,000	K, M	BX	50
M123A11BXB104_	100,000			

MIL-PRF-123/STYLE CKS53, -/12

Part Number 1/ (1808 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A12BP_301_	300	F, J, K	BP	50,100
M123A12BP_331_	330			
M123A12BP_361_	360			
M123A12BP_391_	390			
M123A12BP_431_	430			
M123A12BP_471_	470			
M123A12BP_511_	510			
M123A12BP_561_	560			
M123A12BP_621_	620			
M123A12BP_681_	680			
M123A12BP_751_	750	F, J, K	BP	50,100
M123A12BP_821_	820			
M123A12BP_911_	910			
M123A12BP_102_	1,000			

Part Number 1/ (1808 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A12BX_562K_	5,600	K	BX	50,100
M123A12BX_682K_	6,800			
M123A12BX_822K_	8,200			
M123A12BX_103K_	10,000			
M123A12BX_123K_	12,000			
M123A12BX_153K_	15,000			
M123A12BX_183K_	18,000	K	BX	50,100
M123A12BX_223K_	22,000			
M123A12BX_273K_	27,000			
M123A12BX_333K_	33,000			
M123A12BXB393K_	39,000	K	BX	50
M123A12BXB473K_	47,000			
M123A12BXB563K_	56,000			
M123A12BXB683K_	68,000			
M123A12BXB823K_	82,000	K	BX	50
M123A12BXB104K_	100,000			

MIL-PRF-123/STYLE CKS54, -/13

Part Number 1/ (2225 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A13BPB112_	1,100	F, J, K	BP	50
M123A13BPB122_	1,200			
M123A13BPB132_	1,300			
M123A13BPB152_	1,500			
M123A13BPB162_	1,600			
M123A13BPB182_	1,800			
M123A13BPB202_	2,000			
M123A13BPB222_	2,200			
M123A13BPB242_	2,400			
M123A13BPB272_	2,700			
M123A13BPB302_	3,000	F, J, K	BP	50
M123A13BPB332_	3,300			
M123A13BPB362_	3,600			
M123A13BPB392_	3,900			
M123A13BPB432_	4,300			
M123A13BPB472_	4,700			
M123A13BPB512_	5,100			

Part Number 1/ (2225 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A13BPB562_	5,600	F, J, K	BP	50
M123A13BPB622_	6,200			
M123A13BPB682_	6,800			
M123A13BPB752_	7,500			
M123A13BPB822_	8,200	F, J, K	BP	50
M123A13BPB912_	9,100			
M123A13BPB103_	10,000			
M123A13BxB124K_	120,000			
M123A13BxB154K_	150,000	K	BX	50
M123A13BxB184K_	180,000			
M123A13BxB224K_	220,000			
M123A13BxB274K_	270,000			
M123A13BxB334K_	330,000	K	BX	50
M123A13BxB394K_	394,000			
M123A13BxB474K_	474,000			
M123A13BxB105K_	1,000,000			

MLC Chip Capacitors

MIL-PRF-123/Chips



MIL-PRF-123/STYLE CKS55, -/21

Part Number 1/ (1206 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A21BPC1R0_	1.0	B, C	BP	100
M123A21BPC1R1_	1.1			
M123A21BPC1R2_	1.2			
M123A21BPC1R3_	1.3			
M123A21BPC1R5_	1.5			
M123A21BPC1R6_	1.6			
M123A21BPC1R8_	1.8	B, C	BP	100
M123A21BPC2R0_	2.0			
M123A21BPC2R2_	2.2			
M123A21BPC2R4_	2.4			
M123A21BPC2R7_	2.7			
M123A21BPC3R0_	3.0	B, C, D	BP	100
M123A21BPC3R3_	3.3			
M123A21BPC3R6_	3.6			
M123A21BPC3R9_	3.9			
M123A21BPC4R3_	4.3			
M123A21BPC4R7_	4.7			
M123A21BPC5R1_	5.1	B, C, D	BP	100
M123A21BPC5R6_	5.6			
M123A21BPC6R2_	6.2			
M123A21BPC6R8_	6.8			
M123A21BPC7R5_	7.5			
M123A21BPC8R2_	8.2			
M123A21BPC9R1_	9.1	B, C, D	BP	100

Part Number 1/ (1206 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A21BPC100_	10	F, J, K	BP	100
M123A21BPC110_	11			
M123A21BPC120_	12			
M123A21BPC130_	13			
M123A21BPC150_	15			
M123A21BPC160_	16			
M123A21BPC180_	18			
M123A21BPC200_	20			
M123A21BPC240_	24			
M123A21BPC270_	27			
M123A21BPC330_	33			
M123A21BPC360_	36			
M123A21BPC390_	39	F, J, K	BP	100
M123A21BPC430_	43			
M123A21BPC470_	47			
M123A21BPC510_	51			
M123A21BPC560_	56			
M123A21BPC620_	62			
M123A21BPC680_	68			
M123A21BPC750_	75			
M123A21BPC820_	82			
M123A21BPC910_	91			
M123A21BPC101_	100			

MIL-PRF-123/STYLE CKS55, -/21

Part Number 1/ (1206 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A21BPC111_	110	F, J, K	BP	100
M123A21BPC121_	120			
M123A21BPC131_	130			
M123A21BPC151_	150			
M123A21BPC161_	160			
M123A21BPC181_	180			
M123A21BPC201_	200	F, J, K	BP	100
M123A21BPC221_	220			
M123A21BPC241_	240			
M123A21BPC271_	270			
M123A21BPC301_	300			
M123A21BPC331_	330			
M123A21BPC361_	360	F, J, K	BP	100
M123A21BPC391_	390			
M123A21BPC431_	430			
M123A21BPC471_	470			
M123A21BPC511_	510			
M123A21BPC561_	560			
M123A21BPC621_	620	F, J, K	BP	100
M123A21BPC681_	680			
M123A21BPC751_	750			
M123A21BPC821_	820			
M123A21BPC911_	910			
M123A21BPC102_	1,000			

Part Number 1/ (1206 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A21BPB112_	1,100	F, J, K	BP	50
M123A21BPB122_	1,200			
M123A21BPB132_	1,300			
M123A21BPB152_	1,500			
M123A21BPB162_	1,600			
M123A21BPB182_	1,800			
M123A21BPB202_	2,000	F, J, K	BP	50
M123A21BPB222_	2,200			
M123A21BXC472_	4,700			
M123A21BXC562_	5,600			
M123A21BXC682_	6,800			
M123A21BXC822_	8,200			
M123A21BXC103_	10,000	K, M	BX	100
M123A21BXC123_	12,000			
M123A21BXC153_	15,000			
M123A21BXC183_	18,000			
M123A21BXC223_	22,000			
M123A21BXC273_	27,000			
M123A21BXC333_	33,000	K, M	BX	50
M123A21BXC393_	39,000			

MLC Chip Capacitors

MIL-PRF-123/Chips

MIL-PRF-123/STYLE CKS56, -/22

Part Number 1/ (1812 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A22BPC122_	1,200	F, J, K	BP	100
M123A22BPC152_	1,500			
M123A22BPC182_	1,800			
M123A22BPC222_	2,200			
M123A22BPC242_	2,400			
M123A22BPC272_	2,700			
M123A22BPC302_	3,000			
M123A22BPC332_	3,300			
M123A22BPC362_	3,600			
M123A22BPC392_	3,900			
M123A22BPC432_	4,300			
M123A22BPC472_	4,700			
M123A22BPC512_	5,100	F, J, K	BP	50
M123A22BPC562_	5,600			
M123A22BPC622_	6,200			
M123A22BPC682_	6,800			
M123A22BPC752_	7,500			
M123A22BPC822_	8,200			
M123A22BPC912_	9,100			
M123A22BPC103_	10,000			

Part Number 1/ (1812 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A22BXC273_	27,000	K, M	BX	100
M123A22BXC333_	33,000			
M123A22BXC393_	39,000			
M123A22BXC473_	47,000			
M123A22BXC563_	56,000	K, M	BX	100
M123A22BXC823_	82,000			
M123A22BXC104_	100,000			
M123A22BXC124_	120,000			
M123A22BXC154_	150,000			
M123A22BXC184_	180,000	K, M	BX	50

MIL-PRF-123/STYLE CKS57, -/23

Part Number 1/ (1825 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A23BPC392_	3,900	F, J, K	BP	100
M123A23BPC472_	4,700			
M123A23BPC512_	5,100			
M123A23BPC562_	5,600			
M123A23BPC622_	6,200			
M123A23BPC682_	6,800			
M123A23BPC752_	7,500			
M123A23BPC822_	8,200			
M123A23BPC912_	9,100			
M123A23BPC103_	10,000			
M123A23BPC113_	11,000			
M123A23BPC123_	12,000			
M123A23BPC133_	13,000	F, J, K	BP	50
M123A23BPC153_	15,000			
M123A23BPC163_	16,000			
M123A23BPC183_	18,000			
M123A23BPC203_	20,000			
M123A23BPC223_	22,000			

Part Number 1/ (1825 Size Chip)	Capacitance pF	Capacitance Tolerance	Voltage- Temperature Limits	Rated Voltage
M123A23BXC563_	56,000	K, M	BX	100
M123A23BXC683_	68,000			
M123A23BXC823_	82,000			
M123A23BXC104_	100,000			
M123A23BXC124_	120,000			
M123A23BXC154_	150,000	K, M	BX	100
M123A23BXC184_	180,000			
M123A23BXC224_	220,000			
M123A23BXC274_	270,000			
M123A23BXC334_	330,000			
M123A23BXC394_	390,000			
M123A23BXC474_	470,000	K, M	BX	50