

GENERAL DESCRIPTION

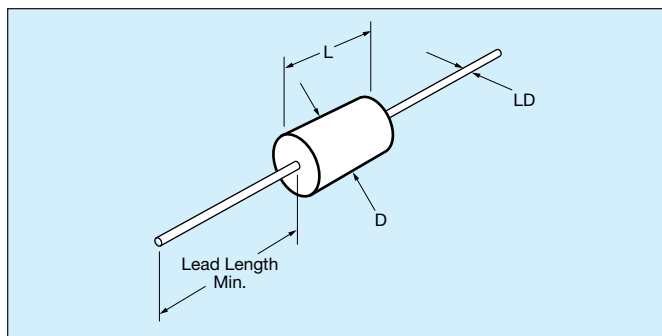
AVX MA Series

Molded Axial Leaded MLC

Temperature Coefficient: C0G (NP0), X7R, Z5U
50V, 100V and 200V

Case Material: Molded Epoxy

Lead Material: Solderable



HOW TO ORDER

MA10

Molded Axial Size

MA10
MA20
MA30
MA40
MA50
MA60

5

Voltage

5 = 50V
1 = 100V
2 = 200V

E

Dielectric

A = C0G (NP0)
C = X7R
E = Z5U

104

Capacitance

First two digits are the significant figures of capacitance. Third digit indicates the additional number of zeros. For example, order 100,000 pF as 104. (For values below 10pF use "R" in place of decimal point, e.g., 1R4 = 1.4pF.)

Z

Capacitance Tolerance

C0G (NP0):
F = ±1%
J = ±5%
K = ±10%
M = ±20%
D = ±5pF
<10pF only

X7R:
J = ±5%
K = ±10%
M = ±20%

Z5U:
M = ±20%
Z = +80%
-20%

A

Failure Rate
A = Not Applicable

A

Leads
A = Standard

‡ C tolerance available C0G (NP0) from 1.0 to 9.1 pF only. Minimum tolerance for values 10 pF - 100 pF is D or F whichever is greater.

MARKING (EXAMPLE)

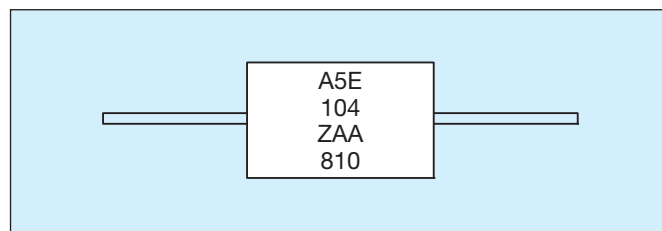
Line 1, A (for AVX), 5 = 50 Volts (V is optional),
E = TC Line 2, 104Z = Capacitance Code

Line 3, Tolerance, 2 digit Lot Code

Date Code: 8 = 2008

10 = Week

Four Digit Date Code Optional



MILITARY CROSS REFERENCE AND DIMENSIONS GUIDE

AVX Style	Per MIL-Spec			Case Size		
	MIL-C-11015	MIL-PRF-39014	MIL-PRF-20	Length (L)	Diameter (D)	Lead Diameter (LD)
MA10	CK12	CKR11	CCR75/CC75	4.07 ± .25 (.160" ± .010")	2.29 ± .25 (.090" ± .010")	.48 ± .05 (.019" ± .002")
MA20	CK13	CKR12	CCR76/CC76	6.35 ± .25 (.250" ± .010")	2.29 ± .25 (.090" ± .010")	.48 ± .05 (.019" ± .002")
MA40	CK14	CKR14	CCR77/CC77	9.91 ± .25 (.390" ± .010")	3.56 ± .25 (.140" ± .010")	.63 ± .05 (.025" ± .002")
MA50	CK15	CKR15	CCR78/CC78	12.7 ± .51 (.500" ± .020")	6.35 ± .38 (.250" ± .015")	.63 ± .05 (.025" ± .002")
MA60	CK16	CKR16	CCR79/CC79	17.53 ± .51 (.690" ± .020")	8.89 ± .51 (.350" ± .015")	.63 ± .05 (.025" ± .002")

For Military/Established Reliability Molded/Axial Lead see MIL-C-11015, MIL-PRF-39014, MIL-PRF-20 Section.

Dimensions: Millimeters (Inches)

SIZE AND CAPACITANCE SPECIFICATIONS



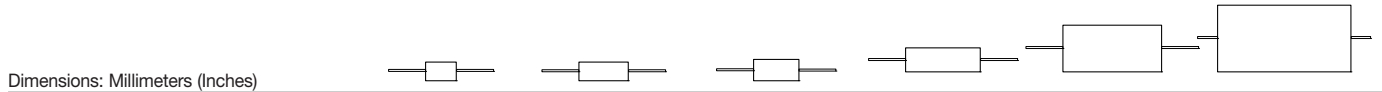
Dimensions: Millimeters (Inches)

AVX Style		MA10	MA20	MA30	MA40	MA50	MA60									
Length		4.07 ± .25 (.160" ± .010")	6.35 ± .25 (.250" ± .010")	6.09 ± .25 (.240" ± .010")	9.91 ± .25 (.390" ± .010")	12.7 ± .51 (.500" ± .020")	17.53 ± .51 (.690" ± .020")									
Diameter		2.29 ± .25 (.090" ± .010")	2.29 ± .25 (.090" ± .010")	3.30 ± .25 (.130" ± .010")	3.56 ± .25 (.140" ± .010")	6.35 ± .38 (.250" ± .015")	8.89 ± .51 (.350" ± .015")									
Lead Diameter		.48 ± .05 (.019" ± .002")	.48 ± .05 (.019" ± .002")	.48 ± .05 (.019" ± .002")	.63 ± .05 (.025" ± .002")	.63 ± .05 (.025" ± .002")	.63 ± .05 (.025" ± .002")									
Lead Length		25.4 (1.00")	25.4 (1.00")	25.4 (1.00")	25.4 (1.00")	25.4 (1.00")	25.4 (1.00")									
Cap. in pF	Typical AVX Part Nos.	WVDC			WVDC			WVDC			WVDC			WVDC		
		200	100	50	200	100	50	200	100	50	200	100	50	200	100	50
220	MA____5C221KAA															
270	MA____5C271KAA															
330	MA____5C331KAA															
390	MA____5C391KAA															
470	MA____5C471KAA															
560	MA____5C561KAA															
680	MA____5C681KAA															
820	MA____5C821KAA															
1000	MA____5C102KAA															
1200	MA____5C122KAA															
1500	MA____5C152KAA															
1800	MA____5C182KAA															
2200	MA____5C222KAA															
2700	MA____5C272KAA															
3300	MA____5C332KAA															
3900	MA____5C392KAA															
4700	MA____5C472KAA															
5600	MA____5C562KAA															
6800	MA____5C682KAA															
8200	MA____5C822KAA															
10,000	MA____5C103KAA															
12,000	MA____5C123KAA															
15,000	MA____5C153KAA															
18,000	MA____5C183KAA															
22,000	MA____5C223KAA															
27,000	MA____5C273KAA															
33,000	MA____5C333KAA															
39,000	MA____5C393KAA															
47,000	MA____5C473KAA															
56,000	MA____5C563KAA															
68,000	MA____5C683KAA															
82,000	MA____5C823KAA															
100,000	MA____5C104KAA															
120,000	MA____5C124KAA															
150,000	MA____5C154KAA															
180,000	MA____5C184KAA															
220,000	MA____5C224KAA															
270,000	MA____5C274KAA															
330,000	MA____5C334KAA															
390,000	MA____5C394KAA															
470,000	MA____5C474KAA															
560,000	MA____5C564KAA															
680,000	MA____5C684KAA															
820,000	MA____5C824KAA															
1.0 µF	MA____5C105KAA															
1.2 µF	MA____5C125KAA															
1.5 µF	MA____5C155KAA															
1.8 µF	MA____5C185KAA															
2.2 µF	MA____5C225KAA															
2.7 µF	MA____5C275KAA															
3.3 µF	MA____5C335KAA															
3.9 µF	MA____5C395KAA															

For other tolerances see Part No. Codes
 For other voltages see Part No. Codes.
 AVX Style

Z5U Dielectric

SIZE AND CAPACITANCE SPECIFICATIONS



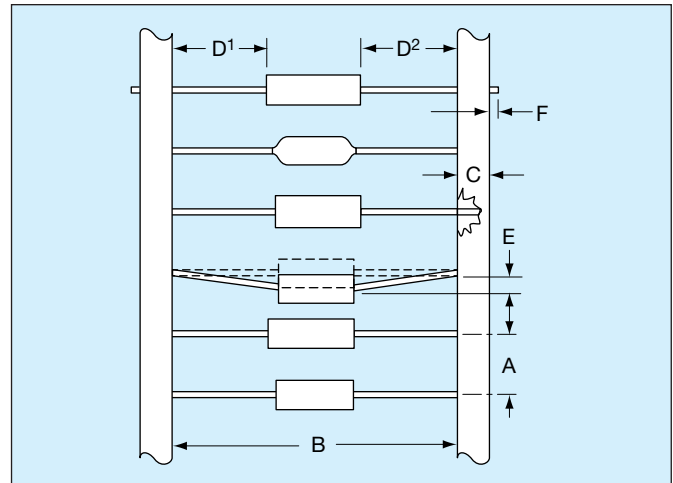
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Diameter		2.29 ± .25 (.090" ± .010")	2.29 ± .25 (.090" ± .010")	3.30 ± .25 (.130" ± .010")	3.56 ± .25 (.140" ± .010")	6.35 ± .38 (.250" ± .015")	8.89 ± .51 (.350" ± .015")									
Lead Diameter		.48 ± .05 (.019" ± .002")	.48 ± .05 (.019" ± .002")	.48 ± .05 (.019" ± .002")	.63 ± .05 (.025" ± .002")	.63 ± .05 (.025" ± .002")	.63 ± .05 (.025" ± .002")									
Lead Length		25.4 (1.00")	25.4 (1.00")	25.4 (1.00")	25.4 (1.00")	25.4 (1.00")	25.4 (1.00")									
Cap. in pF	Typical AVX Part Nos.	WVDC			WVDC			WVDC			WVDC			WVDC		
		200	100	50	200	100	50	200	100	50	200	100	50	200	100	50
1000	MA___5E102ZAA															
1200	MA___5E122ZAA															
1500	MA___5E152ZAA															
1800	MA___5E182ZAA															
2200	MA___5E222ZAA															
2700	MA___5E272ZAA															
3300	MA___5E332ZAA															
3900	MA___5E392ZAA															
4700	MA___5E472ZAA															
5600	MA___5E562ZAA															
6800	MA___5E682ZAA															
8200	MA___5E822ZAA															
10,000	MA___5E103ZAA															
12,000	MA___5E123ZAA															
15,000	MA___5E153ZAA															
18,000	MA___5E183ZAA															
22,000	MA___5E223ZAA															
27,000	MA___5E273ZAA															
33,000	MA___5E333ZAA															
39,000	MA___5E393ZAA															
47,000	MA___5E473ZAA															
56,000	MA___5E563ZAA															
68,000	MA___5E683ZAA															
82,000	MA___5E823ZAA															
100,000	MA___5E104ZAA															
120,000	MA___5E124ZAA															
150,000	MA___5E154ZAA															
180,000	MA___5E184ZAA															
220,000	MA___5E224ZAA															
270,000	MA___5E274ZAA															
330,000	MA___5E334ZAA															
390,000	MA___5E394ZAA															
470,000	MA___5E474ZAA															
560,000	MA___5E564ZAA															
680,000	MA___5E684ZAA															
820,000	MA___5E824ZAA															
1.0 µF	MA___5E105ZAA															
1.2 µF	MA___5E125ZAA															
1.5 µF	MA___5E155ZAA															
1.8 µF	MA___5E185ZAA															
2.2 µF	MA___5E225ZAA															
2.7 µF	MA___5E275ZAA															
3.3 µF	MA___5E335ZAA															
3.9 µF	MA___5E395ZAA															
4.7 µF	MA___5E475ZAA															
5.6 µF	MA___5E565ZAA															
6.8 µF	MA___5E685ZAA															
8.2 µF	MA___5E825ZAA															

For other tolerances see Part No. Codes
 For other voltages see Part No. Codes.
 AVX Style

TAPE AND REEL

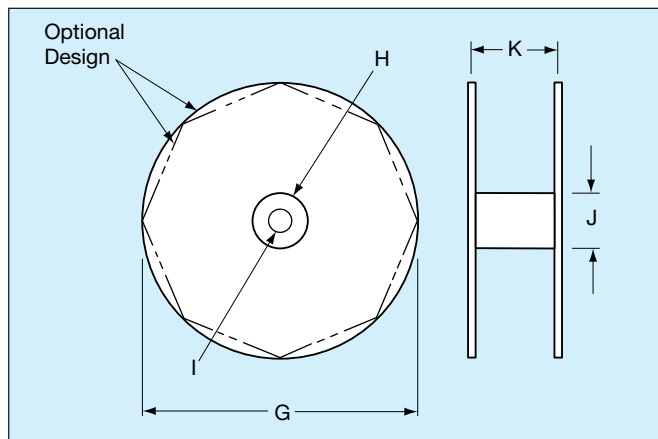
CLASS I / RS-296	
A.	5mm ± 0.5mm (.200" ± 0.020")
B*	52.4mm ± 1.5mm (2.063" ± 0.059")
C.	6.35mm ± 0.4mm (0.250" ± 0.016")
D ¹ -D ² .	1.4mm (0.055" MAX.)
E.	1.2mm (0.047" MAX.)
F.	1.6mm (0.063" MAX.)
G.	356mm (14.00")
H.	76mm (3.000")
I.	25.4mm (1.000")
J.	84mm (3.300")
K.	70mm (2.750")



Leader Tape: 300mm min. (12")

Splicing: Tape Only

Missing Parts: 0.25% of component count max.-
No consecutive missing parts



REEL QUANTITIES (MAX.) ‡

SA05	7,500 pcs.	MA10	5,000 pcs.
SA10	7,500 pcs.	MA20	5,000 pcs.
SA11	5,000 pcs.	MA30	3,000 pcs.
SA20	5,000 pcs.	MA40	3,000 pcs.
SA30	5,000 pcs.	MA50	950 pcs.
SA40	5,000 pcs.	MA60	650 pcs.

‡ 1000 pc. reels available for distribution pack only in ±1% and ±2% tolerance.

* Standard Tape Spacing Shown. Also available in 26.0mm + 1.5mm, - 0mm, (1.023 in. + .059 in. - 0 in.) for SpinGuards only. EIA Class I, II and III tape spacings are available for molded axials. Tape spacing for Class II is 63.5mm ± 1.5mm (2.50 in ± .059 in), and for Class III 73mm ± 1.5mm (2.87 in ± .059 in)

ADDITIONAL PACKAGING AVAILABLE

AMMO PACK

Tape Spacing	SA05, SA10 SA20	SA11 SA30	SA40	BOX SIZES (Nominal)		
				L	W	H
52.4mm ± 1.5mm (2.062" ± .059")	4,000 pcs.	2000	2,000 pcs.	255mm (10.039")	73mm (2.874")	93mm (3.661")
26.0mm + 1.5mm - 0mm (1.023" + .059" - 0")	4,000 pcs.*	2000	2,000 pcs.*	255mm (10.039")	48mm (1.889")	113mm (4.448")

*SpinGuard only

BULK PACK (MOLDED AXIALS ONLY)

MA10 MA20 MA30 MA40	100 pcs. (bag)
MA50 MA60	50 pcs. (bag)